

# Computer Skills for Media

Data-gathering, Language and Presentation Skills

**BA - Journalism & Mass Communication**

**I Year**

Paper Code: BAJM 1913



**Pondicherry University**  
(A Central University)

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<b>Unit II:</b> Language skills – English Communication – Using online dictionary and tools for checking usage of spellings and grammar such as Grammarly.	<b>Unit II:</b> Importance of Language Skills (Pages 22 – 43)
<b>Unit III:</b> Using Google Docs and Sheets – Creating a brochure using Google Docs – Creating a newsletter using Microsoft Word.	<b>Unit III:</b> Working with Google Docs and Sheets (Pages 44 – 96)
<b>Unit IV:</b> Utilizing a Learning Management System (LMS) such as Edmodo for online learning, online discussions and sharing of educational materials, and feedback to/from the instructor and peer students to/from each learner.	<b>Unit IV:</b> Understanding Learning Management System (LMS) (Pages 97 – 116)
<b>Unit V:</b> Publishing articles and photographs on personal blogs to be created on a Content Management System (CMS) such as WordPress, Wix and Blogger.	<b>Unit V:</b> Use of CMS to Writers and Content Creators (Pages 117 – 142)



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# Unit I

## Data Collection and Information Processing

### Learning Objectives:

By the end of this unit, students will be able to understand:

- Data collection
- Information processing
- Computer Assisted Reporting and Research
- Designing Google Forms for online survey

### Structure:

- 1.1 Introduction
- 1.2 Data-gathering and Information Processing Skills
  - 1.2.1 Data, Information and Knowledge
  - 1.2.2 Data Collection/Data-gathering
  - 1.2.3 Information Processing Skills
- 1.3 Computer Assisted Reporting (CAR) and Research
- 1.4 Designing and Sending Forms for Online Survey
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- 1.5 Answers to ‘Check Your Progress’
- 1.6 Summary
- 1.7 Key Terms
- 1.8 Self-Assessment Questions and Exercises
- 1.9 References

## 1.1 INTRODUCTION

In today's world, we are dealing with huge amount of data or information. Various industries, people involved in business, researchers, etc. are using this data to predict or to forecast certain decisions. To understand data with which we are

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dealing need to be collected using some systematic approach. Data needs to be processed to transform it to information. This information can be then used to generate various types of reports. These reports can be used by different people to take different types of decisions. Researchers use data to find or to prove certain theory or concepts. There are various tools and techniques available for data collection. Data can be collected online or offline. Interviews, document appraisal, focus group discussions, observations, photograph, video, surveys, evaluations, case studies, and so on are examples of these methods.

## 1.2 DATA-GATHERING AND INFORMATION PROCESSING SKILLS

Today, various organizations, research labs, etc. deal with huge amount of data that can be processed into information. Data is collected from various sources using different methodologies. This raw and collected data needs to be processed by using various analytical tools and techniques. This transforms the data into information and knowledge, which is used by knowledge workers and researchers to take an appropriate decision or to make conclusions. Let's discuss each of them separately.

### 1.2.1 Data, Information and Knowledge

**Data** is the simple representation of a fact, concept or instructions in a formal manner. This data is used for communication, interpretation or processing by an individual or a computer system.

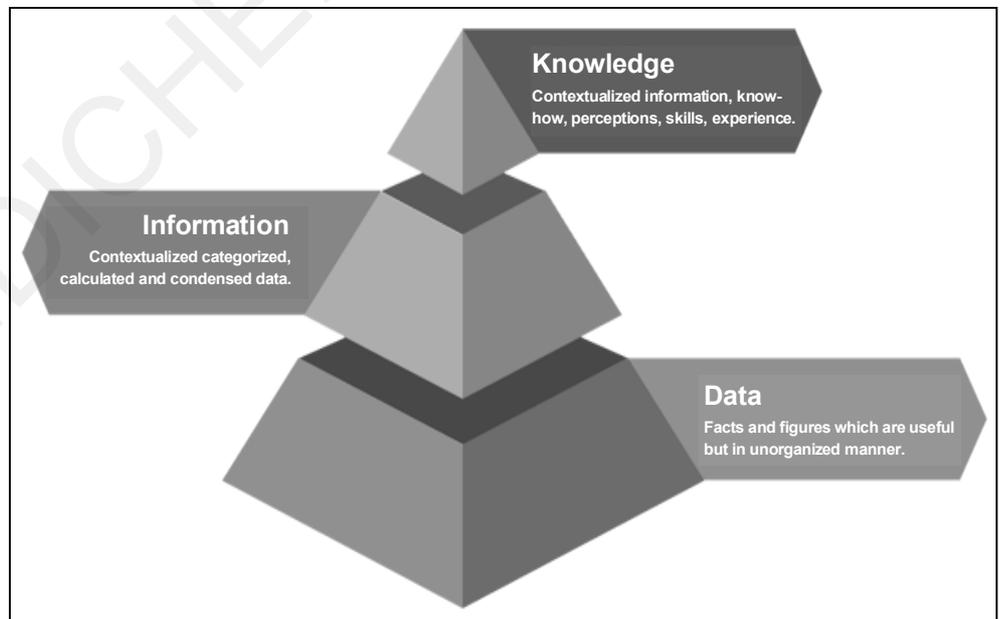


Fig. 1.1

**Information** is an organized or structured data that has an intended meaning for its users. Information can be considered as a processed data on which actions or decisions can be taken.

**NOTES**

Information is transformed into **knowledge** when it is used to make decisions and take appropriate actions based on the taken decision. Hence knowledge can be considered as processed information that helps in drawing conclusions.

### **1.2.2 Data Collection/Data-gathering**

Data-gathering plays an important role in statistical data analysis. There are various methods available to gather the information. Data can be broadly classified as primary data and secondary data based on how it is collected.

Primary data is collected for the first time by the investigator while secondary data is the data already collected or produced by others.

Primary data is collected with an aim for getting solution to the problem while secondary data is collected for some other purposes.

**Primary data** sources include:

- Surveys
- Observations
- Experiments
- Questionnaires
- Personal interviews, etc.

**Secondary data** sources include:

- Government publications
- Websites
- Books
- Journal articles
- Internal records, etc.

Let's discuss these methods in short.

#### **Primary Data Collection Methods**

**Survey:** Survey is most used commonly method in social sciences, management, marketing, etc. A survey method is a technique in which information is gathered by asking questions to a predefined group of people. Surveys can be conducted in different ways like online or offline survey.

**Observation:** This method collects first-hand data by paying attention to the various activities happening in the respective environment.

**Interview:** This method gathers data where two or more people are involved in exchanging information through a series of questions and answers.

**Questionnaire:** A questionnaire consists of a number of questions printed on a form and respondent is supposed to write answers to those questions.

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## Secondary Data Collection Methods

Secondary data collection is the method where data is already collected or analyzed by another person for some other purpose. Sources of secondary data are government publications, websites, books, journal articles, internal records, etc.

### 1.2.3 Information Processing Skills

Information Processing is a set of steps where individuals perceive, analyze, manipulate, use, and remember the information.

Being in a digital era, information gathering is not a big task. Huge amount of information is available today on just clicks of buttons. But how are we using this available information is crucial. We should learn the skills to understand, analyze and process the available information.

We can consider the following steps to be performed in information processing.

#### Asking Question:

Here, we try to identify the problem.

#### Searching Various Solutions or Alternatives

Think and search all possible solutions to solve the identified problem.

#### Collecting Required Data

Collect the required data from various available sources.

#### Accept or Reject the Alternatives

We may decide to accept or reject the alternatives based on data collected. Only one alternative can be accepted as the solution to the given problem.

Alternatives may also known as hypothesis in the research.

Consider the example given below to understand information processing given below.

**Step 1:** When you get home, you turn on the light. It doesn't give off any light. As a result, you try different bulbs. They don't even have a shine to them. As a result, you assumed there was no electricity.

**Step 2:** You start thinking for various alternatives (hypothesizing) that:

1. Electricity may not be there in other houses as well.
2. Cabling must have some problem.
3. The fuse must have gone.
4. The bulb might have been burnt.
5. The fuse in the pole might have gone, etc.

**Step 3:** You start collecting data about the availability of electricity from the neighbours or may be from news.

The first notion is disproved when you discover that other households have electricity. You contact an electrician and request that he examine

**NOTES**

the cabling for any issues. He checks with a tester and other tools. Since no problem with cabling, the second hypothesis is also rejected.

The fourth hypothesis is similarly disproved when the bulbs are examined and found to be in fine working order. You ask the electrician to check the pole fuse, which he does and finds to be fine, thus the fifth option is ruled out.

We only have one hypothesis now. It's a fuse. You walk to the metre board and discover that the fuse has blown, so you ask the electrician to replace it.

**Step 4:** You've agreed to the third hypothesis, which is the solution to our dilemma.

Following are the four steps which constitute the skills required for information processing that can be used to solve problems.

- (a) Skill in identifying a problem
- (b) Skill in hypothesizing
- (c) Skill in collection of relevant data
- (d) Skill in accepting or rejecting the hypothesis.

**Check Your Progress**

1. Information is \_\_\_\_\_ data. (raw/processed/new)
2. \_\_\_\_\_ is primary data collection method. (publications/websites/interviews)
3. Information processing skills are required to \_\_\_\_\_ data (store/manage/understand)

**1.3 COMPUTER ASSISTED REPORTING (CAR) AND RESEARCH**

Computer-assisted writing and online media research are becoming more common among newsroom reporters than ever before.

Computer Assisted Reporting focuses on the computer technology of news collection, emphasising how computers assist journalists by making the drafting of news and reports easier. Journalists can now dig up critical material on deadline and rapidly add depth and context thanks to new tools and techniques.

CAR allows journalists to dig for authenticity in data, and the comparative study that a computer can perform frequently uncovers relevant topics.

**Check Your Progress**

4. CAR stands for \_\_\_\_\_.
5. CAR helps journalists to find \_\_\_\_\_ in data.
6. CAR focuses on \_\_\_\_\_ of news gathering.

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## 1.4 DESIGNING AND SENDING FORMS FOR ONLINE SURVEY

There are various tools, applications or software available to create online surveys. The most popular and widely used tool today is Google Form. We will discuss how to create surveys using Google Form, and how we can send and used created survey in this section.

### 1.4.1 Google Form

Google Forms is a free tool that enables to collect information with surveys and feedback forms. This tool is very easy to use. We just need a Google account to create a form.

Google Forms allow different types of questions, from full-text answers to checkboxes and ratings. This range of different types of questions helps us to use Google Form in various ways as listed below:

- Online registration for event participants
- Voting
- Questionnaire
- Online research
- Customer feedback

#### Advantages of Google Form

- **Convenience:** We do not need to download the form created to share it with respondents.
- **Unique design:** Service gallery or our own images with predefined themes can be used.
- **Accessibility:** The form is stored on Google Drive. Hence, it can be accessed from anywhere and anytime.
- **Public access:** Co-editors can be added to form to give edit access to other team members.
- **Convenient analytics:** Automatic graphs and tables can be created.

### 1.4.2 Designing Google Form for Survey

Let's see the steps to design Google Form.

1. **Create or login to your Google account.**
2. **Starting or opening Google Form.**

- (a) Click Google apps and select Forms. Choose a ready template or a blank form to create a form from scratch.

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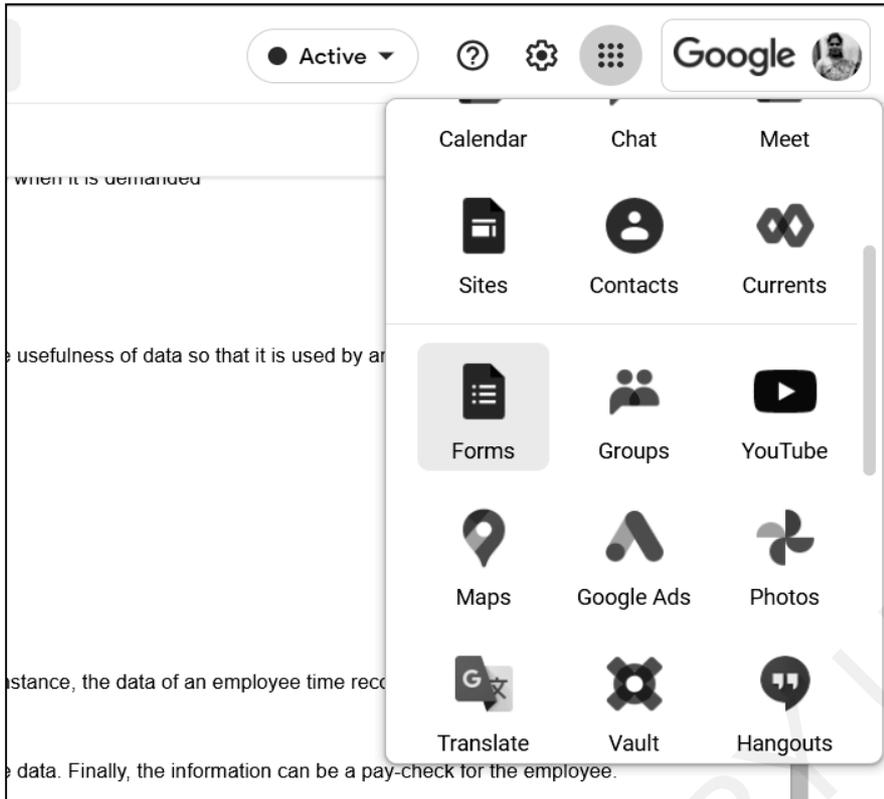


Fig. 1.2

- (b) Follow the link <https://docs.google.com/forms> to open Forms home page.
- (c) From Google drive, click New > Google Forms and choose the template.

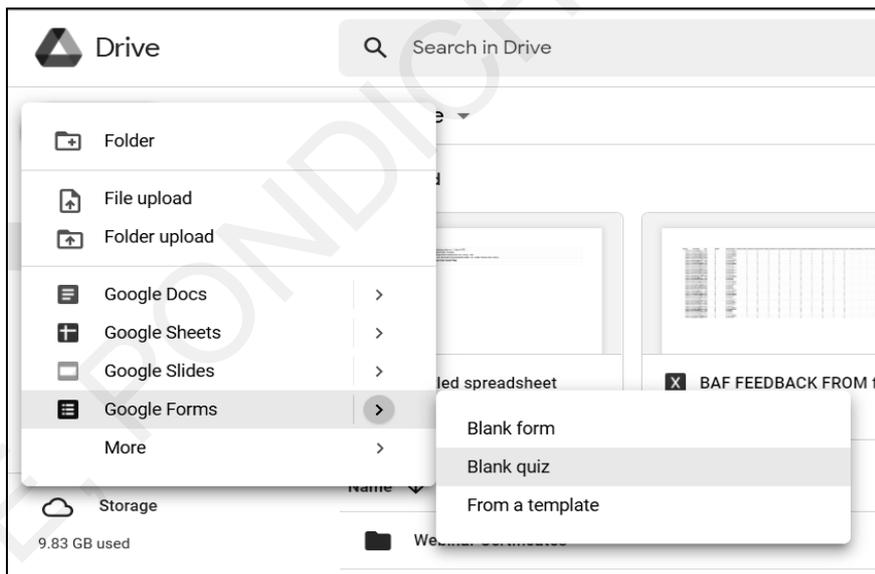


Fig. 1.3

### 3. Using Google form features

The buttons to access the settings and customization options are located in the upper right corner of the page.

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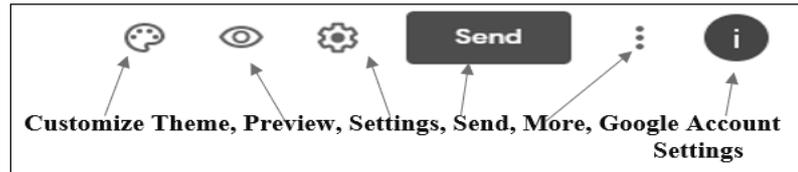


Fig. 1.4

- Collect email addresses, limit to one response, modify after submit, display summary charts, and text responses are all choices on the **General tab** of the Settings.

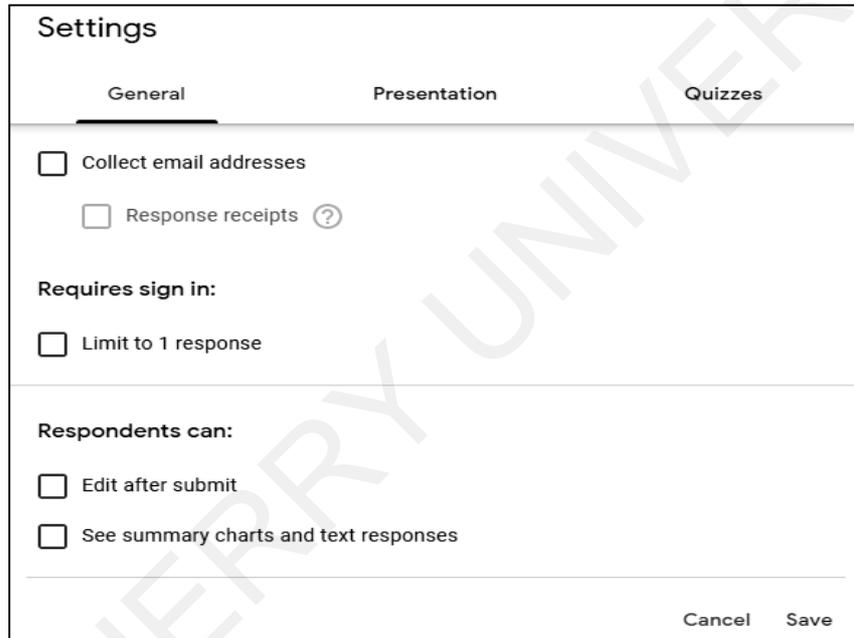


Fig. 1.5

- Show progress bar, scramble question order, and show link to provide another response are all choices on the **Presentation tab** in Settings.

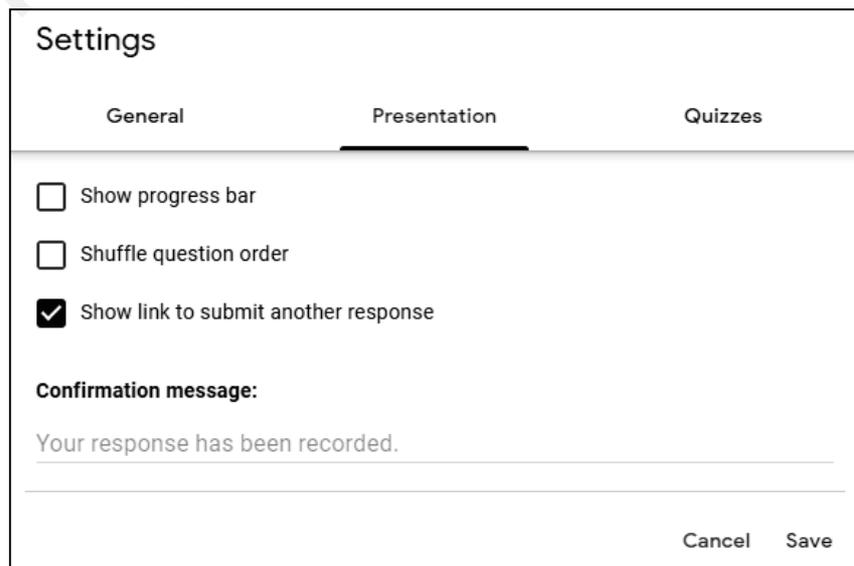


Fig. 1.6

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- **Theme Option menu** has options of changing header image, theme color, background color, font style. We can change the main colour, the background colour, and the typeface used in the form to alter the theme of the template. We can also add a header image, upload one, or pick from a variety of possibilities.

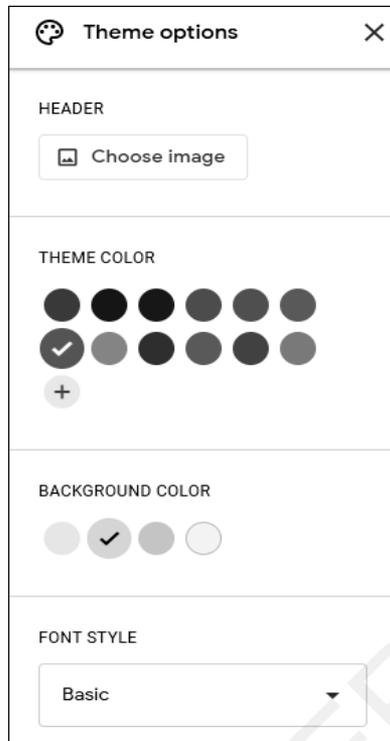


Fig. 1.7

#### 4. Google Form Questions and Question Types

To add a new question, use the first button. Each question can be customized with a title and a description. An image or a video also can be added to question.



Fig. 1.8

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**Types of Questions:**

- **Short answer form questions**

Short answer questions just require a single line of response. This answer can be validated using the three dots menu:

How many times have you watched the shows?

Short answer text

Number Whole number Please use a whole number

Required

Fig. 1.9

- **Paragraph form questions**

A multi-line text answer is possible with a paragraph question. It can be validated using a minimum or maximum length, as well as a common expression, and a custom message can be displayed if the validation fails.

Why do you like Monty Python?

Long answer text

Length Minimum character count 160 Please write more than a tweet

Required

Fig. 1.10

- **Multiple choice, checkboxes and drop-down form questions**

The respondent can choose from a variety of pre-written options in these three sorts of inquiries. Whereas multiple choice and drop-down choices only allow for one answer, checkboxes allow responders to choose from a variety of options.

NOTES

The screenshot shows a form question editor for a multiple choice question. The question text is "What's your favourite Monty Python dish?". The question type is set to "Multiple choice". There are six radio button options: "Spam", "Lemon Curry", "Albatros", "Rat Cake", "Other...", and "Add option". Each option has a small 'x' icon to its right. At the bottom, there are icons for cloning and deleting the question, and a "Required" toggle switch which is currently turned on.

Fig. 1.11

- **File upload form questions**

A user can upload a file to the form owner's Google Drive by answering these questions. By including this question, respondents must be signed in with their Google Account.

You must confirm that you agree to grant people access to your Google Drive in order to answer this question.

The screenshot shows a confirmation dialog box titled "Let respondents upload files to Drive". The text inside reads: "Files will be uploaded to the form owner's Google Drive. Respondents will be required to sign in to Google when file upload questions are added to a form. Make sure to only share this form with people you trust." At the bottom right, there are "Cancel" and "Continue" buttons.

Fig. 1.12

When generating a File upload inquiry, the message as shown Fig. 1.12 occurs.

You can limit the types of files that can be submitted as well as their size, and you can upload numerous files at once.

The screenshot shows a form question editor for a file upload question. The question text is "Upload your best drawing". The question type is set to "File upload". There are three settings: "Allow only specific file types" (toggle off), "Maximum number of files" (dropdown set to 1), and "Maximum file size" (dropdown set to 10 MB). Below these settings, it says "This form can accept up to 1 GB of files. Change". At the bottom, there are icons for cloning and deleting the question, and a "Required" toggle switch which is currently turned off.

Fig. 1.13

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Permit only certain file types: When you turn this on, you'll be able to pick which file types are accepted.

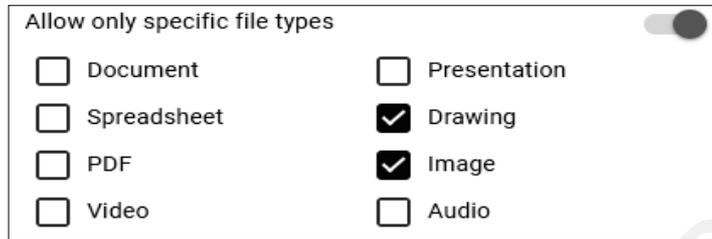


Fig. 1.14

- **Maximum number of files:** This dropdown menu allows to choose between 1, 5 and 10 files to be uploaded at once.
- **Maximum file size:** Select file size among various values like 1 MB, 10 MB, 100 MB, 1 GB, and 10 GB.

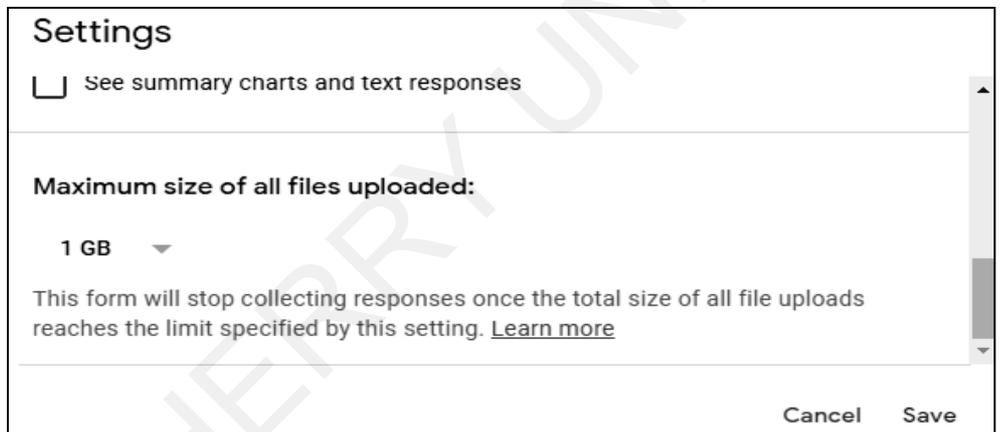


Fig. 1.15

- **Linear scale form questions**

This sort of inquiry generates a scale with a maximum of 10 points, starting at 1 or 0. The responders will choose a point on the scale that best represents their thoughts.

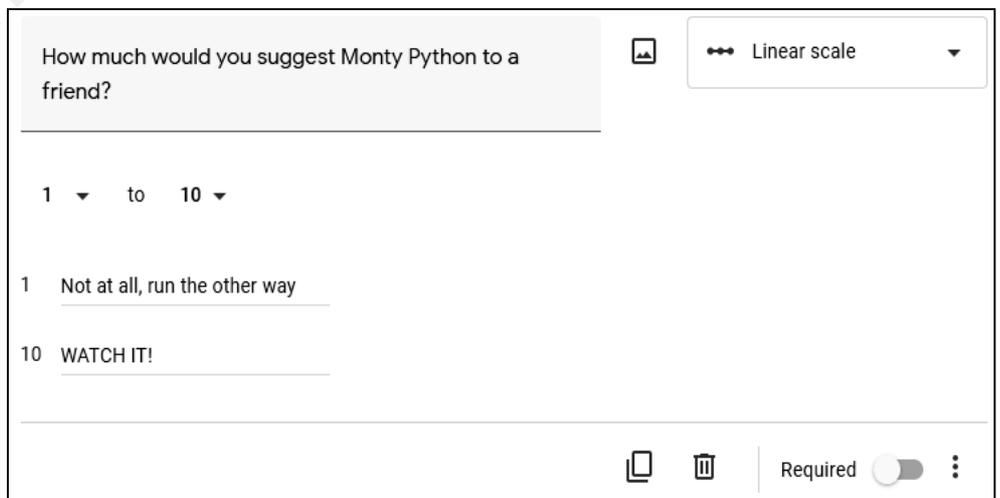


Fig. 1.16

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How much would you suggest Monty Python to a friend?

1 2 3 4 5 6 7 8 9 10

Not at all, run the other way           WATCH IT!

Fig. 1.17

Fig. 1.17 shows how a linear scale question seem to the responder.

- **Multiple choice grid and Checkboxes grid questions**

These questions form a grid with multiple choice or checkbox questions in each row. We can make it so that an answer is required for each row and/or that the respondent is limited to one response per column (do not set both if you have more rows than columns). We can also shuffle the order of the rows.

What's your order of preference of these titles?

Multiple choice grid

Rows		Columns	
1. And Now for Something Completely Differ...	X	<input type="radio"/> Just no	X
2. Monty Python and the Holy Grail (1975)	X	<input type="radio"/> Meh	X
3. Monty Python's Life of Brian (1979)	X	<input type="radio"/> Love it	X
4. Monty Python Live at the Hollywood Bowl ...	X	<input type="radio"/> The FUNniest	X
5. Monty Python's The Meaning of Life (1983)	X	<input type="radio"/> Add column	
6. Add row			

Require a response in each row

Fig. 1.18

NOTES

What's your order of preference of these titles?

	Just no	Meh	Love it	The FUNniest
And Now for Something Completely Different (1971)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monty Python and the Holy Grail (1975)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monty Python's Life of Brian (1979)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monty Python Live at the Hollywood Bowl (1982)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monty Python's The Meaning of Life (1983)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fig. 1.19

Fig. 1.19 shows how a multiple choice grid seem to the responder.

- **Date and Time form questions**

Respondents can insert a date in the Date type question. There are options for including or excluding the year, as well as including or excluding the time. Respondents can enter a time or a duration in the Time type question.

When was last time you watched one of the shows?

Month, day, year

Date

Required

Fig. 1.20

- **Divide the Form into Sections**

The Form can be divided into pages using sections, and each section is displayed to the respondent independently.

From the last option in the floating menu to the right of the page, we may build a new section.

NOTES



Fig. 1.21

### 1.4.3 Accessing Answers in a Google Form

The responses are collected in a separate tab on the same website as the form. Answers can be viewed in a Summary, by question in the Question page, or by respondent in the Individual tab.

You can have the answers automatically updated on a sheet by using the Google Sheet button. More answer options are accessible from the three dots menu, including downloading the answers in a \*.csv file, triggering an email notification each time the form is submitted, and printing the results.



Fig. 1.22

A multiple choice question is summarised in Fig. 1.23. The answers given with the "other" option are also listed in the side legend. Different entries will be generated if the same response is spelled differently. As a result, a manual tally will be required.

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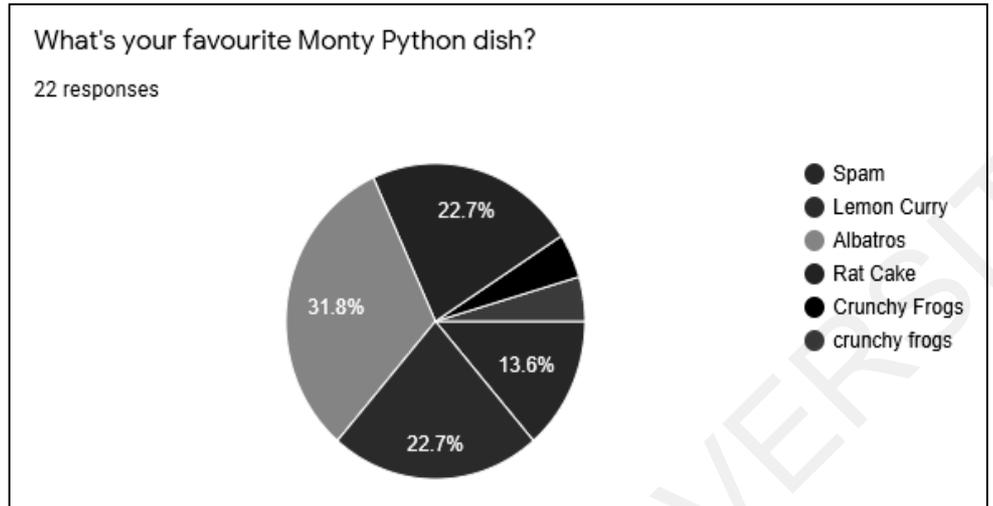


Fig. 1.23

#### 1.4.4 Other Google Form Features – Quiz

From the options, we can enable Quiz mode at any moment. This will give you more options for each sort of question, such as auto-grading, assigning a score to each question, and providing feedback to go along with the findings, among other things.

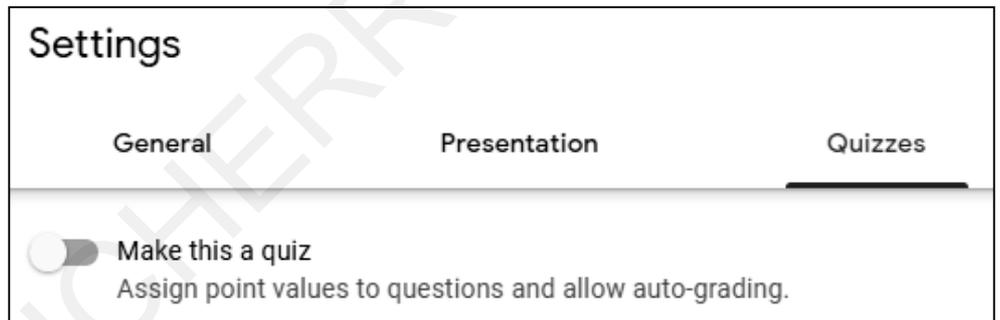


Fig. 1.24

#### 1.4.5 Sending Survey Form – Sharing Google Form

Survey form created through Google Form can be shared or sent to various respondent in various ways.

(a) Mail the survey form

- Open a form in Google Forms.
- In the top right, click Send.
- Add the email addresses you want to send the form to, along with the email subject and message.
- Click Send.

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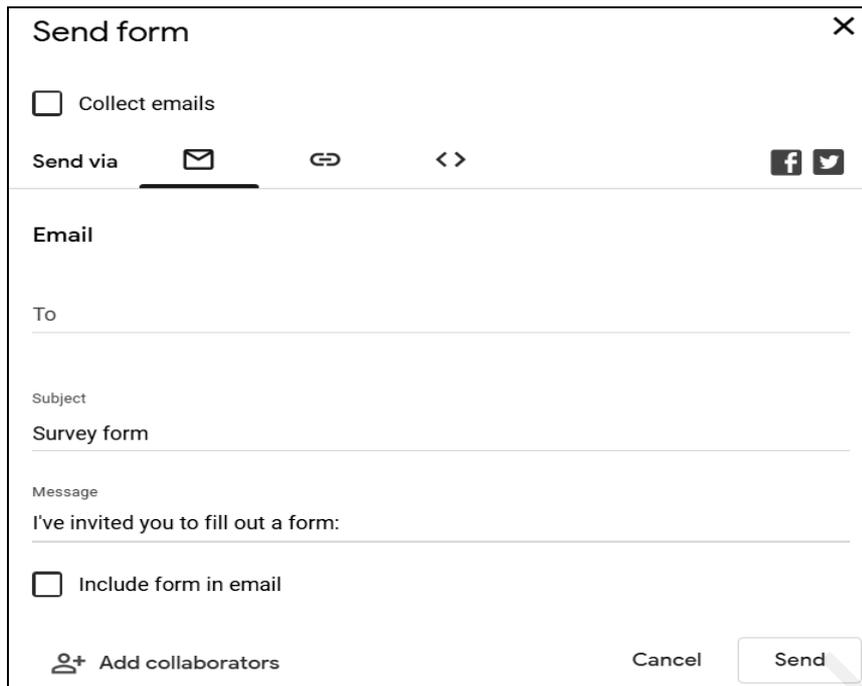


Fig. 1.25

(b) Get a link of survey form

To share a form through a chat or email message, we can get a link to the form.

- Open a form in Google Forms.
- In the top right, click Send.
- At the top of the window, click Link.
- To copy the link that appears, click Copy.

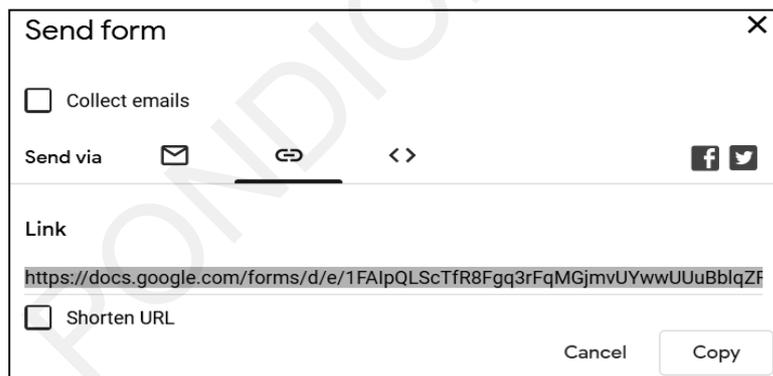


Fig. 1.26

(c) Share a survey form on social media

- Open a form in Google Forms.
- In the top right, click Send.
- At the top right, choose Twitter or Facebook.
- Follow the instructions to share the form.

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Send form

Collect emails

Send via   

Email

To

Subject

Survey form

Message

I've invited you to fill out a form:

Include form in email

 Add collaborators

Cancel

Send

Fig. 1.27

**(d) Send a pre-filled form**

We can send respondents a form with some fields already filled in.

- Open a form in Google Forms.
- In the top right, click More.
- Choose Get pre-filled link.
- Fill in any answer fields you want to pre-populate.
- Click Get link.
- To send the pre-populated form to respondents, copy and send the link at the top.

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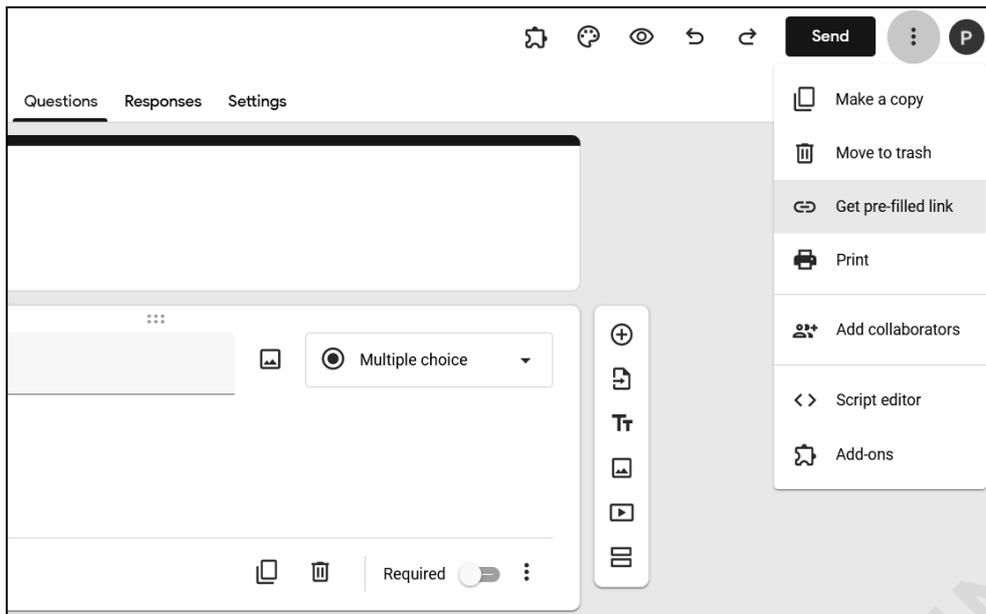


Fig. 1.28

(e) Embed a form to website or block

- Open a form in Google Forms.
- In the top right, click Send.
- At the top of the window, click Embed.
- Copy the HTML script that appears.
- Paste the HTML script into your website or blog.

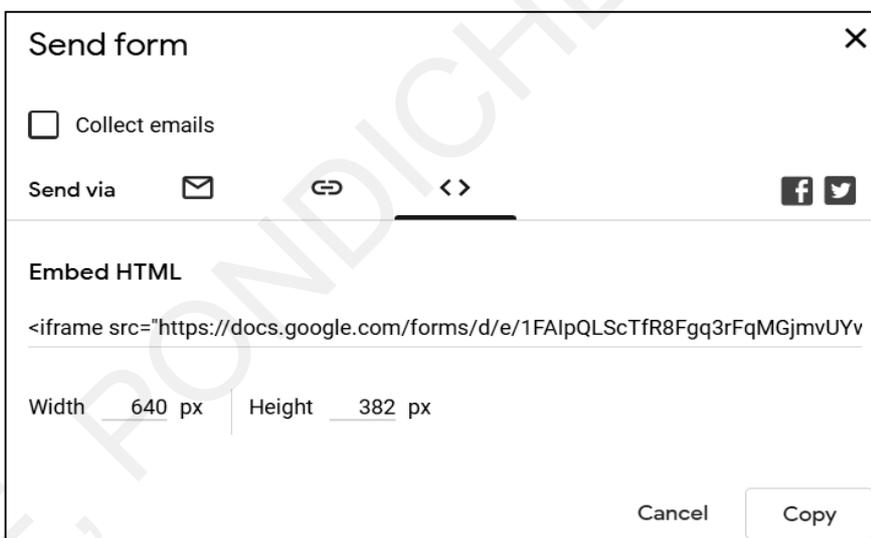


Fig. 1.29

**Check Your Progress**

7. \_\_\_\_\_ option allows to change look and feel of survey form.
8. Google Form does auto analysis of responses received. State True or False.
9. Survey form can be shared through websites using \_\_\_\_\_ option.

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## 1.5 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Processed
2. Interviews
3. Understand
4. Computer Assisted Reporting
5. Truth
6. Computerization
7. Theme
8. True
9. Embed

## 1.6 SUMMARY

- Data needs to be gathered for various purposes. Data is divided into primary and secondary data based on data sources and how data is collected.
- Data can be collected through methods like surveys, observations, experiments, etc.
- Data available on various sources, many data processing tools and techniques are available. Processed data is known as information which is used for further data analysis.
- Computerized tools are also available for news gathering and trustworthy reporting.
- Google Form is one of the popular tools that can be used for data collection in survey/questionnaire method to collect primary data.

## 1.7 KEY TERMS

- **Data:** The simple representation of a fact, concept or instructions in a formal manner.
- **Information:** Can be considered as a processed data on which actions or decisions can be taken.
- **Primary Data:** Collected for the first time by the researcher.
- **Secondary Data:** The data already collected or produced by others.
- **Information Processing:** A set of steps where individuals perceive, analyze, manipulate, use, and remember the information.
- **Google Forms:** A free tool that enables to collect information with surveys and feedback forms.

## 1.8 SELF-ASSESSMENT QUESTIONS AND EXERCISES

### Short Answer Questions

1. Explain the terms – data, information and knowledge.
2. What are the skills required to process the information?
3. Explain Computer Assisted Reporting in short.
4. Which tool can be used to create online surveys?
5. How to create online surveys?

### Long Answer Questions

1. List and explain data-gathering techniques.
2. Explain various steps involved in information processing with example.
3. Explain the various usage of Google Forms.
4. List and explain different ways to send Survey Form.

## 1.9 REFERENCES

1. *Business Intelligence* by Dr. Rajendra Patil and Dr. Santosh Kumar Singh, University of Mumbai.
2. *Methods of Data Collection* by Syed Muhammad Sajjad Kabir and Curtin University.
3. *Primary and Secondary Sources of Data* by Victor Oluwatosin Ajayi, Benue State University, Makurdi.
4. *Computer Assisted Reporting Tools* by Bruce Garrison, University of Miami.
5. <https://forms.google.com>

### NOTES

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## Unit II Importance of Language Skills

### Learning Objectives:

By the end of this unit, students will be able to understand:

- How to communicate well
- How to develop skills related to language
- The ways to learn a language
- How to use grammar to support language learning

### Structure:

- 2.1 Introduction
- 2.2 Language Skills
- 2.3 English Communication
  - 2.3.1 Importance of English Communication
  - 2.3.2 How to Develop a Command over the English Language?
- 2.4 Using Online Dictionaries and Tools for Checking Usage of Spellings and Grammar such as Grammarly
  - 2.4.1 What is Grammarly? How Does it Help?
- 2.5 Answers to 'Check Your Progress'
- 2.6 Summary
- 2.7 Key Terms
- 2.8 Self-Assessment Questions and Exercises
- 2.9 References

### 2.1 INTRODUCTION

The topic language skills is about the fact that the knowledge of the English language holds prime importance in today's era and time. The ability to speak and read in English is an asset for many people to match today's need in the competitive world. The topic allows students to understand the requirements of language, how to develop the necessary skills and the reasons behind having a command over language skills. Let us understand why language skills are necessary for people in today's competitive and ever developing world. The reasons are as follows:

1. **Common language to share ideas:** Having a good knowledge of language is a prerequisite as it acts as a common language for

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communication among the people of different states and countries. The knowledge of having good language skills makes you accessible with people and also sharing ideas becomes easy. The communication becomes smoother if both parties communicate in the same language.

2. **Opens door for new opportunities:** Having a sound knowledge of language enables a person to open doors for new opportunities. Since they have knowledge of language, it is easier for them to even speak well. A person with sound knowledge will also be able to have impactful conversations. A well spoken individual can easily conquer opportunities and seize the world.
3. **Increases earning potential:** When a person can communicate in a very good language, his career graph always escalates. The ability of good language skills always impresses people. Most companies have the requirement for people with excellent speaking and language skills. The potential for businesses to hire such candidates is always high. This also leads to higher earning capacity of individuals. Having good language skills make you sound, learned and capable. Therefore, people with impressive language skills can attract more opportunities in the market.
4. **LSRW:** LSRW describes the four important and powerful skills required in the 21st century. LSRW stands for listening, speaking, reading and writing. These four qualities are the survival skills of today's competitive world. The ability to listen is very important as proper communications can only happen if the concerns have been listened to and understood clearly. Those individuals who do not listen carefully usually are the ones who cannot deliver work properly because the first step is not fulfilled correctly. The second must-have ability is to speak properly. Simply, listening or having knowledge is not sufficient, if the speaking skills are not taken seriously. The ability to draw a beautiful string of words in the right tone of voice and in the right manner will help the individual to do a great job in communications and team building. The quality of reading is an asset for those who want to improve their knowledge and utilize it in further dealings with different people and in different situations. Reading only improvises the language as well as the habits. This is basically the number one way to improvise and develop skills which are ever in demand. The last step is writing. The writing part can only then be developed when the knowledge and language skills are perfect. The writing is basically an output of what you know. The ability to listen, speak, read and write is a skill which each individual should possess as it helps in elevating at work spaces and also adds an edge over others.

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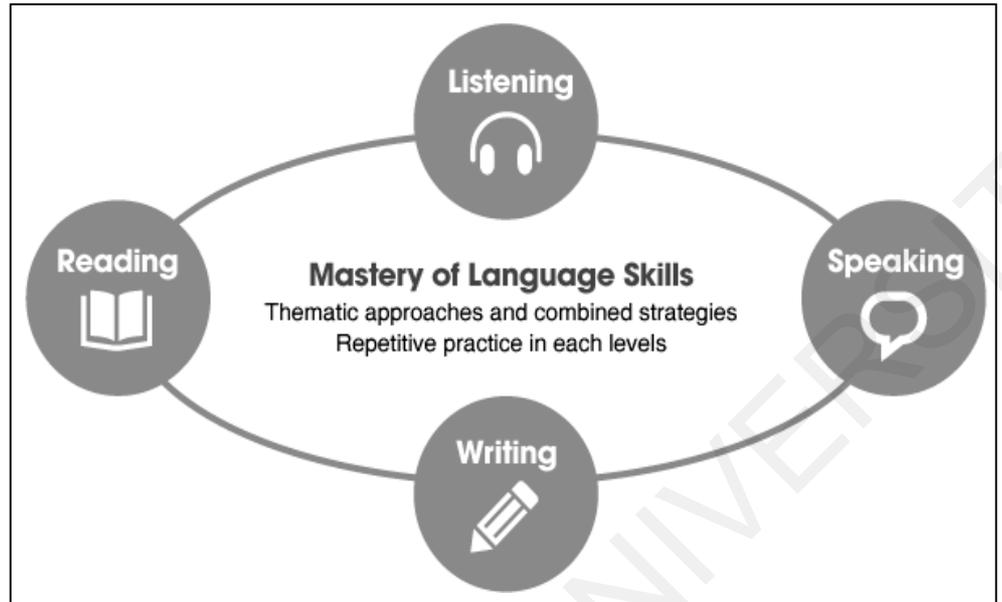


Fig. 2.1: The essentials of language learning

## 2.2 LANGUAGE SKILLS

Knowledge of language skills is the most important requirement in today's competitive world. Having a good command over the language skills is an art which enhances the career prospects and also the personality. Language skills are required in oral communication, aural communication and written communication. Having good language skills can help you to stand apart from the crowd. Positive knowledge of language skills helps an individual to excel at school and college level examinations. Even those individuals who wish to pursue a career overseas are required to attempt a language exam which tests the knowledge of the students. Language skills are the prerequisite in today's advancing world. There are various types of learners who come from different backgrounds and are unable to develop expressive language skills. However, as it is rightly said that, "It is never too late" there are many ways in which one can improve their language skills, irrespective of age, race, gender and backgrounds. Below are some ways to develop great language skills:

### 1. Read often

"Books are man's best friends". This is a very popular quote and stands true even to this date. Books are the best source of knowledge and also engages the reader till the end. Books provide an array of information for new words, new ideas and make the reader capable of understanding things in a new perspective which is a surprise for the reader as well. Books help the readers to experiment with new words and encourage them to use it in their communication elsewhere. Every individual should carry a book with them everywhere they go. Books open a new world to the readers, the books make you travel places through words. Reading often supports imagination building which is very essential for language

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skills. The books elevate a form of discipline in the readers, making them curious for knowledge. It is very difficult for an avid book reader to not read a book or stop from reading because it is a constant source of knowledge. Book reading introduces the reader with the format of sentence structure, allows them to read in properly structured and grammatically correct language which allows them to implement even in oral communication. There is a lot of observational learning involved when individuals get involved in books. Reading one page everyday will surely bring about positive change for the reader. This is not an overnight process but slowly and steadily makes a lifetime impact.

**2. Listen attentively**

One of the most common mistakes made by individuals is not attentively listening to the speaker. The gift of listening is with very few people. Listening attentively can benefit an individual in numerous ways. This ability of listening is an art which needs a lot of hard work and sincere practice. Listening attentively and with a clear mind brings about the correct mindspace to learn from the speaker. Every individual whom we come across with, in various walks of life, makes a contribution to our knowledge and personality which we rarely acknowledge due to lack of awareness. Listening allows us to understand a fresh new perspective and makes us more receptive to changes which we require to make in our skills. It could be speaking, pronunciation or even a mindset. Often, people listen to reply, instead listening should be done to learn. Listening should also be done to perform; if you listen well, only then you can perform well.

**3. Think and write in the same language**

Large number of people make a common mistake of thinking in their mother tongue and then translating it to English while writing. This must be stopped immediately. Using two languages to pen down in one language simply stresses the brain and the output is not impressive. For instance, if the content is to be written in English, it is better to think the content in English and then produce it. The thought language could have wrong English structure, that is fine as long as the mind has begun the process of thinking in a foreign language. Language skills can only be developed if the language in the mind and the language on the paper match with each other. Language skills can be developed with constant practice and dedication. The ability to think in a common language helps in giving a good output making it easier to play with vocabulary. The writing and thinking ability together can be performed only after rigorous practice.

**4. Perform oral communication in the weak language**

Most people shy away from speaking the language they are weak in. It is a natural tendency for people to prefer speaking in a language they are good at. Practicing the weaker language allows the native speaker to

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slowly and gradually catch up with the developed language. Listening to speeches or talks in the weaker language helps to bring about a positive change in speaking ability of the native speaker. Practicing orally with the people who are proficient in the language makes a positive impact on the learner. Oral communication practiced often can make the learner a master in the desired language. Oral communication strengthens the basics of the language, thereby making a lasting impression on the listener. Always make an effort to constantly speak in a weaker language which makes your ability to speak that language better. Constant practice will ultimately make you the master of the language you are practicing. After speaking orally, the individual should analyze where he went wrong and what would be the scope of improvement.

### 5. Listen to podcasts and audiobooks

Many people are very good audio receptors. They often learn most whilst listening. The audiobooks and podcasts are helpful for such learners with strong auditory skills. Listening in the weaker language helps to develop the language in the conscious mind, which thereby promotes verbal communication. If a language plays in the minds of the people, it automatically reflects in the verbal communication. There are a range of podcasts available which provide a lot of support, encouragement and information to the listeners. These podcasts actually generate a lot of practice, tips and techniques for the audiences. Simply, just listening to the speaker's choice of words, explanation, pronunciation and even pitch of voice helps to learn a lot from the other speakers. There are a range of audiobooks and podcasts in many different languages, one can choose the language they want to master in and get started with these audio tools. The audiobooks are of different time lengths and topics as well. The learners can choose their preferred topic, their time slot and get started with the improvement. For improving language skills, it is very important to set up a discipline where you set aside a certain time frame everyday simply to listen to audiobooks or podcasts. This little practice each day can lead to impactful results and improvements which will be defined.

### 6. Work hard on understanding the grammar of the language

Grammar is the most important part of the language. It has an ability to add or refute meaning from the sentence. It is a rule for any language to work very hard and prepare for the grammar before you start the verbal communication. There are many people who simply copy others or copy other people's style of speaking. However, this is short-lived. When you learn something temporary or when you learn something new, it is important to learn it till the crux of the matter. The grammar of any language plays a very key role as it helps in sentence structure and even adds meaning to the words. Say, for instance, you want to say, "I am indebted with your favour", this can be said correctly when you know your grammar, but if you only know words and do not know grammar,

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your sentence could be “I indebted with favour” this is an example of lack of grammar and lack of sentence structure. It is very easy to copy and mimic, but very difficult to learn and develop content. Content can be self-developed only if the person is well versed in the field of grammar of the language. Not knowing the language actually makes you handicapped in framing sentences when you are on your own. The learning of grammar and application of it makes a huge difference in the basic day-to-day vocabulary as well. The learned individual is ready to speak in any situation which he is facing. The one who is mimicking and not learning usually finds himself zipped during this time and is unable to understand and face challenges. Always remember, a learned man is prepared for challenges and an unlearned man is not ready to face half of it. Therefore, in order to master any language, one has to make sure he or she takes sincere efforts in winning the situation by learning from it and taking efforts to improvise the situation. The content can only be made better or accentuated when the basic knowledge of it is sufficed. The basic knowledge is basically grammar. Whenever a language is taught, the first importance is given to the base which is grammar. The essence of this language is very high and it is the primary step for progress. Therefore, the knowledge of grammar should not be neglected if an individual wants to genuinely progress or master the language. Grammar is like the food for the language. The knowledge of this is highly essential in fulfilling the purpose of communication and that can only be achieved with good language. Hence, grammar and language learning go hand in hand.

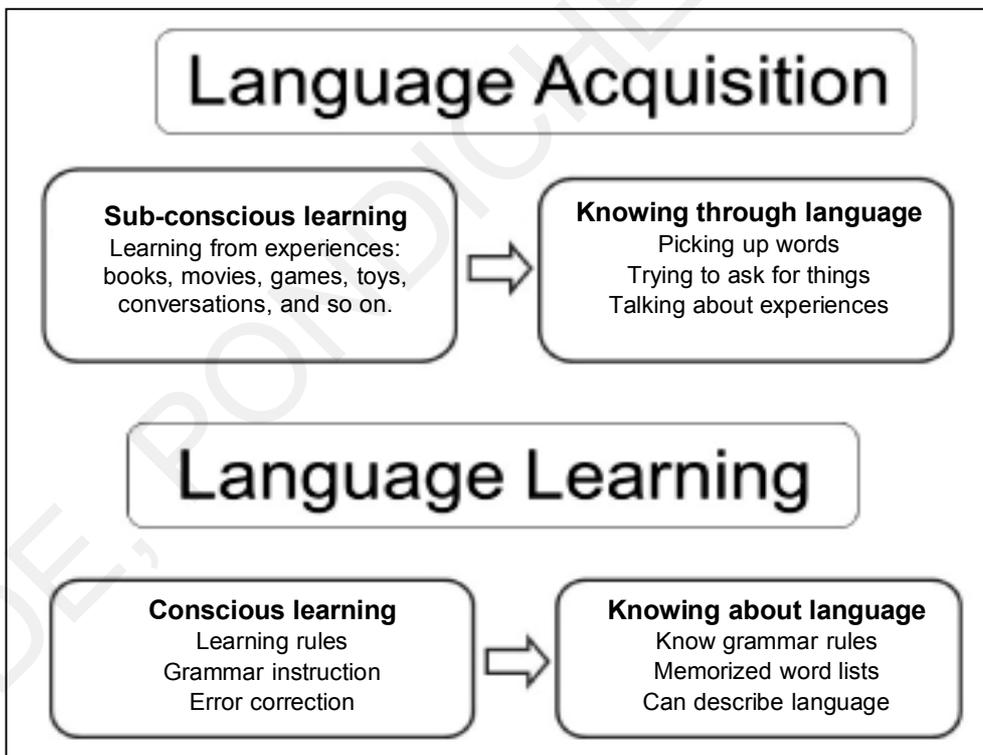


Fig. 2.2: Role of grammar in language learning

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**Check Your Progress**

1. How is working hard on grammar a prerequisite for language learning?
2. Mention some famous podcasts and audiobooks which will help in developing your language skills and discuss in the class.

**2.3 ENGLISH COMMUNICATION**

English communication is nothing but the knowledge and ability to speak smoothly in the English language. Communication in English is the need of the hour. English is the most widely demanded language all across the globe. The English speaking native is the recipient of various opportunities and growth. The people with a sound knowledge in English are able to understand, express and communicate better. Due to globalisation, English speaking acts as a common language among people from different countries. Knowledge of English helps to get work done and also make conversations easier and more accessible. Today, a large number of people may not know proper English but they do know a bit of English which allows them to have successful conversations. English natives are easier to find, translate and crack good deals. Many films, television shows, novels, and music are now written and produced in English. You will no longer need to rely on translations or subtitles if you know English. You will continue to develop your English listening and reading skills by using these mediums. There are around 565 million people who use the internet everyday and most of the websites are in English. Thus, online or offline, knowing English gives an edge over the others and allows exchange of information in an elaborate manner. Let us understand the birth, scope and growth of this language in a little more detail.

The birth of the English language is after a German person, Angels who was a migratory person and moved to England which was then known as “Great Britain”. Surprisingly, in today’s century, English is an official language for 67 countries and it has as high as 35 dialects. The native speakers of the English language is more than 2 billion people across the world. Can you guess how many people already know English? In maximum schools for maximum countries, the primary language for children is English. The reasons for it being primary is that in many countries, states and districts, English adds as a common medium for language. The schools, colleges and universities are also working on the basic language being English. Many offices prefer working in English as it will be clearly understood by everyone. Often, it happens, people are prone to transfers, which makes them very foreign to the local language of that country. Hence, English is a welcoming language in such cases.

Individuals must make special efforts in gaining proficiency in this language. Learning this is not very easy, as the vocabulary is very rich and there are constantly words being added in this language. Sheer practice, observation and deep study is the only way to improvise in this language.

These days, the English language is also very commonly used in social media and that is also a great platform to learn and improvise with basic English language.

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When you notice social media platforms, the words or basic commands which are used in the interface can also be observed and learned from. Thorough practice is the prerequisite for mastering the language. Since the English language is always coming up with changes and evolution, it is important to stay in touch with it.

If you question any native individual, which is the most important and common language in the world, they would think and definitely say English. This is the high impact English has made on people. The last count of English speakers was done, it said around 400 million people speak this language very fluently and around 100 million people speak it in average condition. There are many types of people who can understand the language but cannot really express it in the said language. English has also been termed as “Career Language” as many companies make it a requirement during interviews. The use and importance of this common language marks the beginning of most careers of individuals. Maximum transactions or communications with overseas clients or individuals is often in English. Lack of knowledge in this language can make you miss opportunities, collisions and amalgamations. The seizing of opportunities and chances of expansion reduces if there is a language barrier.

Even when we speak about research and development, most of the time, information presented is in the English language. There are some texts, which do not even have translations. Since English is a universal language, it is imperative for people to at least understand the language. The ability to read and understand the language also makes language learning very easy. Many good books which should be read by people worldwide are also written in English. The authors of English books usually choose a neutral level of language so that it is read, preferred and understood by all kinds of readers. Even the newsreaders, newspapers and magazines most of the time, appear in English language and the purpose behind that is accessibility for each and every individual. The development of this language has been encouraged only to bring people of all nationalities under one roof. This language is also used in various recreational activities like movies, books, sports commentary and so on. It is pre-assumed that people will have a sound or minimum knowledge of the English language. Hence, such activities and its communication takes place in English. Even when we speak of the powerhouse of entertainment, Hollywood ranks number one, and all movies in Hollywood are made in English. We can definitely say that today, English is a language which is no more alien, but a language which is deeply rooted. English is also known as a language which is a “Career Launcher”.

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**6 Tips to improve your English**

1. Find out your learning style
2. Speak a little English every day
3. Attend an English class or discussion group
4. Expand your vocabulary
5. Work on your pronunciation
6. Don't be afraid of making mistakes

Helena Daily English

Fig. 2.3: How to improve English?

**Check Your Progress**

3. Write a speech in English about the growth of globalisation and discuss it with your classmates. Use the above points to frame the speech.
4. Make a poster with tips to improve English speaking skills.

**2.3.1 Importance of English Communication**

English is the language of international communication which means it is important to master this language in order to be at par with global competencies. The English language is the gateway to various career opportunities as it is a globally recognized language. Communicating in fine English can help get positions in various fields. Knowledge of regional language is also a very important thing but not very impactful since regional languages change with geographical locations. Therefore, English serves as a base for successful communication. As per the British theories, English is by far the most preferred language across the globe as it is the language for science, development and aviation. A native speaker often wonders, how and when did English become so important? Well, it all started with the British Empire who ruled over 25% of the world. The British empire often compelled people to speak in the English language, especially because they had conquered that specific region. For the ease of understanding, the British empire made the native speakers speak in a language which was easy for them, the rulers. This became so engraved in the people that they continued to speak English even after the British empire left the throne. They had no choice but to continue as most of the business dealings which started during the British times took place only in English language. This was also primarily a reason why English was a widespread language. During those times, the newspapers, the documents and even the manuscripts were written either in their local language or in English. There is evidence which proves a lot of content was written in English, as it had become a powerful colonial language. The people then, had no choice but to at least understand the language as the leaders and empires then were Britishers. The people always understood the messages and later began to speak in the language which turned them into native speakers of the language. They did not have precise

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knowledge of the language like grammar, etc., but they very well knew about the words, sentences and their meanings, which enabled them to communicate smoothly for trade and other business purposes. This was only the beginning of the birth of language. The language English got a mix of few French words as well after the Norman invasion of England in 1066. William the Conqueror brought a transition in the English language by adding a tinch of Norman French. This mixed language was widely used in courtrooms, meetings and even with kings. The oldest version of English got a new transition and it changed to Middle English. After around 70 to 80 years of this mixed English, the grammar became much simpler as compared to the old English.

The birth of the English language in India took place in the 1600s under the influence of the British and the East India Company. This primarily happened because of the charter created by Queen Elizabeth I. The major trading ports and coastal areas for business and communications like Surat, Bombay and Calcutta were majorly under the control of the British. During the 1830s, the basic instructions to people began circulating in English Language and this led to shift of Persian Language into English. The person who played a primary role in developing and establishing English language in India was Lord Macaulay who brought into focus the language and a lot of western culture in the living, education, customs and thought processes of people. He transformed the way Indians were living, thinking and believing. He replaced the language of learning in schools and colleges into English, making people globally ready. He trained teachers to speak in English and even converted all administrative offices in India to become English speaking. There were various primary and secondary schools established in the regions British had conquered during the years 1840 to 1860 where English was the primary mode of education and conversations. Major schools and colleges were established in the trading centres of the country, viz., Bombay, Madras and Calcutta. The universities were also established where the entire functioning was the replication of the University of London. This was done in order to create a different impact of these systems on Indian education. The medium of instruction in these universities were completely in English, making native Indians proficient in the English language.

In the years 1858 to 1947, the compulsion of the English language started increasing to a very large extent and people were not comfortable with this kind of intrusion laid upon by the foreigners. However, English still continued to stay in the civil services, offices of development, foreign trade chambers, etc. There was a long lasting debate after the Indian Independence in 1947, if the continuation of the English language should be done. Majority of the north Indian states wanted to make Hindi as their national and official language. However, the south Indian states who were not Hindi speaking protested this decision. This is how the language “English” stayed in the country, even after the British left its control. English is looked upon as a common language for both the North Indians and the South Indians. The Government of India then passed a bill stating that English should be an associate language and can be used in day-to-day dealings and government

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dealings. This is how, the demand for English kept on increasing, and English still remains the official language of the country.

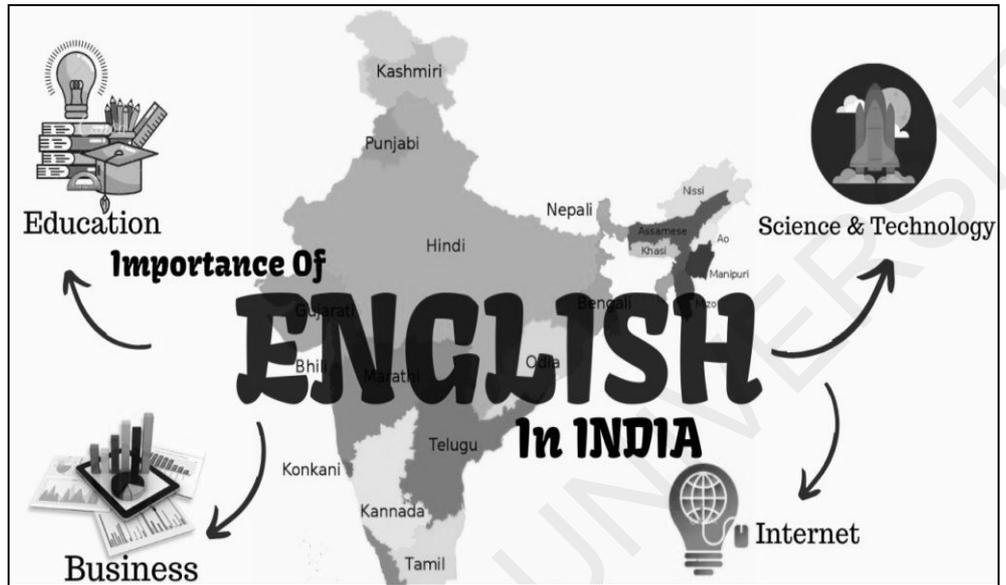


Fig. 2.4: Importance of English language

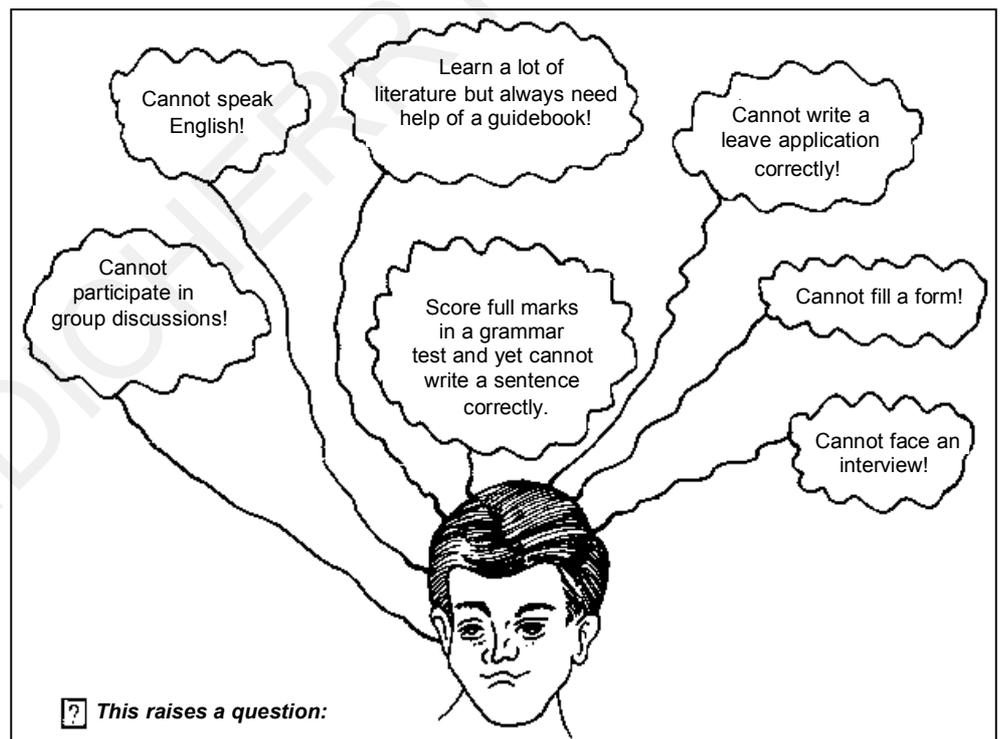


Fig. 2.5: Problems faced by native speaker

Check Your Progress

- 5. Search more about the history of the English language.
- 6. Find the countries where the British empire had extended.

### 2.3.2 How to Develop a Command over the English Language?

There are some effective habits which one should follow. Whenever choosing a language to master, especially when it comes to English, it should be done very carefully, analytically and with focus. Command over English happens only when it is practiced enough with sheer observation and inquisitiveness to learn. Some ways to improve in English are as follows:

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##### 1. Start reading an English newspaper

Reading an English newspaper is always a smarter way of learning the language as it exposes the learner to a large array of words. This also makes them very receptive to learn new words and new sentence structure. Having a close contact with the newspapers on a daily basis not just provides you with global information but also brings about positive changes in the speaking, reading and writing skills. The newspaper is an open house for learning impactful words, phrases and even sentence framing. The continuous reading makes the reader fluent in expressing in different ways and in a grandeur manner. Reading the newspaper everyday brings about small but sure improvements, making it a very positive and a growth enriching habit. The readers, in order to develop this as a habit, should start reading the most amusing sections of the newspaper. There are numerous sections in the newspaper, catering to a different need for each kind of audience. Try to read the articles very loudly, as it will build confidence of using the new words in day-to-day life as well. Reading the newspaper everyday with a lot of discipline is a habit, and within a few months, a significant difference will be seen in choice of words in daily communication. Keep a habit of reading different newspapers. This will help to understand different writing and editing techniques which will help you to embrace your own differences while perceiving or using the words in your day-to-day dealings. Reading differently written texts also helps in building vocabulary, making the reader highly proficient in the language and vocabulary skills. Always remember, simply, reading the newspaper is not enough. An effort must be made to discuss the information obtained in the language it has been read. This will instill language improvement along with confidence. Whenever you come across new words while reading the newspaper, make a note of it and look up those words and their synonyms in the dictionary. Also, try to understand which word has been written under which context so that the understanding of the word and its use is clear.

##### 2. Start conversing in English

Even if the language is not fine-tuned, it is important for the learner to make sure to converse in the said language as continuous trials will bring positive results. Making attempts to speak in English will bring about improvement in general communication slowly and gradually. One should practice without hesitating about the mistakes. Many people do not have enough confidence on how to initiate the conversation in

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English. This is bound to happen as the individual does not hold confidence in the language and therefore will find it difficult to initiate any conversation in the said language. For a simple start, the communications can start with greetings which could be formal or informal. Some forms of greetings in English could be very pleasant and stated on a positive note.

Simple, pleasing and yet formal ways to greet someone includes:

1. Hello.
2. It is a pleasure to meet you.
3. Good morning/Good afternoon/Good evening
4. Hi.
5. Hey.
6. How are you doing?
7. I hope the day is treating you well.
8. I hope you had a fine morning.
9. I hope you are having a good day.
10. I hope I am not intruding.

After the greetings, to sound more polished, you can ask questions which can spike conversations. Asking simple questions can also become the conversation starter. Asking questions indicates that you wish to know more about the individual. Some simple questions can include:

1. How is your day going?
2. How have you been?
3. Are you having a caught up day?
4. How is life going on?
5. What is your name?
6. Where do you reside?
7. Where do you belong?
8. What is your occupation?

After you know a person well, there are a few more salutations which can go very well with the individual. The conversation could be more interesting if you know the person well. The idea is to start a conversation only if the person is willing to learn from it. However, in an ideal situation, such starters usually lead to a full length conversation. Few more tips for initiating the conversation to a little well-known individual are as follows:

1. It was wonderful meeting you.
2. Pleased to meet you.
3. What is your occupation?

4. How long have you been in this sector?
5. How is your family doing?
6. It has been a very long time since I have met you! How have you been?

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### 3. Start reading historic letters written in English

Reading letters written by great leaders and people from the past will introduce you to a language which will be slang-free and will have an aesthetic value. The language used in the olden era is far more decent, rich in vocabulary and very impressive. Thus, reading old letters can be a very good way to learn and develop English speaking skills. Going classic is a great way to improve the English language. If you read an old historic letter, always remember that there will be few words which we will not use in today's time and era. Those words can be skipped but reading letters which relate a bit in today's time can make a huge difference in overall perception. Reading letters from 1800s and forward can bring about marvellous improvement in reading, writing and speaking. Remember while reading, the grammar, vocabulary and spellings are the most important factors. The purpose behind reading classics is to get the basics right! Having just spoken knowledge of the language is not enough, it is all about the rules of grammar, spelling, punctuations and pronunciations.

### 4. Make a habit of reading loudly

Often, listening to yourself gives a judgement if we are saying something correctly or not. This helps in building confidence, voice tone, voice modulation and even makes the pronunciation much better. Reading or speaking loudly in English has multiple benefits and also makes the learning process more productive and quick. Remember, reading in isolation can never bring about progress and improvements. It always brings more clarity in the voice and the reason is when you read loudly, there is a play of various sounds which is made by the lips, throat, tongue and makes you remember the words which are spoken loudly. The regular practice of reading loudly helps in overall development of the vocabulary, however small the change may be. There are no shortcuts in bringing about improvement in vocabulary, that can only be achieved through daily practice. The habit of reading everyday can build in a lot of development in the language caricature. The best part about reading loudly is a visible improvement in the pronunciation and it is also known as the main exercise in improving language skills. Revising the content by reading brings about a lot of improvement in speaking skills and also helps to retain the words in the memory which facilitates using these words, even in the future references in any other conversation. Reading out loudly also is a practice ground for preparing for different rules of speech. The few elements to keep in mind are the pauses (to stop for few seconds in full stops and commas), intonations (to know when to increase

**NOTES**

and decrease the tone of voice), emphasis (to know when to stress on which word), pace (to know when to go fast or when to go slow). With thorough reading practice, this change can be witnessed as the confidence will boost and hesitation will reduce. This is a great practice for beginners. English needs to be spoken with a lot of expressions, as not adding any expressions will make the language sound like a fizzled soda or a robotic tone. The words have to be clear and expressive, and this can be done only when speaking loudly is practiced everyday and with a lot of discipline.

**5. Maintain a small journal of new words, phrases and sentences**

For people who want to learn the language really well and also want to develop their speaking skills, it is important to make sure that you mark, identify and write down new words, phrases and sentences in the notebook. In this way, the ability to use good words in regular conversations increases, and with this, increases confidence and interest to learn more. Having a small journal helps in making sure the words and their meanings are there for reference purposes. New words can be added and the vocabulary will slowly but surely improve over a period of time. After adding new words, you can always try to make new sentences from them. Try to structure a sentence which allows you to use these new words and extract the right meanings from the sentences. This habit will help you to keep upbeat about the new words, phrases and sentences allowing you to raise your vocabulary to another level and thereby making lasting impressions. You can also play word puzzles and any new words found there can be added in your journal. Finding sources to learn new words is a very nice technique to develop the vocabulary and to improvise the command over the language. The language can only be developed if the right kind of efforts are taken for the same. The habit of maintaining a journal will be handy and will help to keep a tab on new words and application of these new words in various situations. The journal can be kept with the individual even when he is travelling so that he can look for new words and use them in his dealings. This can be a very helpful tool for those who genuinely want to improve their writing, speaking and vocabulary skills. A small habit developed at an early stage, can go on reaping benefits in the long run. Practicing new words in different ways can also benefit the learner in using the mind and the language in a manner which will promote brainstorming.

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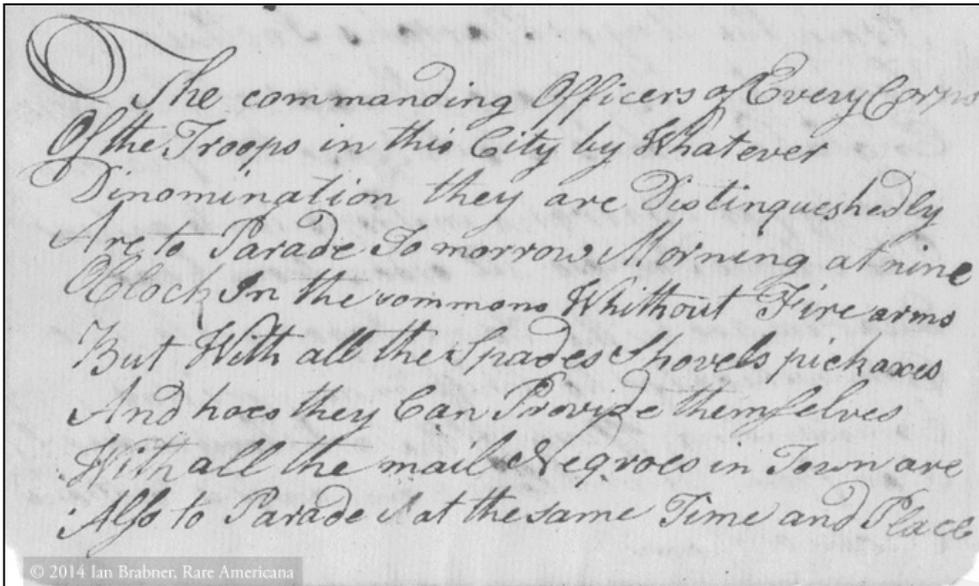


Fig. 2.6: A historic letter

**TOP 5 TIPS FOR WRITING A GOOD ESSAY**

1. TAKE ONLINE ESSAY WRITING ASSISTANCE
2. READ BOOKS REGULARLY TO DETERMINE NEW TOPICS
3. TAKE IDEA FROM OTHER PEOPLE'S ESSAY
4. WORK ON YOUR VOCABULARY SKILLS
5. EMPHASIZE ON INTRODUCTION

**Top 5 Reading Tips**

1. Read things over again to get the meaning. It's normal to need to do that.
2. Follow the sheet about what to do before, during, and after reading. It's super helpful!
3. Talk with others in your class about the reading--discuss it. Also ask them what things they do when they read.
4. Define any words you don't know and then read the paragraph again.
5. Don't get discouraged. If things don't improve, work with a tutor.

---

**FIVE TIPS TO SPEAK ENGLISH BETTER**

- Learn phrases/sentences, not individual words
- Do not study grammar rules
- Learn with ears, not with eyes

**Good Listening Skills!**

- Look at the speaker
- Have a nice quiet mouth
- Listen to what he or she is saying
- Repeat it back

Fig. 2.7: Tips on overall language improvement

## 2.4 USING ONLINE DICTIONARIES AND TOOLS FOR CHECKING USAGE OF SPELLINGS AND GRAMMAR SUCH AS GRAMMARLY

These days, learning and implementing grammar can help simply with the click of a button. There are various grammar learning applications and links available which help you to correct the grammar mistakes and even support sentence structure. The online dictionaries are very helpful as they highlight the errors and even give suggestions which can be used while framing letters, emails, articles, etc. This application advises you on how you can improve your grammar as well.

## NOTES

One of the most common grammar correcting applications are:

1. Grammarly
2. Grammar Checker
3. Instoried

The best grammar checker online is “Grammarly”.

### 2.4.1 What is Grammarly? How Does it Help?

Grammarly is an English language grammar tool which works with the help of artificial intelligence. It analyzes the sentences for grammar, structure, spelling and punctuation. It can be simply downloaded, and whenever there is an activity done on Google Docs or Microsoft Word, it enables itself. The document is scrutinized by Grammarly and then editing is done by the concerned person working on the document. This application is supported by some very easy to understand and quick notifications which enable smooth processing of the writer, giving him the opportunity to learn as well. Grammarly is supported with a very strong AI which constantly works on improving the quality of the language used for the sentence. Since it runs on Cloud, it can be used on any device very smoothly. It even has a tone enhancement feature which helps in understanding the tone of the sentence and improvises it. Grammarly also highlights which sentence should be written in an active or passive voice. It pops up a green notification which gives the correct suggestion to be implemented. All one needs to do is download Grammarly, sign up and get started. Grammarly sets up itself in every place where typing is required. Few features of Grammarly applications are as follows:

#### 1. Brings about clarity

With the use of Grammarly, one will notice that there are various suggestions which are given by Grammarly while writing the content. Grammarly is very quick in identifying the errors which one makes while writing and that supports on-the-spot correction. Grammarly usually creates a focus for the writer to write content in an active voice and constantly suggests changes which are well refined and approved by the global dictionaries.

#### 2. House of new words

Grammarly is a house of new words as they always present to you a better option for the word which is being used by you. The words suggested on Grammarly usually correlate well with the sentence which has been framed by the writer. Grammarly is equipped with new words and synonyms which makes writing fun and very impressive. Grammarly constantly gets updated with new words which makes it the most trendy and efficient application or CMS to be used by users. This feature does not only gives new words but also provides meanings for the words which allows the writer to decide if he wants to use it or not.

## NOTES

### 3. Provides assessments based on each week

Grammarly diligently sends out emails which are sent each week keeping the users updated on the timeline and graph of the customer's tasks and goals. The weekly information also shows your scope of improvement in terms of productivity, writing skills and the levels of language vocabulary. This study allows you to understand how much you have improved as the change is indicated in percentage.

### 4. Confidence

Grammarly is a great application for people who are not really confident about their writing skills to be confident as it does timely checks and makes sure the work is done correctly. It reduces the scope of errors and makes sure that the language used is of supreme quality.

### 5. Spelling, grammar and punctuation

Grammarly is an artificial intelligence equipped application that holds expertise in detecting spelling, grammar and punctuation errors in a syntax. The application has a feature which underlines the wrong word, grammar, spelling or punctuation in the green line and suggests on top which word it should be. This feature is fantastic as the work becomes completely correct and the chances of re-editing is very rare. This feature proofreads the work as soon as the work is written which is also very useful in saving time and grace.

### 6. Expertise in definitions and synonyms

Grammarly is prepared to perform. The application provides useful insights for writers as it very quickly makes suggestions on the various words or sentences which need paraphrasing. This ability to detect the changes required and also explaining why the certain change is recommended is one of the unique features of Grammarly.

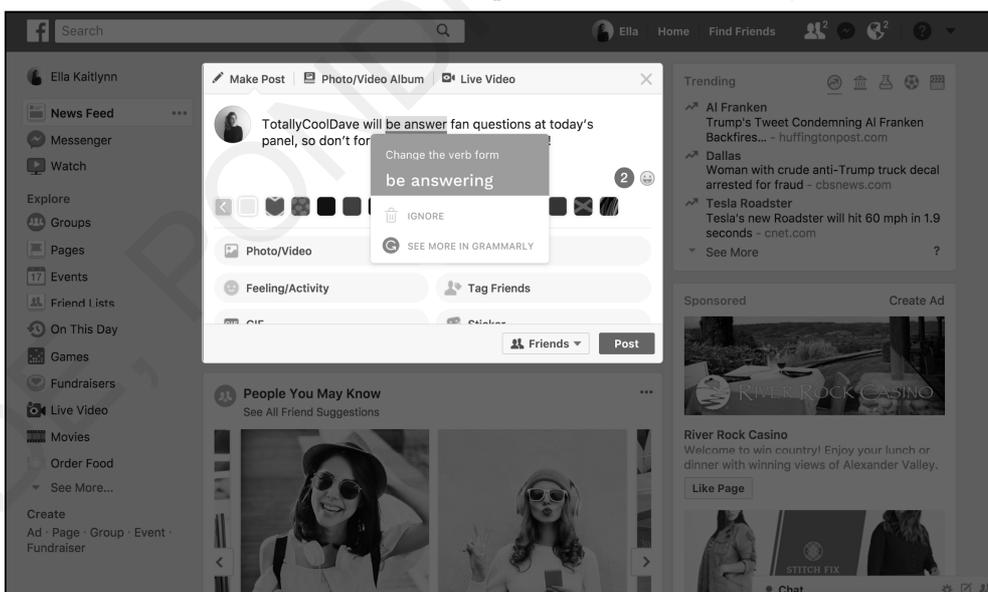


Fig. 2.8: Grammarly on social media

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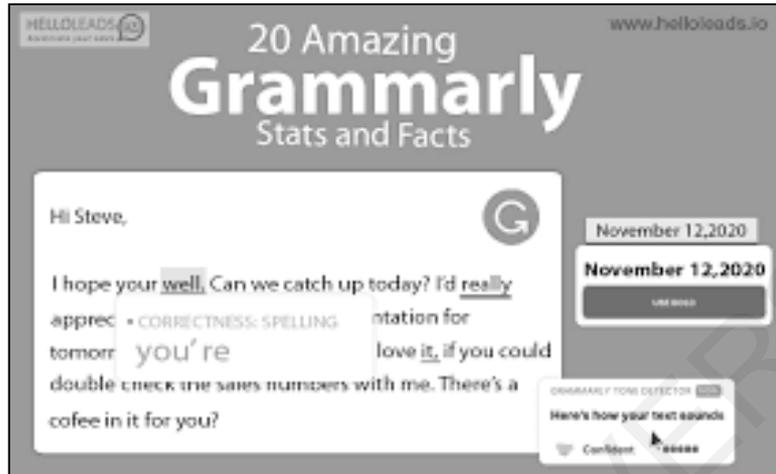


Fig. 2.9: Grammarly on email



Fig. 2.10: The Artificial Intelligence of Grammarly and the features it holds

**Check Your Progress**

7. \_\_\_\_\_ is a global language. (English, French, German, Hindi)
8. Working hard on grammar is the \_\_\_\_\_ step for improving your language skills. (first, second, third, last)
9. \_\_\_\_\_ is an application for correcting grammar, syntax and spelling errors. (Grammarly, over Grammarly, not so Grammarly, grammar.com)
10. Grammarly functions on \_\_\_\_\_. (Artificial Intelligence, Fictional Intelligence, Grammar Intelligence, Scientific Intelligence)

**2.5 ANSWERS TO ‘CHECK YOUR PROGRESS’**

1. Grammar is the most important part of the language. It has an ability to add or refute meaning from the sentence. It is a rule for any language to work very hard and prepare for the grammar before you start the verbal communication.
2. The few famous audiobooks and podcasts are as follows:
  - Mystery of Exploding Teeth
  - Unmumsy Mum

**NOTES**

- Everything I Know about Love
  - Diary of a Drag Queen
  - They Walk among Us
  - Sapiens
  - 18th Abduction
3. One of the best investments by which we can potentially improve today's security environment is to support globalisation. Globalisation is the process of nations coming together through the dissemination of ideas and the sharing of technological developments, as well as the movement of labour and wealth across national borders. It is a process that has been going on for almost as long as history can be traced, and it has brought enormous benefits. Change is a part of globalisation. As a result, it is frequently dreaded, even by those who benefit from it. When things change, some people lose in the near term. Globalisation, on the other hand, is as natural as breathing. It is not a procedure that can or should be slowed down. Of course, if there are clear techniques to breathe more easily and effectively, one should take use of them. (Students can add their own innovative points.)
4. Reasons for Learning English:
- It is part of the curriculum
  - To chat with friends
  - To find a job abroad
  - To get a well-paid job
  - To read English books
  - To study in an English speaking country
  - To surf the Net
  - To travel to other countries
  - To understand my favourite songs
  - To understand the computer software
5. It all started with the British Empire who ruled over 25% of the world. The British empire often compelled people to speak in the English language, especially because they had conquered that specific region. For the ease of understanding, the British empire made the native speakers speak in a language which was easy for them, the rulers. This became so engraved in the people that they continued to speak English even after the British empire left the throne. They had no choice but to continue as most of the business dealings which started during the British times took place only in English language. This was also primarily a reason why English was a widespread language.

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6. The countries where British empire extended were:
  - Anguilla
  - Bermuda
  - British Antarctic
  - British Indian Ocean
  - British Virgin
  - Cayman Islands
  - Falkland Islands
7. English
8. First
9. Grammarly
10. Artificial Intelligence

## 2.6 SUMMARY

- Language is central to learning, There can be no communication if there is no language.
- Language skills can only be developed through constant practice, inquisitiveness to learn and self-efforts.
- The English language is a globally accepted and recognized language. This language is an absolute necessity for learning. The practice of this language must begin early on.
- English is widespread because the British empire had conquered over 25% of the world during its time, which supported trade and business to be done only in English. Hence, people have a widespread knowledge of the spoken English language.

## 2.7 KEY TERMS

- **Language:** A common medium of communication.
- **Skills:** An ability to do a task.
- **English:** A language spoken and written, holds grammar and rules of language.
- **British Empire:** An English region which held power over many parts of the world.
- **Grammarly:** An application which helps to correct grammar on Microsoft Word or Google Word documents.
- **Documents:** An application which allows you to write, record and save information typed on it.
- **Essay:** A detailed information about a certain topic.

- **Communication:** An exchange of information with more or two people.
- **Grammar:** Rules of a language.
- **Reading:** Ability to comprehend and understand a given text.
- **Writing:** Ability to join a string of words in a sentence.
- **Practice:** The ability to do something repetitively till it is learned.
- **Verbal Communication:** To speak to someone orally.
- **Knowledge:** Information in depth on a topic.
- **Improvement:** To do better at something than the previous time.

## NOTES

## 2.8 SELF-ASSESSMENT QUESTIONS AND EXERCISES

### Short Answer Questions

1. State and explain two ways to improve language skills.
2. Why is English an important language? Answer in detail.
3. Explain how English has become a widespread language.
4. Explain the unique features of Grammarly in detail.
5. Explain the history of English language and India.
6. Explain the importance of reading loudly for improving vocabulary.

### Long Answer Questions

1. Prepare a small journal and make a record of new words you learn or listen to everyday. After 15 days, prepare a short speech using those new words and collect feedback for the same.
2. Download Spotify and start a podcast each day about how your day went, use good words, new vocabulary and hear it after recording. You will be able to identify your mistakes and thereby improve your skill.

## 2.9 REFERENCES

1. <https://www.etsglobal.org/pl/en/blog/news/importance-of-learning-english#:~:text=1.,second%20language%20in%20the%20world>.
2. Wren & Martin, (2022), English Book of Grammar, Blackie Publication.

NOTES

## Unit III Working with Google Docs and Sheets

### Learning Objectives:

By the end of this unit, students will be able to understand:

- Google Docs
- Google Sheets
- Creating brochure using Google Docs
- Creating newsletter using Microsoft Word

### Structure:

- 3.1 Introduction
- 3.2 Using Google Docs and Sheets
  - 3.2.1 Google Docs
  - 3.2.2 Google Sheets
- 3.3 Creating a Brochure using Google Docs
  - 3.3.1 Using a Google Docs Template
  - 3.3.2 Using a Google Docs Table
- 3.4 Creating a Newsletter using Microsoft Word
- 3.5 Answers to 'Check Your Progress'
- 3.6 Summary
- 3.7 Key Terms
- 3.8 Self-Assessment Questions and Exercises
- 3.9 References

### 3.1 INTRODUCTION

We are living in the world of digitization. Rapid changes are happening to this digital era. Digital gadgets such as cellphones, laptops, and desktops are replacing traditional information sources such as newspapers, books, and radio broadcasts. Businesses are able to overcome new challenges and achieve success thanks to digital transformation. Every industry, including media and entertainment, benefits from digitalization. It is mainly due to the increasing use of internet and rapid upgradation to information technology.

In the media and entertainment sector, the following four areas have experienced digital revolution.

- Better User Experience
- Higher Sales
- Wide Audience
- Easy Distribution

To flow smoothly with this digital stream, we need to acquire the required skills. In this section, we will learn few digitization techniques like Google Docs, creating digital brochures and newsletters.

## 3.2 USING GOOGLE DOCS AND SHEETS

Maintaining proper records keeping is always required for organizational efficiency. Poor record keeping may cause inconvenience in progress. Today, technology has provided amazing services and secured means to store our records. There are a many cloud-based storage devices that technology has introduced like OneDrive, Dropbox, SharePoint, etc. Google Drive, on the other hand, is a great online programme for saving any type of document. It is the finest place to store and share data and documents because it is free, secure, and safe. Google Drive data and files can be accessed from any device, including a computer, smartphone, or tablet. So, the access to our data is available 24 × 7.



Currently, majority people are using Google Drive. Many businesses use it for their document management system.

Google Drive is a cloud-based programme that lets us create, edit, store, and share documents with others. It's used by a lot of companies as a file management system. Documents are kept in the cloud, and users' local versions of the system are synchronised. Users may access and collaborate on files using Google Drive from any location and on any device. It promotes flexibility and movement.

Google Docs, Spreadsheets, and Slides are part of Google Drive, a cloud-based alternative to Microsoft Office that allows collaborative editing of documents, spreadsheets, presentations, drawings, forms, and more.

## NOTES

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Google Drive apps and functions		
APP	DESCRIPTION	PRIMARY FUNCTIONS
 <b>Google Docs</b>	Text documents	Proposals, reports, shared meeting notes
 <b>Google Sheets</b>	Spreadsheets	Project plans, budget sheets
 <b>Google Slides</b>	Presentations	Pitch decks, training modules, team presentations
 <b>Google Forms</b>	Surveys	Customer satisfaction surveys, group polls
 <b>Google Drawings</b>	Shapes, charts, and diagrams	Flowcharts, mind maps, website wireframes
 <b>Google Sites</b>	Websites	Team sites, project sites, resume sites

Source: G Suite Learning Center BUSINESS INSIDER

The importance of Google Drive for an Organization Document Management System are as follows:

**1. Mobility**

Google Drive allows us to store any type of files or data using any device. We can still access them from anywhere on any another device.

**2. Flexibility**

The great advantage of Google Drive is that it offers flexibility. Any place you go, your documents is following you.

**3. Reduced burden on keeping a hard copy**

Using Google Drive, we do not need to suffer from keeping a hard copy.

**4. Quick access to the desired document**

Google Drive allows us accessing our documents faster by searching them. It is very easy to access our desired files in very short interval.

**5. Retrieving anytime and anywhere 24×7**

Each time when we require to retrieve our documents, we just need to log in to our account on any device at any time. Google Drive is an outstanding tool for cloud-based collaboration and file storage for the companies, businesses and organizations.

## 6. Sharing

Google Drive provides feature to share documents within your organization and/or to any other people. It also helps businesses to collaborate, share and store files very easily. It allows access to shared documents from multiple locations via desktop, laptops and mobile applications.

Let us discuss how Google Doc and Google Sheets can be used.

### 3.2.1 Google Docs

Google Docs is a Word processor tool provided by Google's Drive Service. It is a free and online option to Microsoft Word. Google Docs is browser-based Word processor. One can easily create, edit and share documents online, and it can be accessed through any device with an internet connection. Google Docs is available on all devices and platforms provided we have internet connection and a browser.

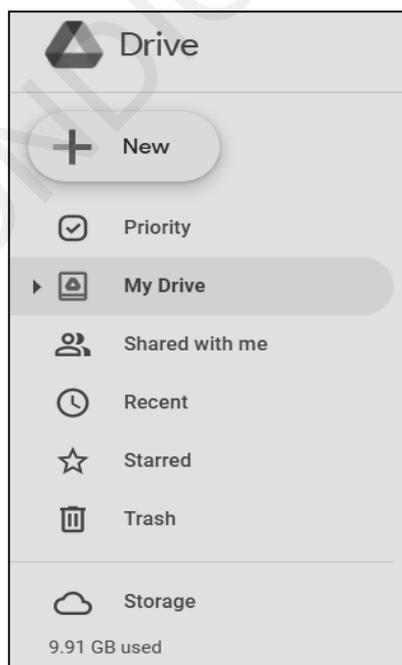
Google Docs supports various file types, which include .doc, .docx .txt, .pdf, etc. Since it is an online Word processor, sharing documents with multiple people becomes easy. It also provides features like tracking revisions, changes and suggestions, all in real time.

Let us understand how to use Google Docs.

#### A. Google Docs Creation

**1. To create a new document:** To access Google Docs, only perquisition is to have the Google account. Once we have Google account, use any option to create the Google Docs from the various options discussed below:

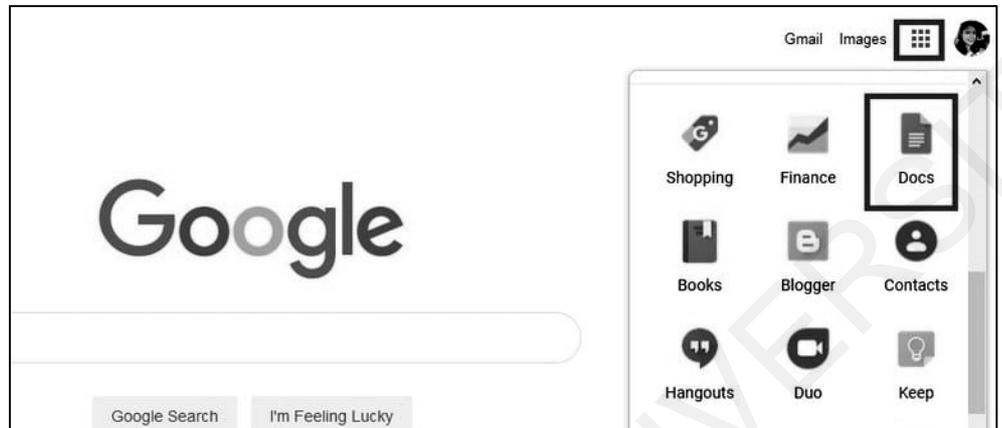
- Open the Docs home screen at docs.google.com.
- Open Google Drive and click on New.



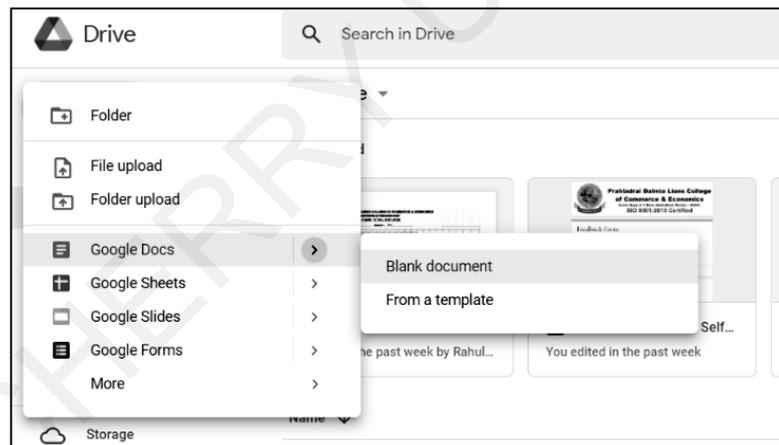
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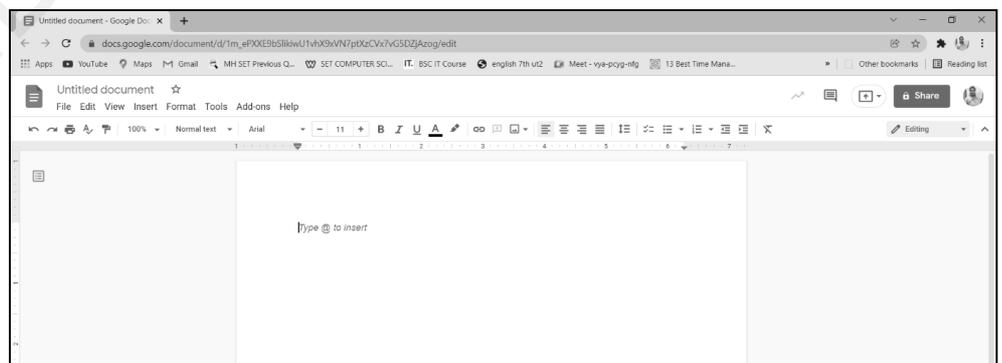
- Click on the upper-right corner of the Google home page and select Docs option.



- We can also create new documents from the URL docs.google.com/create. And select blank option or required template can be selected.

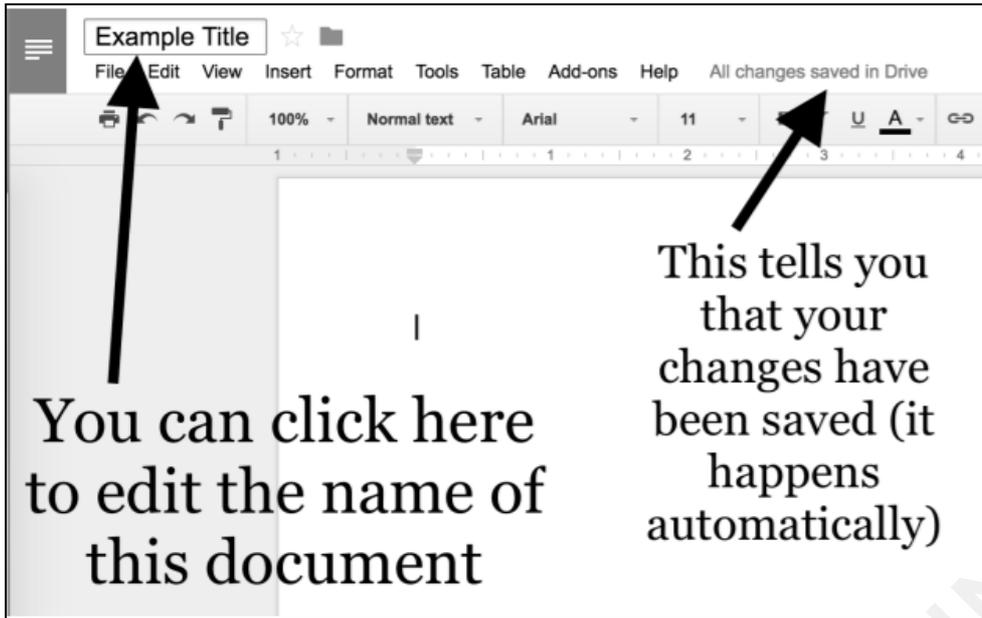


- Use any option to create the blank document. It will load the new window in browser with untitled blank document.



To alter the document's name, go to the upper-left corner of the screen and replace the 'Untitled document' name. To save, press 'Enter' or click anywhere in the document. If you check to the right of the 'Help' option, it will tell you that your document is always saving as long as you are connected to the internet.

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Below is the figure describing all components of Google Docs Window that can be used to edit Google Doc.

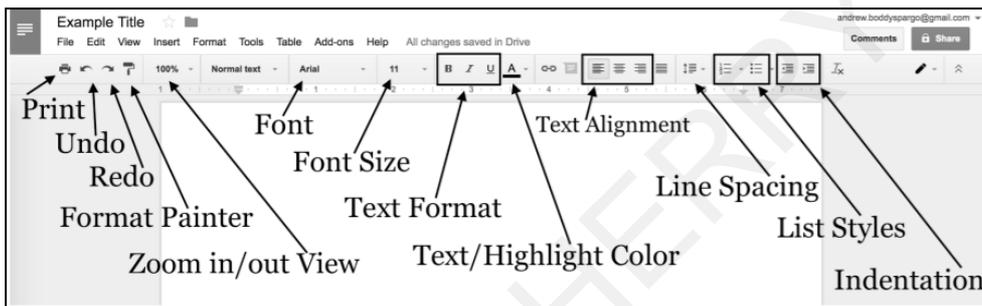


Fig. 3.1: Components of Google Docs Window

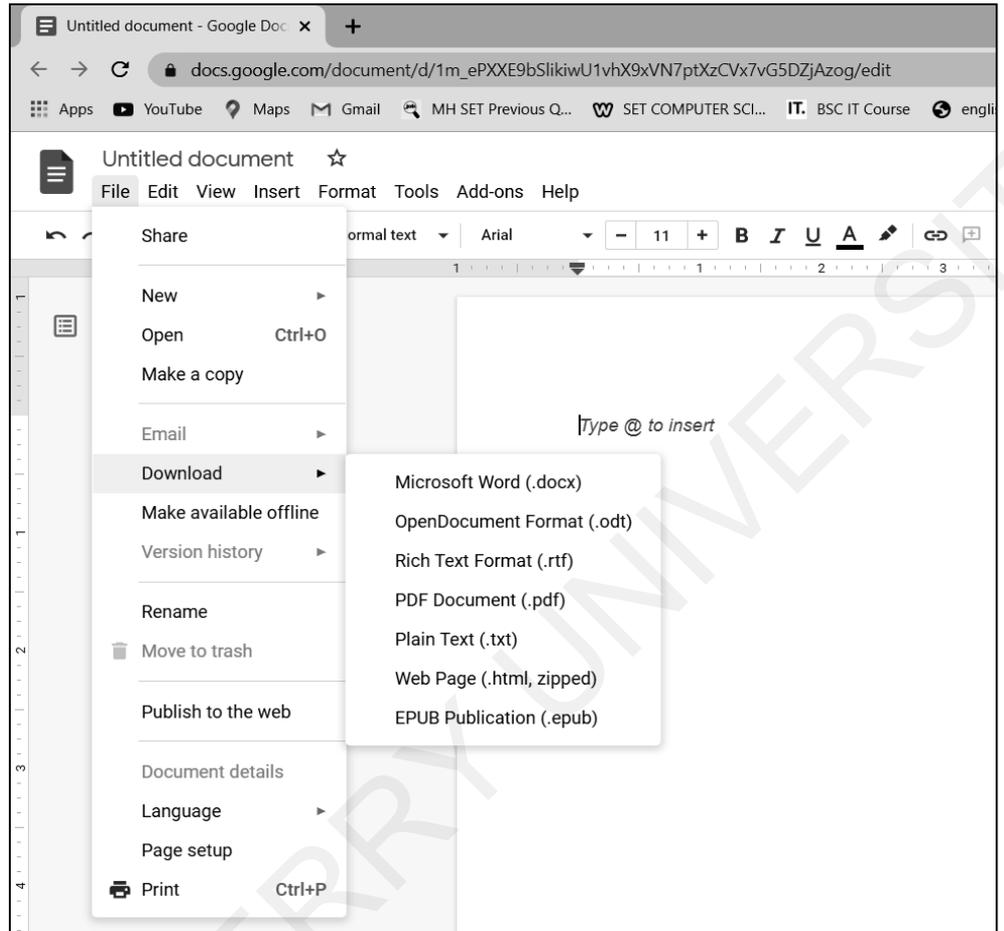
## 2. Saving Google Doc

As part of Google's online office suite, we do not need to remember to save a document since Google automatically saves it to our Google Drive. Hence, there is no Save button.

## 3. Download Google Doc

Google Drive is where the documents are stored. Go to File > Download and select the desired file format to download a Google Doc to your smartphone.

## NOTES



### 4. Email Google Doc

Documents can be emailed without having to be downloaded first.

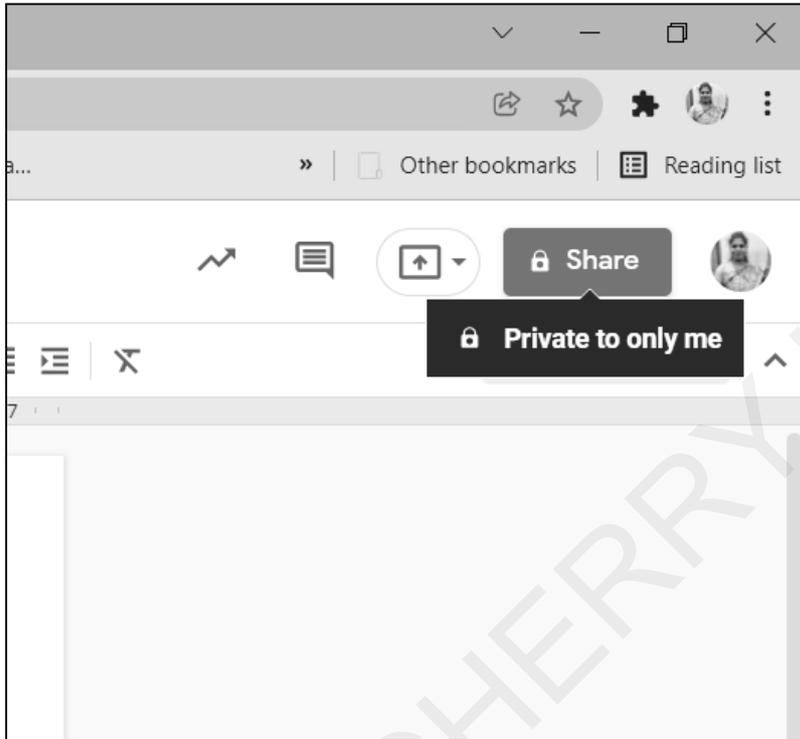
Choose the file format you want to attach and fill in the regular email data by going to File > Email > Email this file/Email colleagues.

A screenshot of the 'Email this file' dialog box. It has a title bar 'Email this file'. There is a checked checkbox for 'Send yourself a copy'. Below that are input fields for 'To', 'Subject' (with the text 'Google Doc FAQ'), and 'Message'. At the bottom, there is an unchecked checkbox for 'Don't attach. Include content in the email.' and a dropdown menu currently set to 'PDF'. 'Cancel' and 'Send' buttons are at the bottom right.

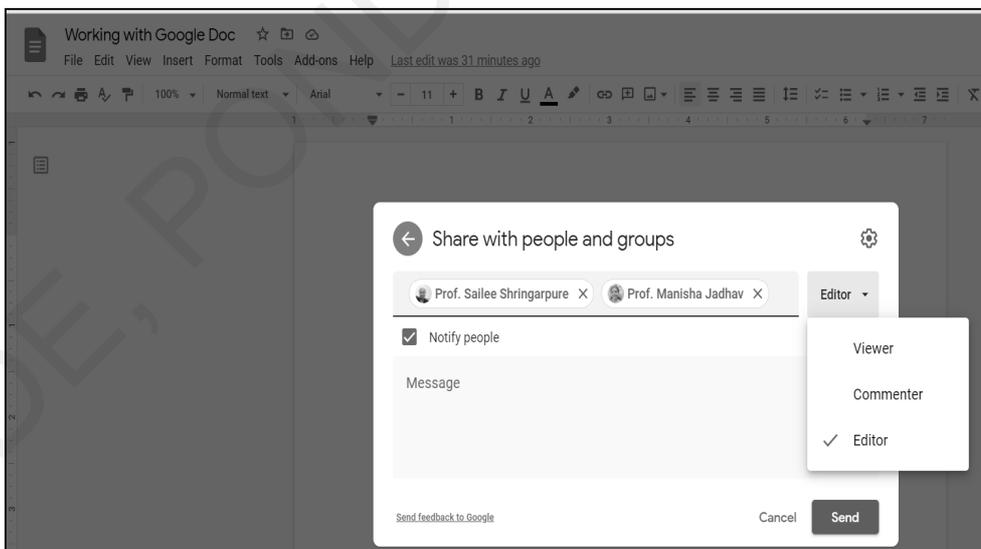
## 5. Share Google Doc

SHARE is often a better alternative than downloading or emailing a document because it lets anyone to see and work on the same version of the document. We'll be able to avoid making conflicting copies or replicating your work this way.

Click the Share button in the top right corner of a Google Doc to share it with others.



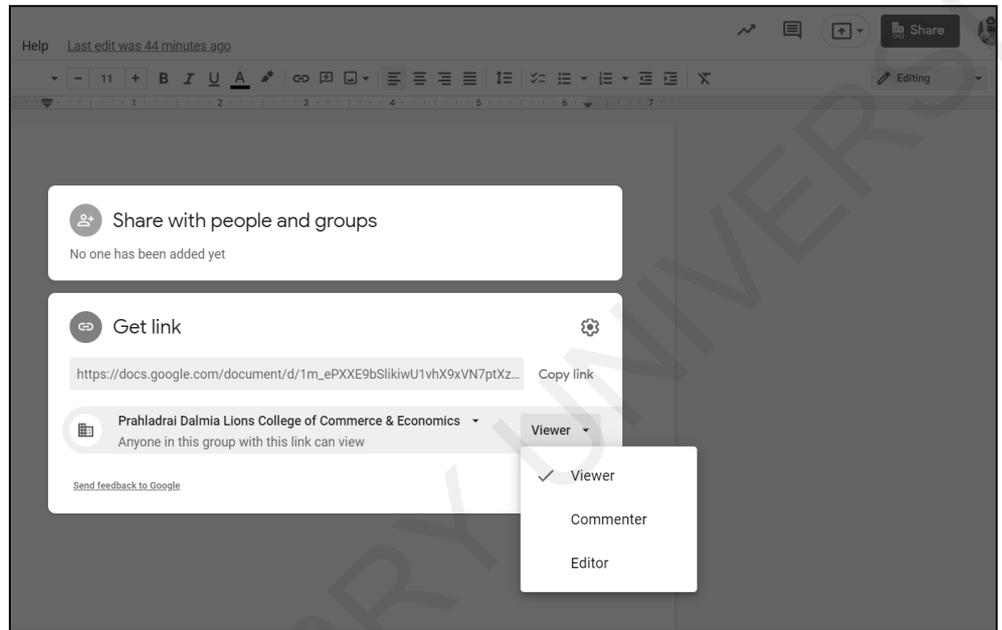
Put the names or email addresses of the people you want to contact. This method's default access level is Editor. As an Editor, Commenter, or Viewer, we can edit the settings.



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Using the Get link menu, documents can also be shared with groups via a link. Private Google Docs are shared by default with anyone.

Documents can be shared within an organisation if the Google account belongs to one. Use the Change or Share option to do so. Copies of the available links can be copied and shared.



## 6. Tracking Changes in Google Docs

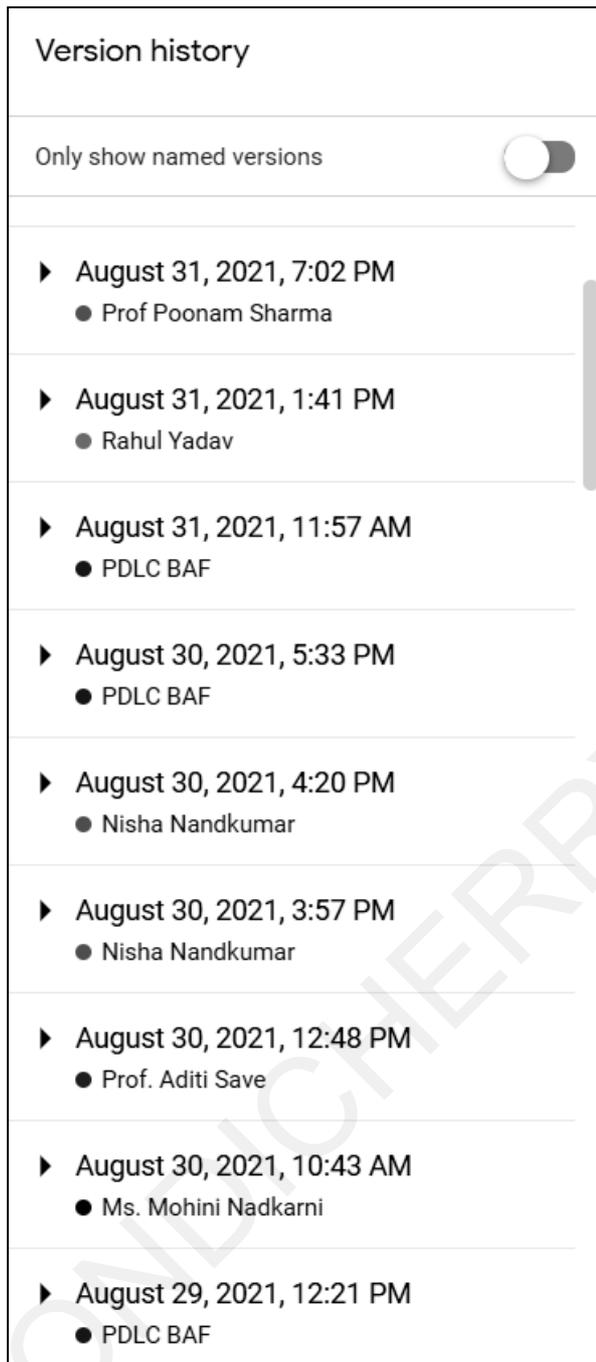
We may want to track changes in Google Docs if we make frequent modifications or if we share it with others.

### B. Version History

This is done automatically by Google Docs, which keeps track of your document's version history.

Go to File > History of Versions > Expand the version history option to see a list of all the modifications Google has recorded for your document..

## NOTES



When changes were made, who made them, and when they were made, they were all marked in the document.

### 3.2.2 Google Sheets

Google Sheets is a web-based spreadsheet application that is part of the Google Drive service. Google Sheets gives you the ability to edit, organise, and analyse large amounts of data. It also has a function that allows several people to modify files in real time. With the feature revision history, we can see what modifications were made to the spreadsheet.

## NOTES

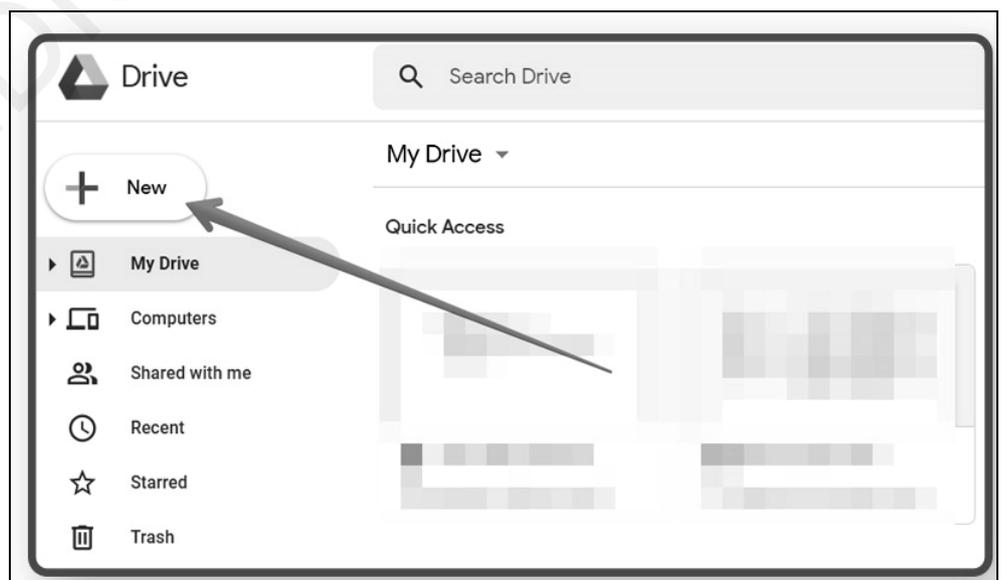
Following are few features for Google Sheets.

- 1. Editing:** Google Sheets provides for real-time collaborative spreadsheet editing. Instead of sending the same document to several individuals via email, a document can be accessed and changed simultaneously by multiple users. All changes made by other contributors are visible to users, and all changes are automatically stored to the Google server.
- 2. Explore:** This feature helps in analyzing information available in spreadsheet based on the type of data stored. This feature provides auto creation of charts, data visualization, pivot tables, and formatting spreadsheet with different colours.
- 3. Offline editing:** Users can edit spreadsheets offline on their device with OFFLINE EDIT feature. Through Chrome browser, install the “Google Docs Offline” which is chrome extension to enable this feature.
- 4. Supported file formats:** Google Sheets support various file formats. Data available in formats like .xlsx, .xls, .xlsm, .csv, etc. can be viewed and converted to Google Sheets.
- 5. Integration with other Google products:** Google Sheets is compatible with a variety of Google apps, including Google Forms, Google Finance, Google Translate, and more. For example, if you want to make a poll or questionnaire, you can use Google Forms to write the questions and then import the Google Forms into Google Sheets.

Let’s discuss how to work with Google Sheets.

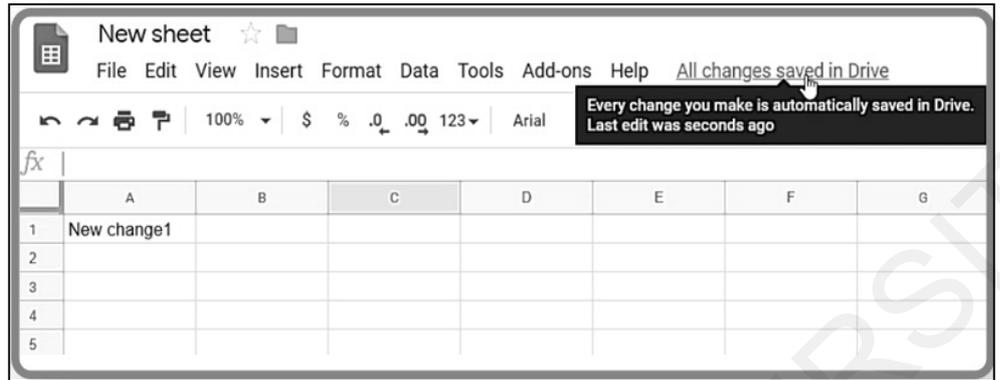
To create a new Google Excel Sheet, follow the same steps as discussed for Google Docs.

1. Navigate to the Google Drive, click the “New” button and select Google Sheets.



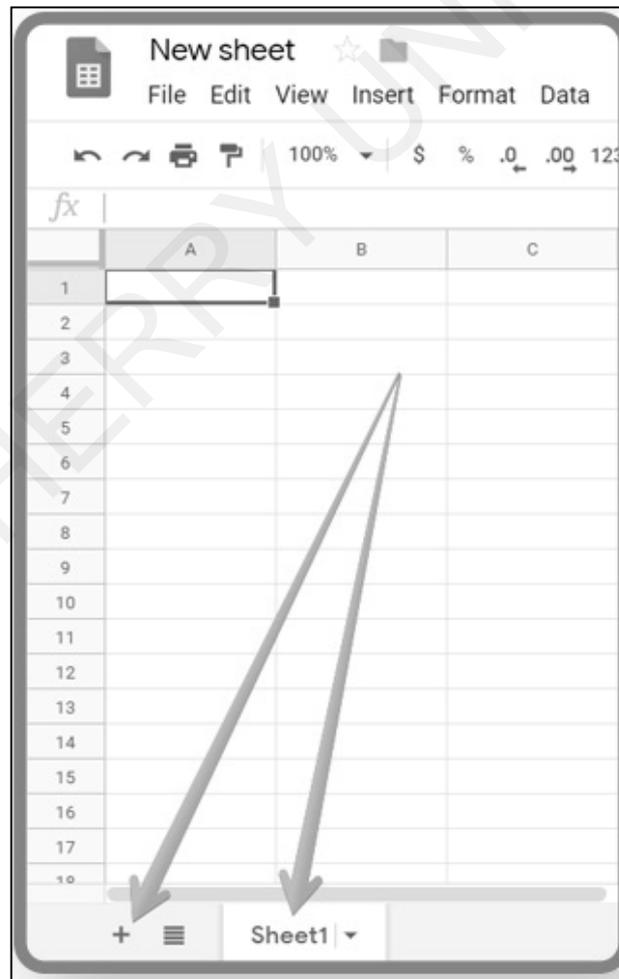


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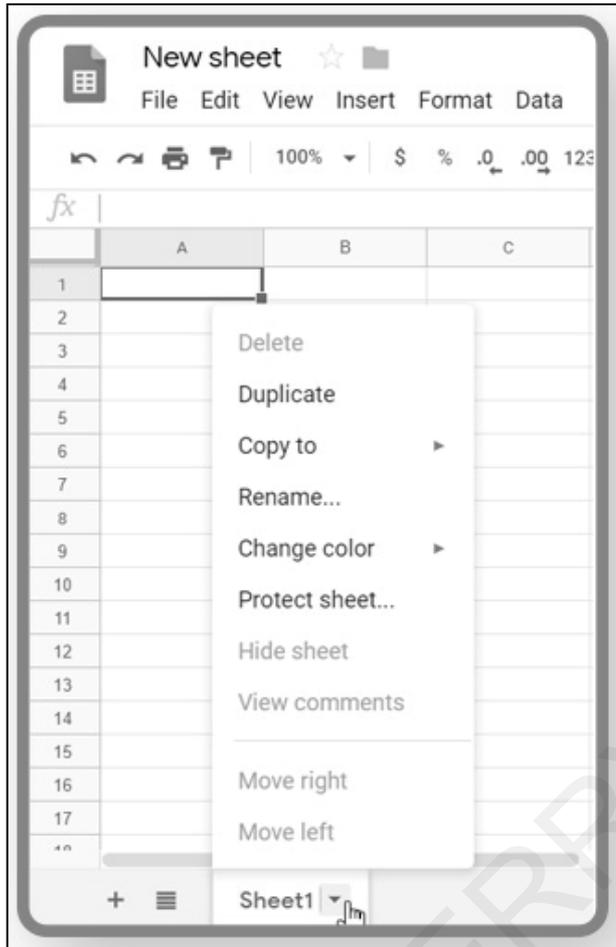


### Add, Rename, Delete and Other Manipulations with Sheets

1. Rename a sheet, double click on it, and type the name of sheet.
2. Click the + sign to add another sheet.

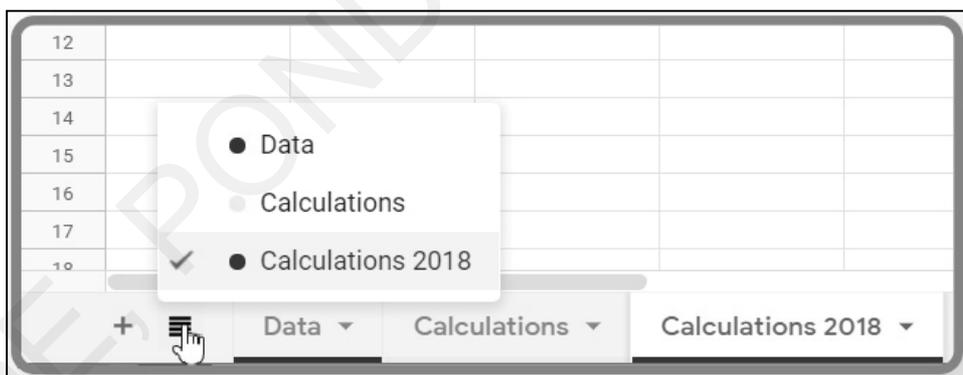


## NOTES



If you have numerous sheets with raw data and calculations, colour coding might be very useful.

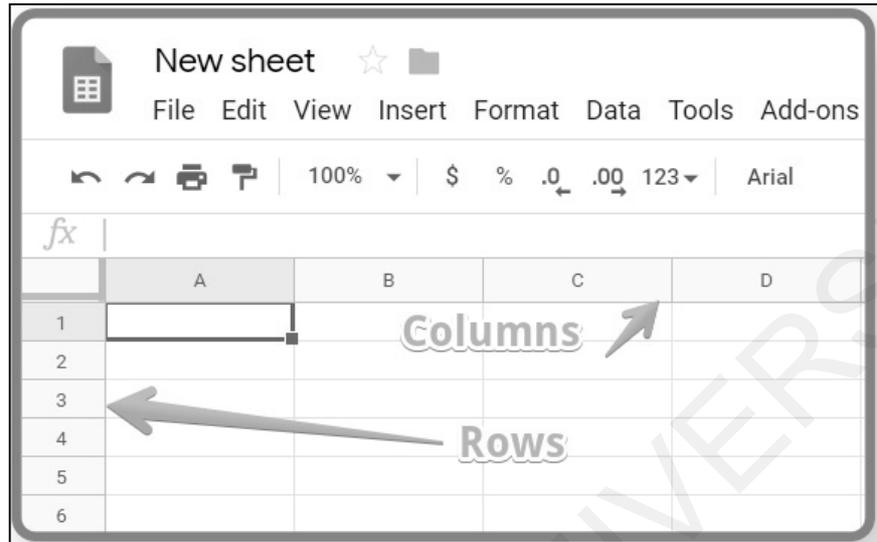
When you click All Sheets, you'll see a list of color-coded sheets that you may scroll through. This is especially useful if you have 10 or 20 pages in a single file that get hidden on the right.



**Sheet structure:** Cells, columns, and rows make up each sheet.

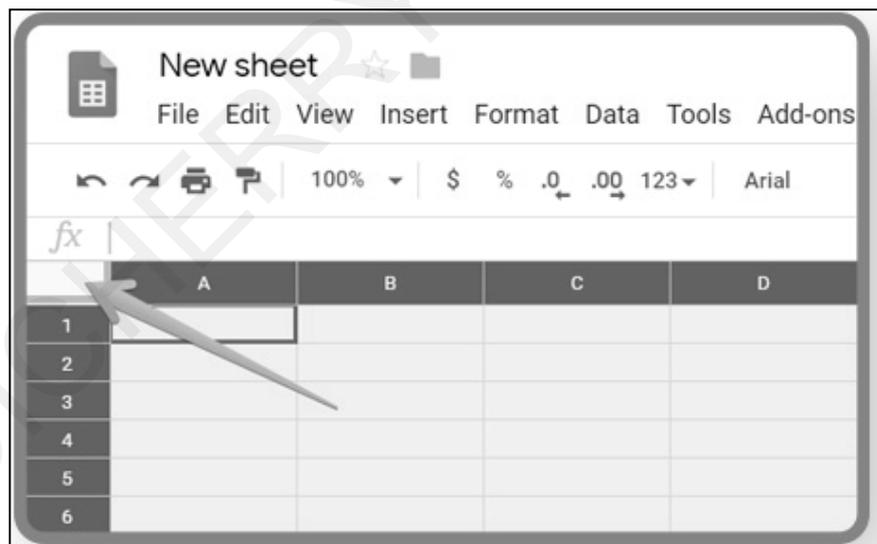
The alphabetical order of the columns is indicated. The rows are labelled numerically.

## NOTES



By clicking on the index, you can choose the entire column or row. Right-click a row or column to see a variety of choices such as cut, copy, resize, hide, and more. By right-clicking on the appropriate index, you can add a new row or column.

To select the whole sheet, click on the top-left corner as shown below:



### Cells

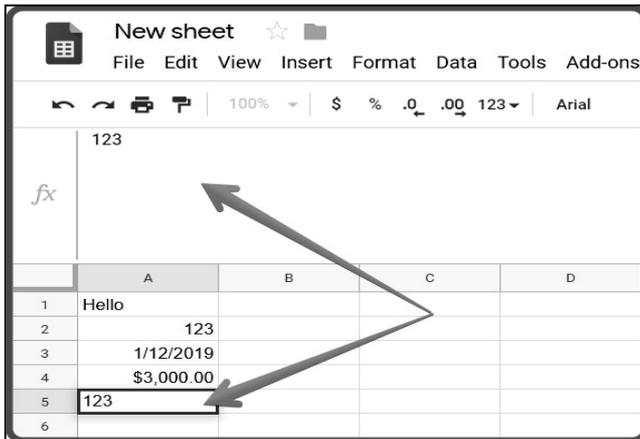
Cells let you to store data and do calculations based on the data in other cells. Each cell has its own index, which is made up of the column and row indexes. A1, B2, C3, and so on are some examples. Indexes are handy for selecting distinct cell ranges. The following are the most frequent methods for selecting distinct ranges:

- (A2,A5) – To select values only from A2 and A5, hold Ctrl key and click on the respective cells to select.
- (A2:A5) – To select all values in the range from A2 to A5, select the first cell and drag till the last desired cell.
- (A:A) – To select all numbers in the column, click on the column index.
- (A3:A) – To select all values from the entire column A3.

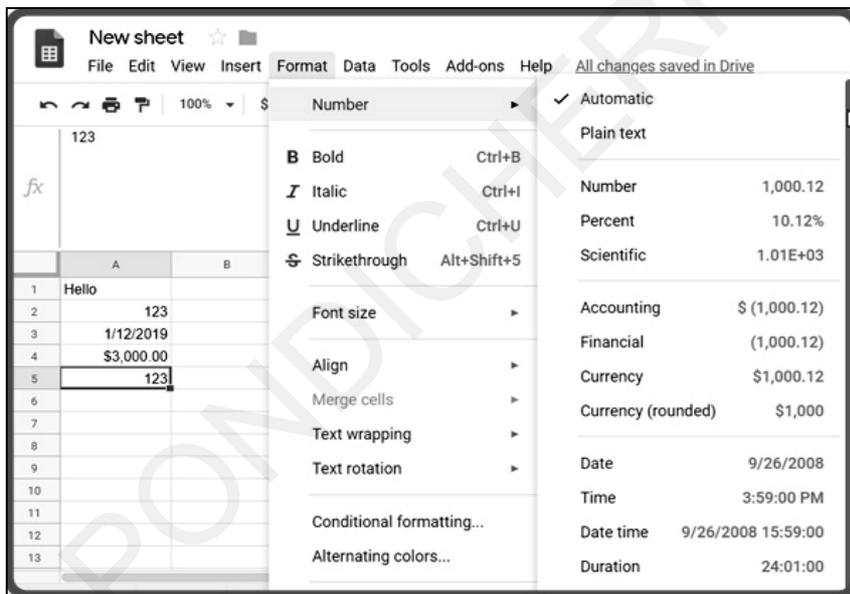
- (2:2) – To select values in second row, click on the row index.
- (A2:2) – To select values from the cell A2 till the end of the same row.

### Data Input

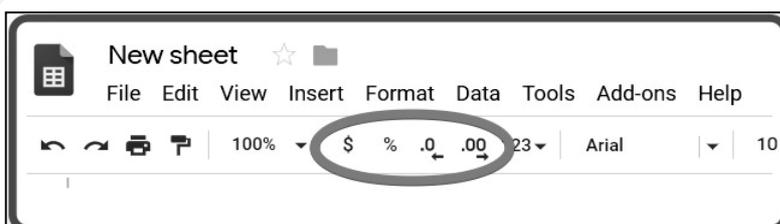
Click on the cell and start typing the required data to put the data in the current sheet.



The spreadsheet automatically recognizes the data type of the values entered in cell. The text is aligned on the left, numbers and dates – on the right. Use FORMAT tab to change the data type of values available in the selected cell.



The Number option in the format menu allows to convert numbers into \$ or %, as well as decrease or increase decimal places.

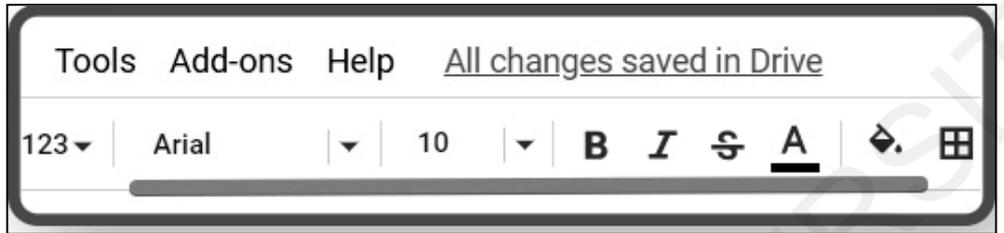


### NOTES

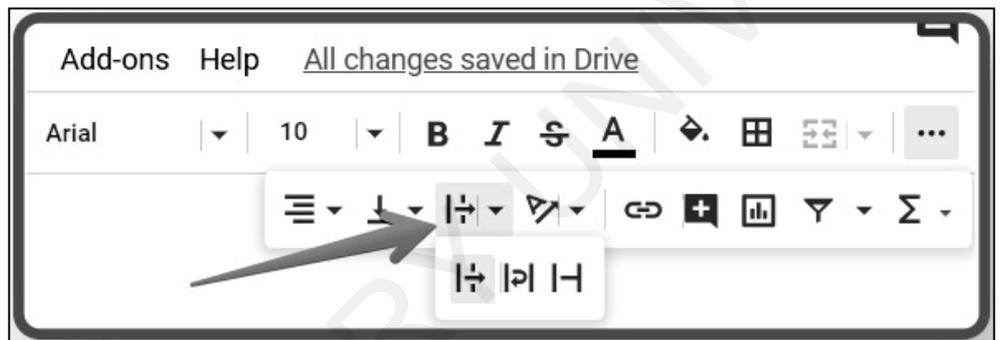
NOTES

**Data Formatting**

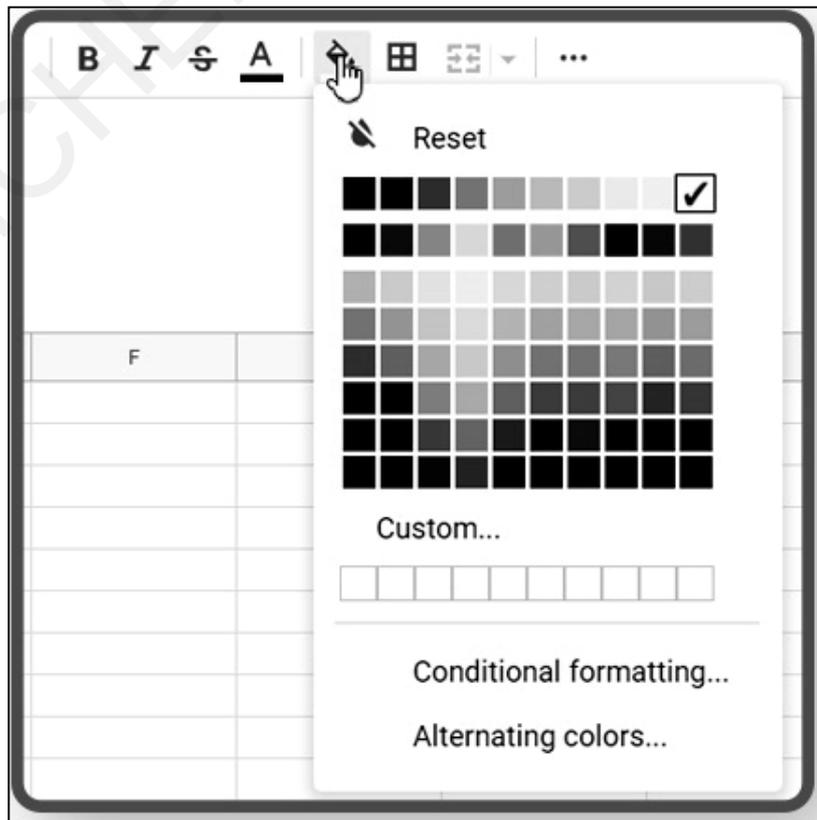
Select the relevant cells and format the texts using font, text size, bold, italics, strikethrough, text colour, and so on.



This button in the menu can be used to wrap text. It enables text to overflow, wrap, or be clipped. Another approach is to manually resize the columns.

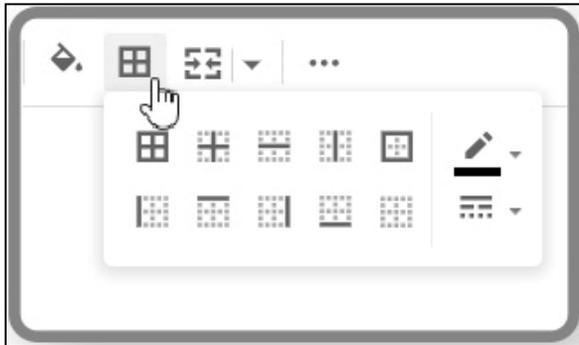


Select the cells and use the fill colour button to apply colour to them to mark headers, distinct categories of data, or cells containing formulas and function results.



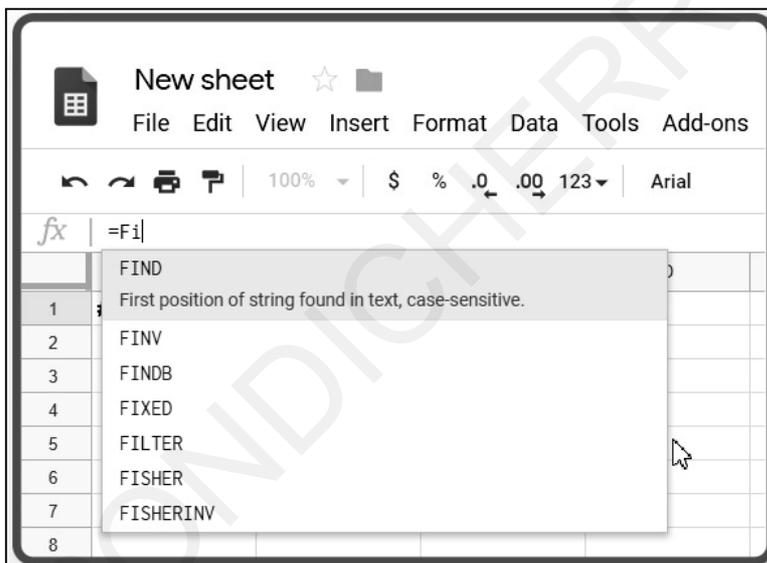
## NOTES

Using the highlighted button in the menu, add visible borders. It's useful if you want to print the results you want. Choose the proper selection from the available options, such as all borders, internal borders, one border in the top, bottom, left, or right, to apply visible borders to the selected cells. Border designs can also be produced in a variety of fashions.



### Functions in Google Sheets

Using different functions is one of the most beneficial features of Google Spreadsheets. To utilise a function, place an equal sign in a cell and begin typing the function's name. After that, a list of possible functions will appear, from which you can select one.



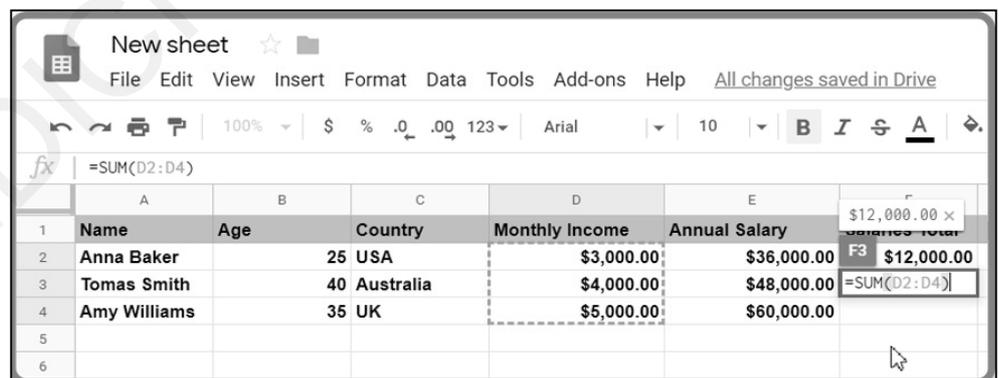
You can find a list of quick functions in the menu as well.

## NOTES



Let us try one of the most common functions – SUM.

1. Click on a new cell and select the function (SUM)
2. Select the range to be summed (monthly salaries, for example).
3. Hit Enter and get the result.

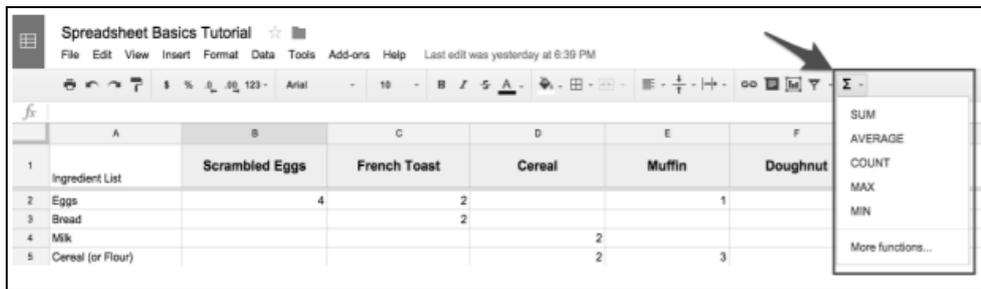


Other functions can also be used in this manner. Choose the proper function and repeat the steps: equal sign, function name, open parentheses, add a range, close parentheses, and press Enter. Google Sheets has a large number of functions. Let us study few important functions.

### Add, Average and Filter Data with Formulas

Google Sheets, in the same way as most spreadsheet applications, has a set of built-in formulas for completing many statistical and data manipulation operations. We can also use multiple formulas together to create more effective calculations.

Let's look at the five most popular formulas, as presented in the top navigation's formula drop-down menu.



## NOTES

You can add a formula to a cell by clicking on it, or you can start typing any formula in a cell by typing a = sign followed by the formula's name. Based on what you input, Sheets will auto-fill or suggest formulas. As a result, you won't have to remember every formula.

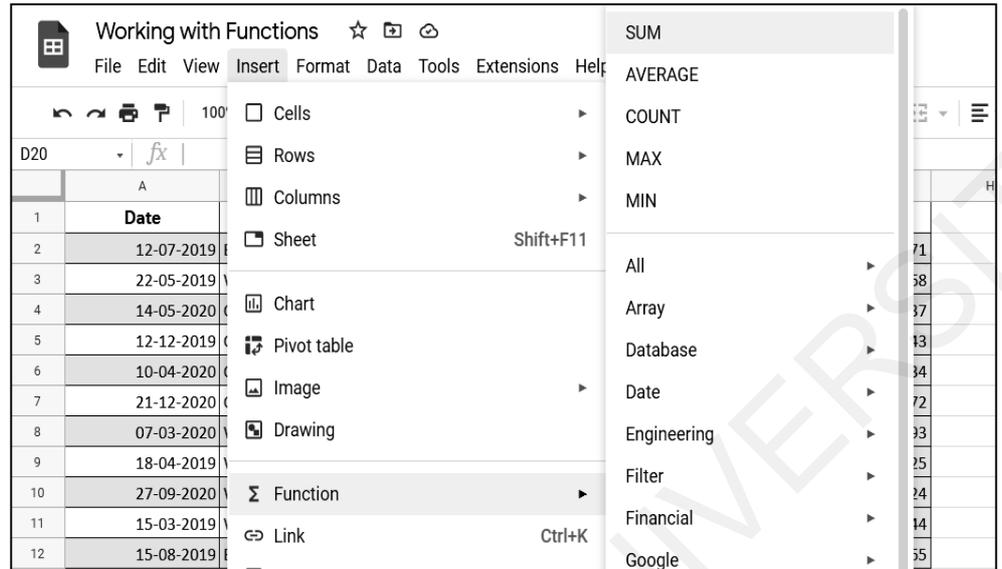
The following are the most basic formulas in Sheets:

- **SUM:** Adds up a given range of cells.  
e.g.,  $1 + 2 + 3 + 4 + 5 = \text{sum of } 15$
- **AVERAGE:** Gets the average of a given range of cells.  
e.g.,  $1, 2, 3, 4, 5 = \text{average of } 3$
- **COUNT:** Counts up the values in a given range of cells.  
e.g.,  $1, \text{blank}, 3, 4, 5 = 4 \text{ total cells with values}$
- **MAX:** Gets the maximum value in a range of cells.  
e.g.,  $1, 2, 3, 4, 5 = 5 \text{ is the highest}$
- **MIN:** Gets the smallest value in a range of cells.  
e.g.,  $1, 2, 3, 4, 5 = 1 \text{ is the lowest}$
- **Basic Arithmetic:** We can also perform functions like addition, subtraction and multiplication directly in a cell without calling a formula.

### Get Started with Functions

Functions make calculations easy and automatic. Open functions from the summation mark on the Edit toolbar. It can be opened by clicking on **Insert** > **Functions** from the menu toolbar. We will get immediate access to some of the most common formulas like SUM, AVERAGE, MIN, MAX, etc.

**NOTES**



**1. SUM Function:** Performs addition of given arguments.

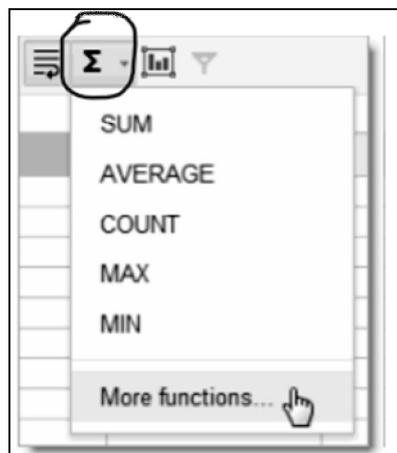
(a) Select the cell where we want to see the result for SUM.

Date	Region	Sales Person	Product	Units	Unit Cost	Total
12-07-2019	East	Howard	Binder	29	1.99	57.71
22-05-2019	West	Thompson	Pencil	32	1.99	63.68
14-05-2020	Central	Gill	Pencil	53	1.29	68.37
12-12-2019	Central	Smith	Pencil	67	1.29	86.43
10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
21-12-2020	Central	Andrews	Binder	28	4.99	139.72
07-03-2020	West	Sorvino	Binder	7	19.99	139.93
18-04-2019	West	Andrews	Pencil	75	1.99	149.25
27-09-2020	West	Sorvino	Pen	76	1.99	151.24
15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
15-08-2019	East	Jones	Pencil	35	4.99	174.65

To Get the Output	Function Used	Result
Total Sale	SUM()	

(b) Click the function button with the summation sign and select SUM.



(c) The SUM function is inserted in the cell:

G15   fx   =SUM( )							
	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
15	<b>Total Sale</b>		SUM()			=SUM( )	

**NOTES**

(d) Select the range of cells you want to add. The cell range G2 to G12 as shown below is added to SUM function:

G15   fx   =SUM(G2:G12)							
	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			1329.76 ×	
15	<b>Total Sale</b>		SUM()			=SUM(G2:G12)	

(e) Press Enter Key or Tab Key to see the result:

G15   fx   =SUM(G2:G12)							
	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
15	<b>Total Sale</b>		SUM()			1329.76	

NOTES

**2. COUNT Function:** Counts the numbers from in the list of arguments.

(a) Select the cell where we want to see the result for COUNT.

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
16	Number of Products		COUNT()				

(b) Click the function button with the summation sign and select COUNT.

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
16	Number of Products		COUNT()			=COUNT()	

(c) Select the range of cells you want to count. The cell range G2 to G12 as shown below is counted by COUNT function:

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
16	Number of Products		COUNT()			=COUNT(G2:G12)	

(d) Press Enter Key or Tab Key to see the result.

NOTES

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
16	<b>Number of Products</b>		COUNT()			11	

3. **AVERAGE Function:** Calculates the average of given arguments.

(a) Select the cell where we want to see the result for AVERAGE.

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
17	<b>Average Sale</b>		AVERAGE()				

(b) Click the function button with the summation sign and select AVERAGE.

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
17	<b>Average Sale</b>		AVERAGE()			=AVERAGE()	

NOTES

(c) Select the range of cells for which we want to calculate average. The average will be calculated for cell range G2 to G12 as shown below using AVERAGE function:

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>				120.8872727 ×
17	<b>Average Sale</b>		AVERAGE()				=AVERAGEA(G2:G12)

(d) Press Enter Key or Tab Key to see the result.

	A	B	C	D	E	F	G
1	<b>Date</b>	<b>Region</b>	<b>Sales Person</b>	<b>Product</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>				<b>Result</b>
17	<b>Average Sale</b>		AVERAGE()				120.8872727

4. **MAX Function:** Returns maximum or greatest value among given arguments.

- (a) Select the cell where we want to see the result for MAX.
- (b) Click the function button with the summation sign and select MAX.
- (c) Select the range of cells you want. Function will return maximum value from the cell range G2 to G12 as shown below:

NOTES

Working with Functions							
File Edit View Insert Format Data Tools Extensions Help Last edit was 3 minutes ago							
100% \$ % .0 .00 123 Default (Ari... 10 B I S A							
G18 fx =max(G2:G12)							
	A	B	C	D	E	F	G
1	Date	Region	Sales Person	Product	Units	Unit Cost	Total
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
17	Average Sale		AVERAGE()			174.65 × 1727	
18	Maximum Sale		MAX()			=max(G2:G12)	

(d) Press Enter Key or Tab Key to see the result.

5. **MIN Function:** Returns minimum or smallest value among given arguments.

- (a) Select the cell where we want to see the result for MIN.
- (b) Click the function button with the summation sign and select MIN.
- (c) Select the range of cells you want to count. Function will return maximum value from the cell range G2 to G12 as shown below:

Working with Functions							
File Edit View Insert Format Data Tools Extensions Help Last edit was 6 minutes ago							
100% \$ % .0 .00 123 Default (Ari... 10 B I S A							
G19 fx =min(G2:G12)							
	A	B	C	D	E	F	G
1	Date	Region	Sales Person	Product	Units	Unit Cost	Total
2	12-07-2019	East	Howard	Binder	29	1.99	57.71
3	22-05-2019	West	Thompson	Pencil	32	1.99	63.68
4	14-05-2020	Central	Gill	Pencil	53	1.29	68.37
5	12-12-2019	Central	Smith	Pencil	67	1.29	86.43
6	10-04-2020	Central	Andrews	Pencil	66	1.99	131.34
7	21-12-2020	Central	Andrews	Binder	28	4.99	139.72
8	07-03-2020	West	Sorvino	Binder	7	19.99	139.93
9	18-04-2019	West	Andrews	Pencil	75	1.99	149.25
10	27-09-2020	West	Sorvino	Pen	76	1.99	151.24
11	15-03-2019	West	Sorvino	Pencil	56	2.99	167.44
12	15-08-2019	East	Jones	Pencil	35	4.99	174.65
13							
14	<b>To Get the Output</b>		<b>Function Used</b>			<b>Result</b>	
17	Average Sale		AVERAGE()			174.65 × 1727	
18	Maximum Sale		MAX()			57.71 × 174.65	
19	Minimum sale		MIN()			=min(G2:G12)	

**NOTES**

(d) Press Enter Key or Tab Key to see the result.

The figure below shows summary for all calculations discussed so far. Similarly, other available functions can be used in Google Sheets.

The screenshot shows a Google Sheets spreadsheet titled "Working with Functions". The spreadsheet contains a table of sales data with columns for Date, Region, Sales Person, Product, Units, Unit Cost, and Total. Below the data table, there is a summary section with the following data:

To Get the Output	Function Used	Result
Total Sale	SUM()	1329.76
Number of Products	COUNT()	11
Average Sale	AVERAGE()	120.8872727
Maximum Sale	MAX()	174.65
Minimum sale	MIN()	57.71

**Hiding and Unhiding a Column or Row**

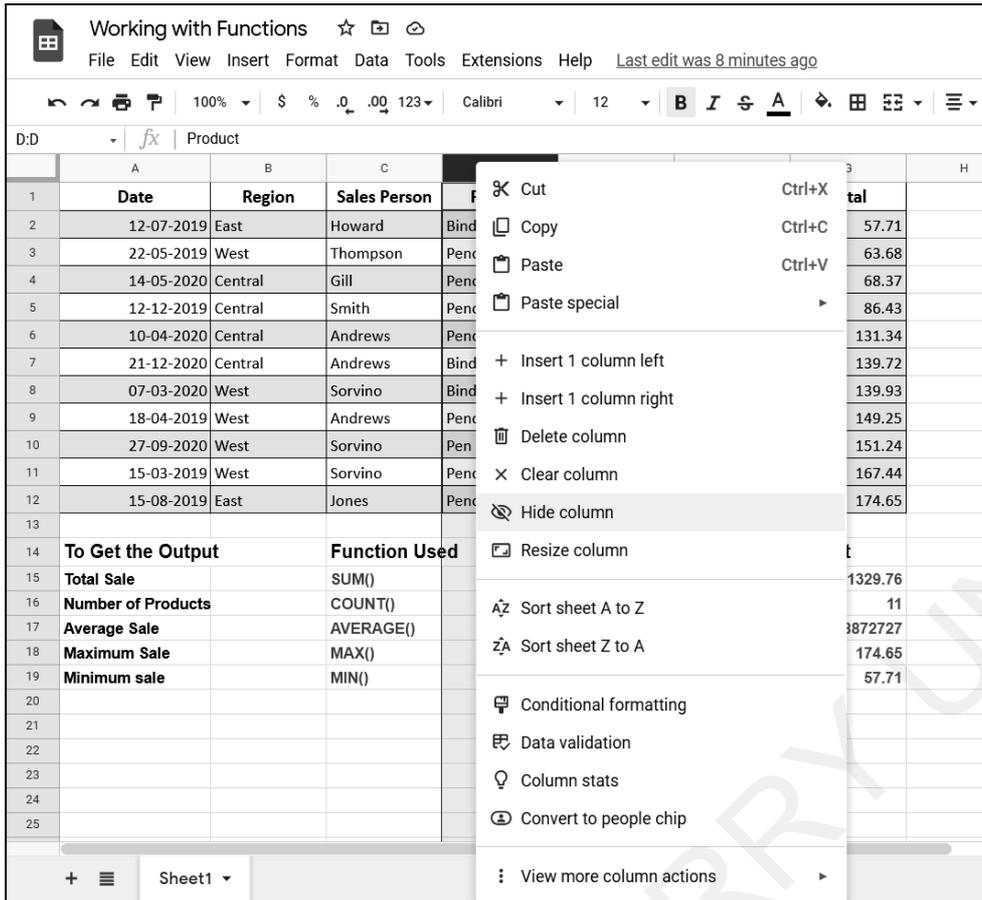
Sometimes, a specific or range of row or column is not required for cluttering up our view, but we still might need this information for later use. In such case, we can hide the row or column.

Calculations in a spreadsheet are unaffected by hiding columns and rows; all data in hidden columns and rows is still referenced by formulae as needed. In addition, hidden columns and rows do not appear in a printout.

**How to Hide a Column or Row?**

1. Select the column or row that you want to hide. We can also select multiple columns or rows.
2. Right-click and select Hide row or Hide column as shown below:

**NOTES**



**How to Unhide a Column or Row?**

1. Click on the arrows between the adjacent rows/columns as shown below:



**Data Visualization**

Charts can be used to give the visual effect to the numeric data. Chart is a graphical representation of the data that we may want to analyze. Creating various charts is the basic technique used for data visualization.

Let us understand how different types of charts can be created in Google Sheets.

In Google Sheets, we can create a variety of charts, including bar charts, pie charts, and line charts.

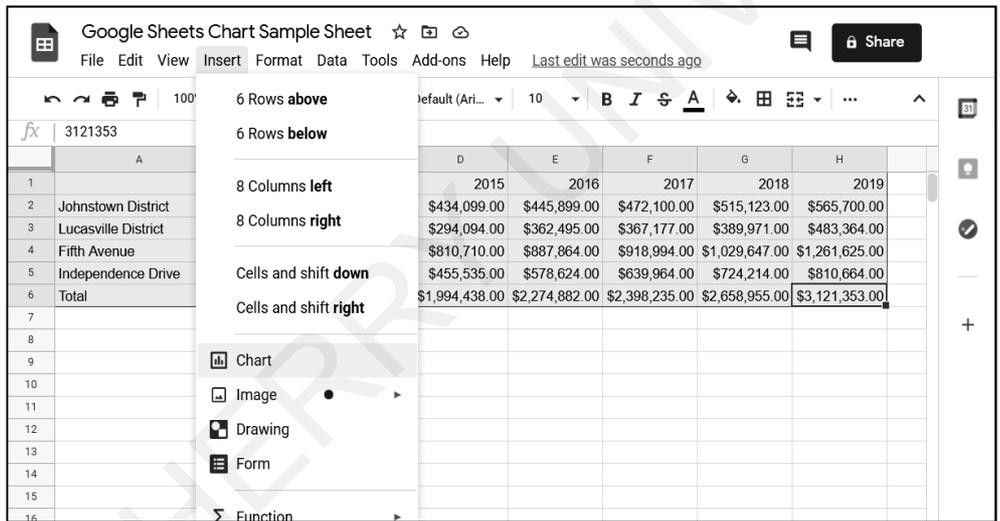
**Creating and Adding Charts**

**Step 1:** Select the data to be visualised from a range of cells. The data to be displayed through charts is depicted in the diagram below.

NOTES

	2013	2014	2015	2016	2017	2018	2019
Johnstown District	\$356,881.00	\$377,991.00	\$434,099.00	\$445,899.00	\$472,100.00	\$515,123.00	\$565,700.00
Lucasville District	\$267,665.00	\$274,015.00	\$294,094.00	\$362,495.00	\$367,177.00	\$389,971.00	\$483,364.00
Fifth Avenue	\$763,154.00	\$797,159.00	\$810,710.00	\$887,864.00	\$918,994.00	\$1,029,647.00	\$1,261,625.00
Independence Drive	\$434,037.00	\$467,547.00	\$455,535.00	\$578,624.00	\$639,964.00	\$724,214.00	\$810,664.00
Total	\$1,821,737.00	\$1,916,712.00	\$1,994,438.00	\$2,274,882.00	\$2,398,235.00	\$2,658,955.00	\$3,121,353.00

Step 2: From the toolbar, select **Insert**, then **Chart** from the drop-down menu.



Step 3: A column chart will be created. Title, legend and axis labels for the graph will be generated automatically.

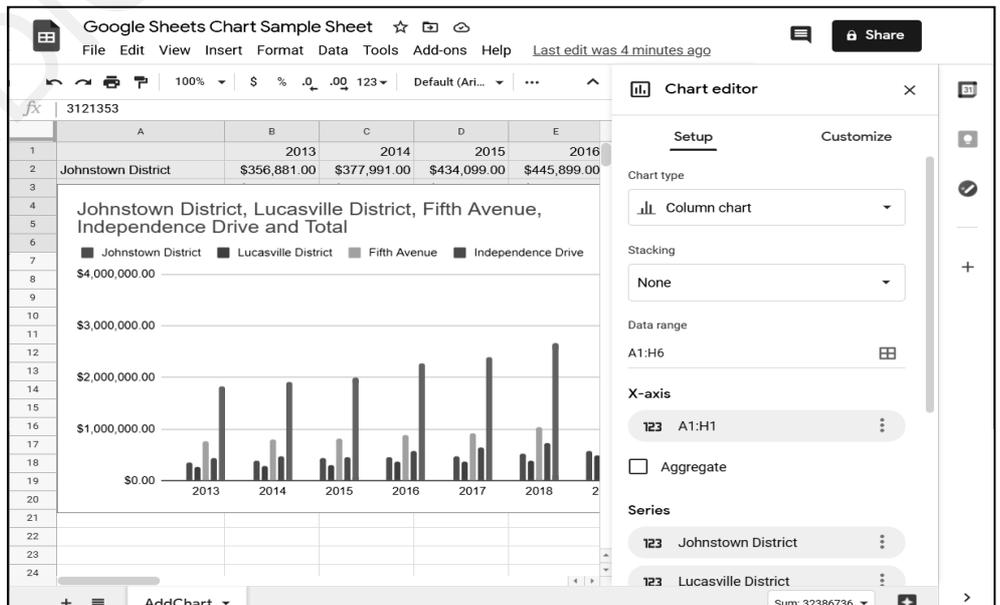


Fig. 3.2: Column chart

A chart will be inserted in a current spreadsheet and Chart editor will appear at the right side of the Google Sheet sidebar.

## Types of Charts

## NOTES

### 1. Line charts

Line charts are made up of dots that indicate data points and are connected by dots. The X-axis in Fig. 3.2 represents the time period, while the Y-axis is the metric to be represented. Line charts are used to show how the value of a measure has changed over time.

### 2. Area charts

Region charts are similar to line charts in that the X-axis represents the time period and the Y-axis represents the metric being represented; however, the area beneath the line is shaded with a specific colour.

We frequently require multiple series of the same measure to depict as a stack of different colours representing distinct areas under the curve. Stack area charts are what they're called. Stacked area charts are used to show how the contribution of several sources to a certain amount or measure has changed over time.

### 3. Column and bar charts

Rectangles indicate the values of different items or even the value of a metric across time in column and bar charts. For comparing the values of a statistic across different elements, column charts and bar charts are the best options.

### 4. Stacked column and bar charts

Stacked column charts and stacked bar charts are similar to stacked area charts in that they show the impact of multiple sources on a single value. They're utilised to assess the make-up of diverse products.

### 5. Pie charts

A pie chart is made out of a circle, a disc, or a donut that is divided into pieces that indicate different sources or components based on the source data. They're utilised to illustrate a single parameter's structure in source data.

### 6. Scatter charts

In an X-Y plane, scatter charts are made up of points that represent distinct data points. Several variables are represented on the X and Y axes. These data points help to construct a pattern that communicates the two variables represented by the axes. As a result, scatter charts are used to depict the relationship between two variables. One is referred to as a dependent variable, while the other is referred to as an independent variable.

## NOTES

### 7. Geo charts

Geo charts are made out of a geographic map with different coloured countries, cities, or other geographic areas available in source data. The following tasks can be accomplished using geo charts:

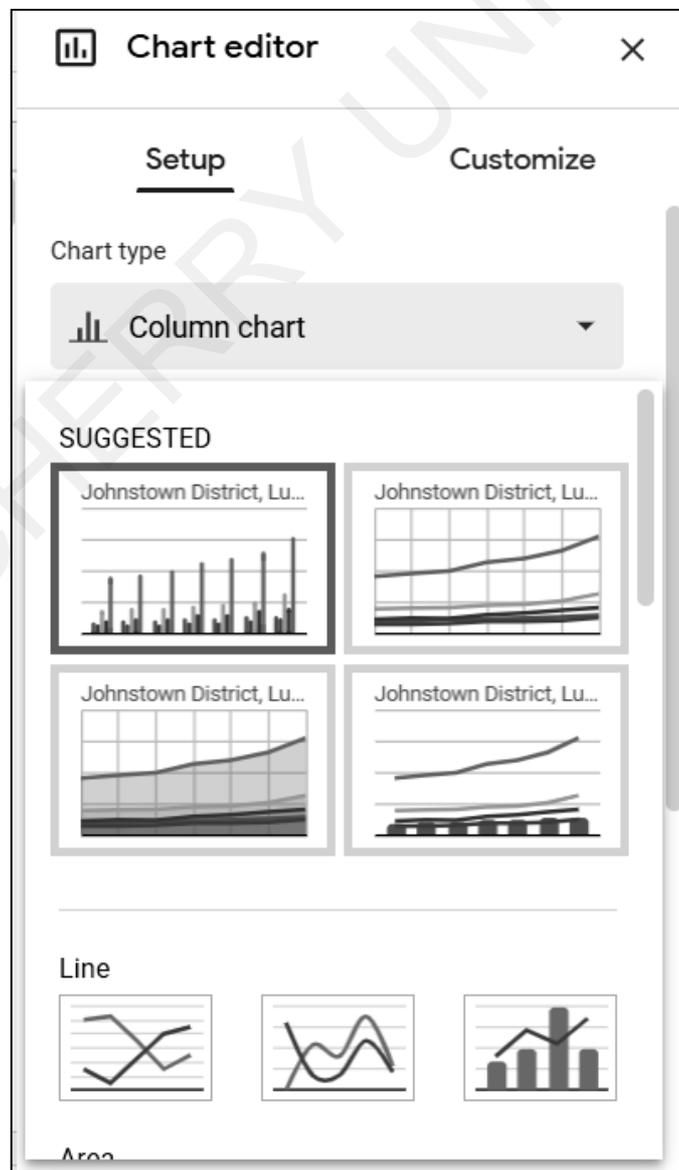
- (a) Compare the values of each geographic location's metric, where the colours represent different shades of the same major colour.
- (b) Determine which countries share similar characteristics; in this case, the colours are different to show the distinctions.

#### Selecting the Chart Type

**Step 1:** Go to the **Chart editor** sidebar.

**Step 2:** Select **Setup** tab, then find the option **Chart type** setting.

**Step 3:** Select the drop-down box.

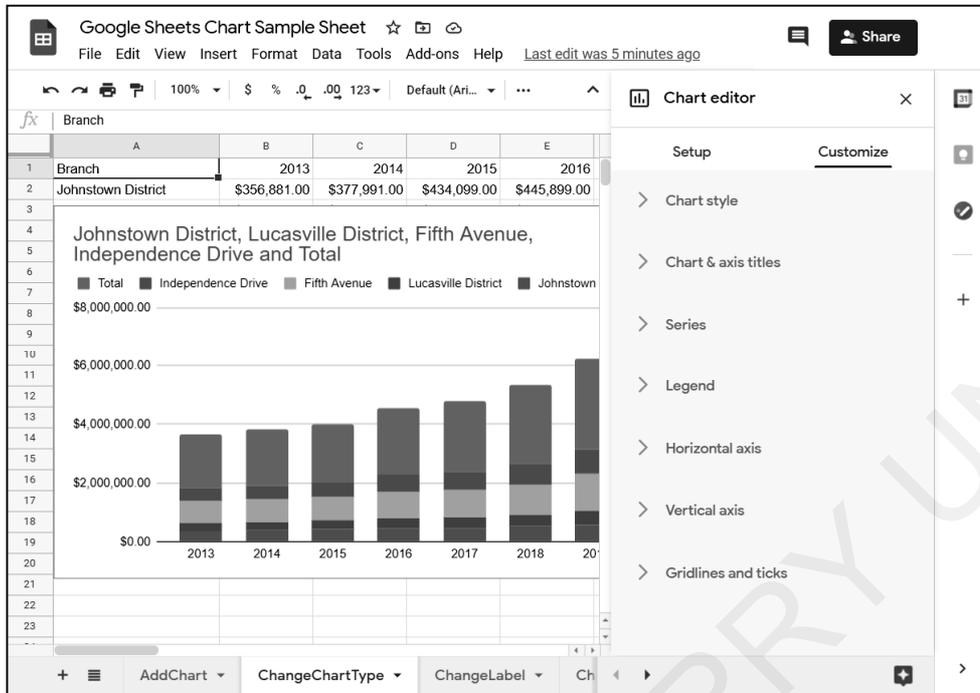


## Changing the Title and Axis Labels

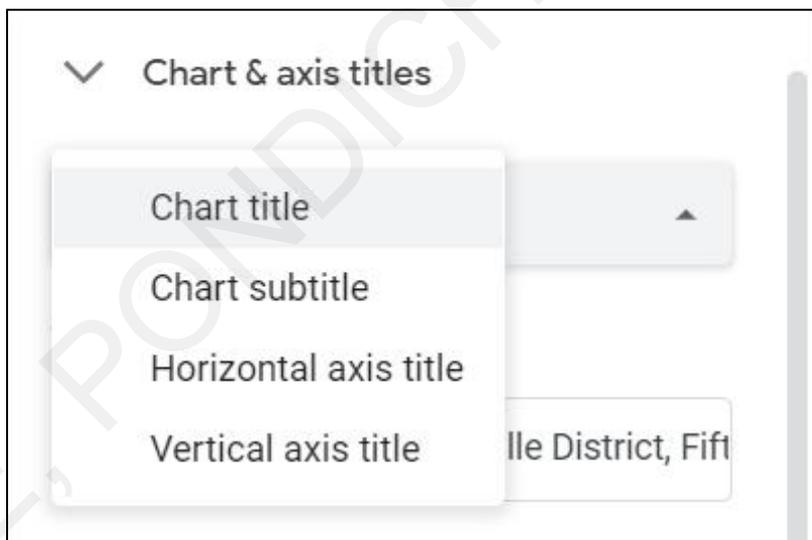
**Step 1:** In the **Chart editor**, select the **Customize** tab.

The Chart editor's Customize tab displays a number of options for modifying our charts.

### NOTES

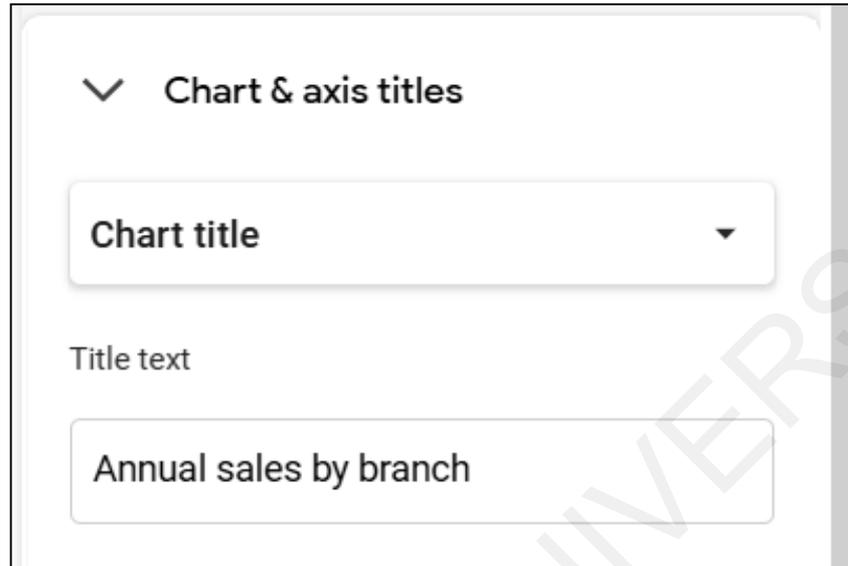


**Step 2:** The **chart and axis titles** can be accessed by clicking on them. You may alter the label by selecting it from the drop-down box. It could be the axis labels, the **chart title**, or the chart subtitle.



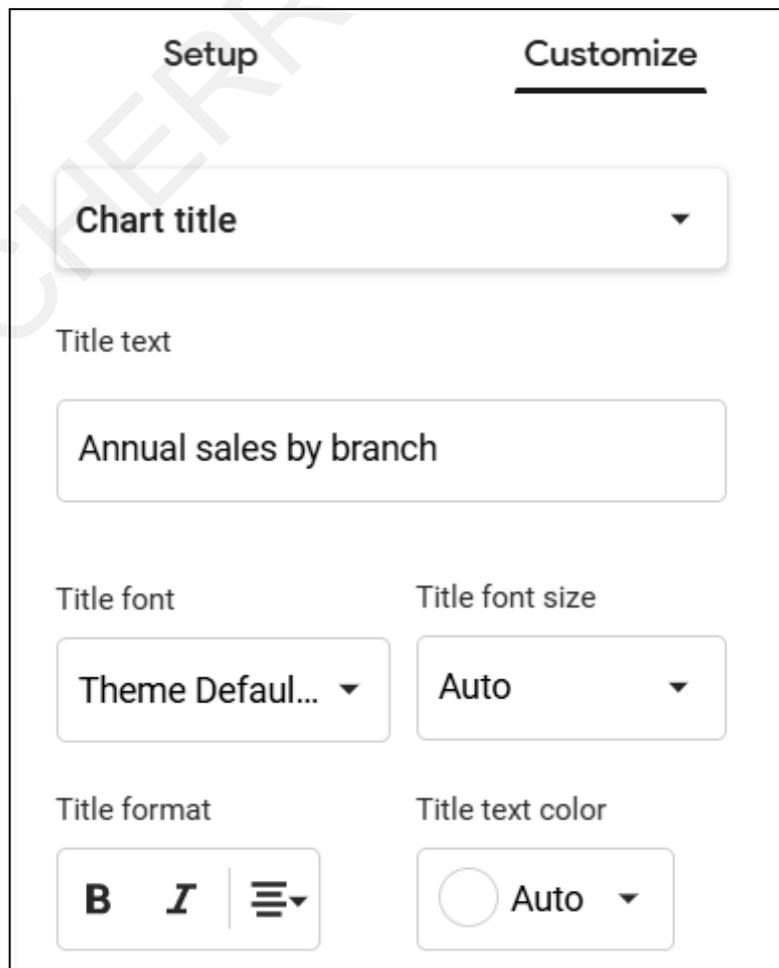
**Step 3:** The title of the graphic should be changed to **Annual sales by branch**. In the drop-down box, choose **Chart title**, and then put **Annual sales by branch** in the text box below.

NOTES

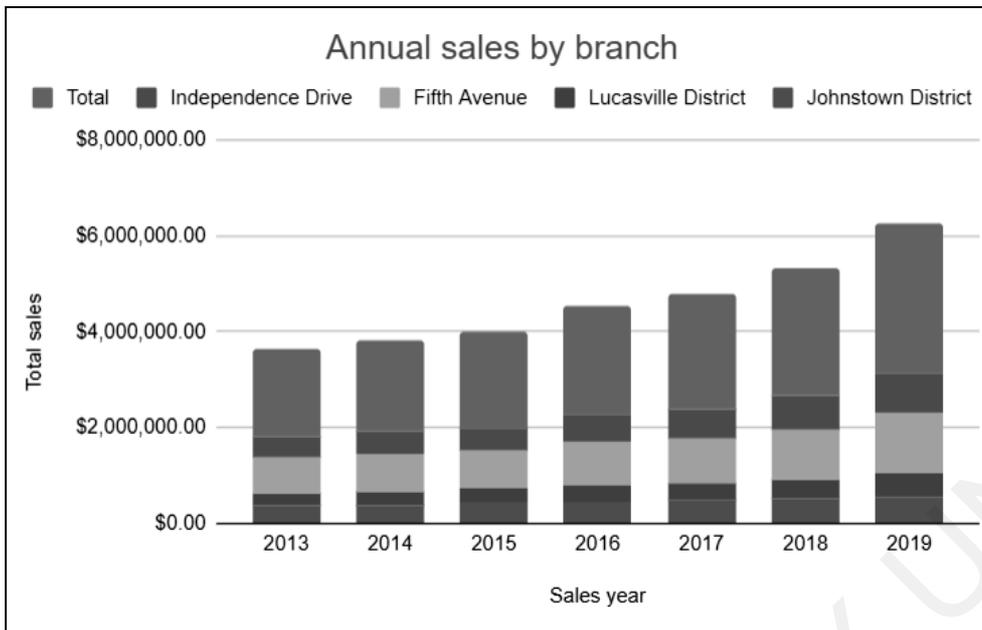


**Step 4:** In the same tab, we may modify the title font, font size, title alignment, and title colour. Change the choices as needed by clicking on them.

The Customize tab has been selected. The chart title has been chosen. Formatting chart title options include title font, font size, title format, and title text colour.



**Step 5:** Carry out the identical steps for the labels on the horizontal and vertical axes. The graph will look something like this:



## NOTES

**Step 6:** We can customise the **Title text**, **Title font**, **Title font size**, **Title format**, and **Title text colour** to match the chart's formatting needs.

Title text

Annual sales by branch

Title font

Theme Defaul... ▼

Title font size

Auto ▼

Title format

**B** *I* ☰ ▼

Title text color

Auto ▼

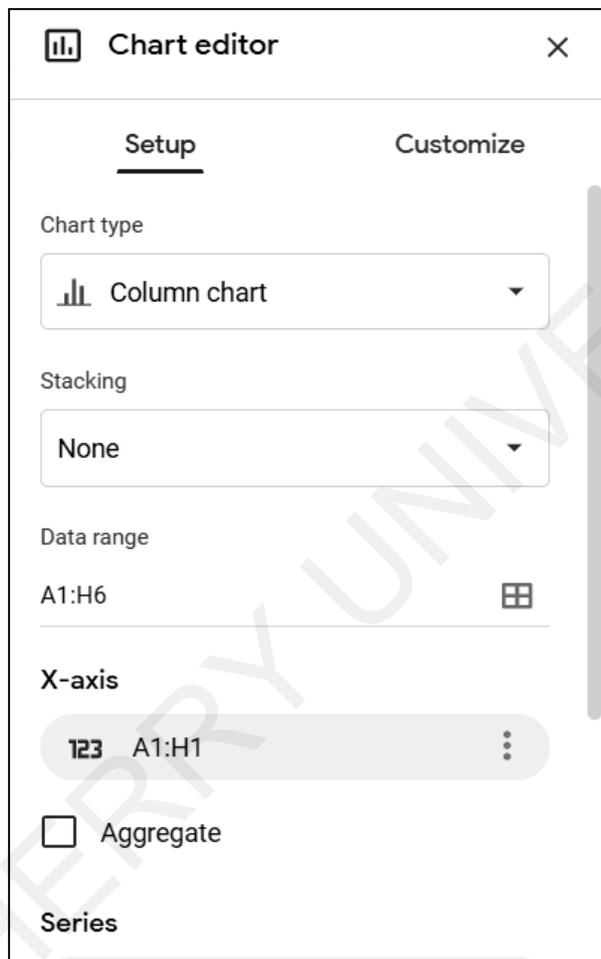
### Changing the Data Range of the Chart

If we wish to alter the data range, either because we made a mistake while picking it or because we need to make adjustments to meet the requirements, we can do so without having to repeat all of the stages.

**Step 1:** Make a note of the new data range. This is done by looking at the source sheet and picking the cells you want to keep in your chart.

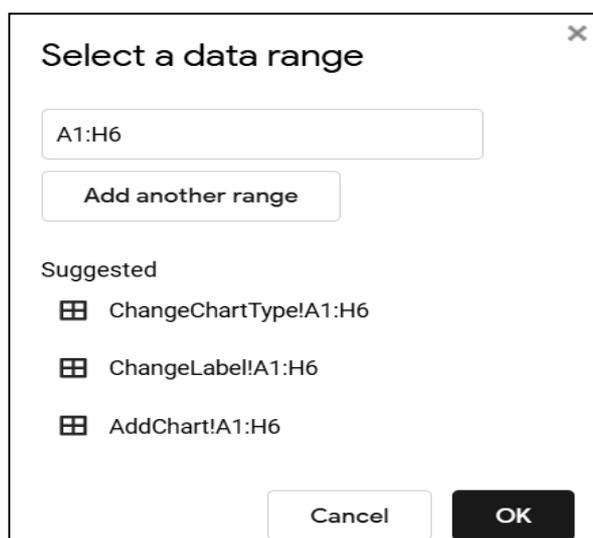
NOTES

**Step 2:** Select the **Setup** tab in the **Chart editor**. Below the Chart style and Stacking options is the **Data range**.



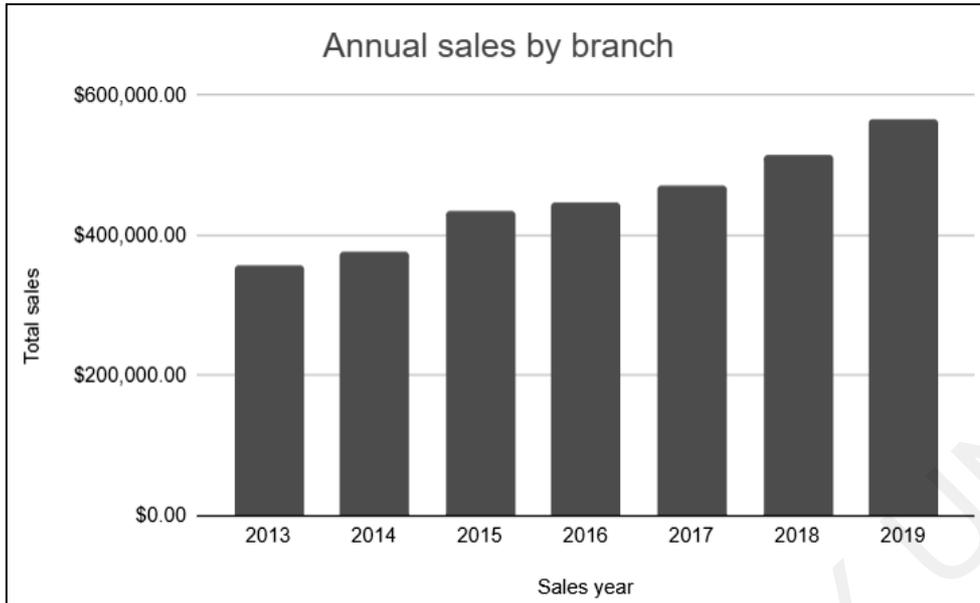
**Step 3:** To alter the data range, use one of the methods below:

1. Type the new data range in the text box of the Data range option.
2. On the right end of the text field, click the box symbol. There will be a pop-up box.



When this pop-up displays, we may use the mouse to pick the data range, and the displayed range is updated with the array's range. After you've chosen the data range you want, click the **OK** button. The graph will be updated right away.

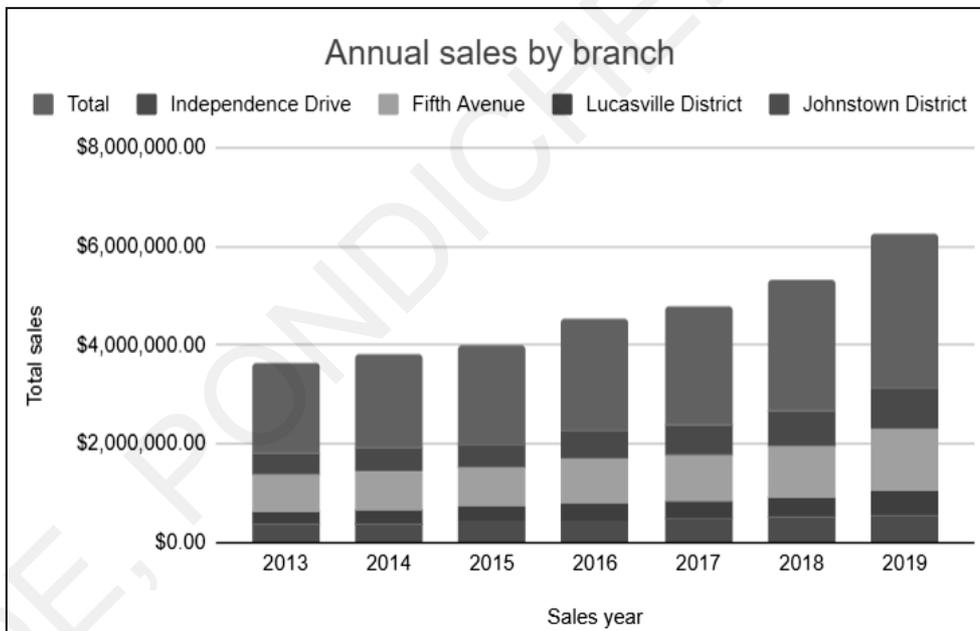
## NOTES



In the above figure, we have reduced the data from several branches down to a single branch.

### Changing the Chart Data Series without Changing the Data Range

Let us assume our chart currently looks like as shown below:

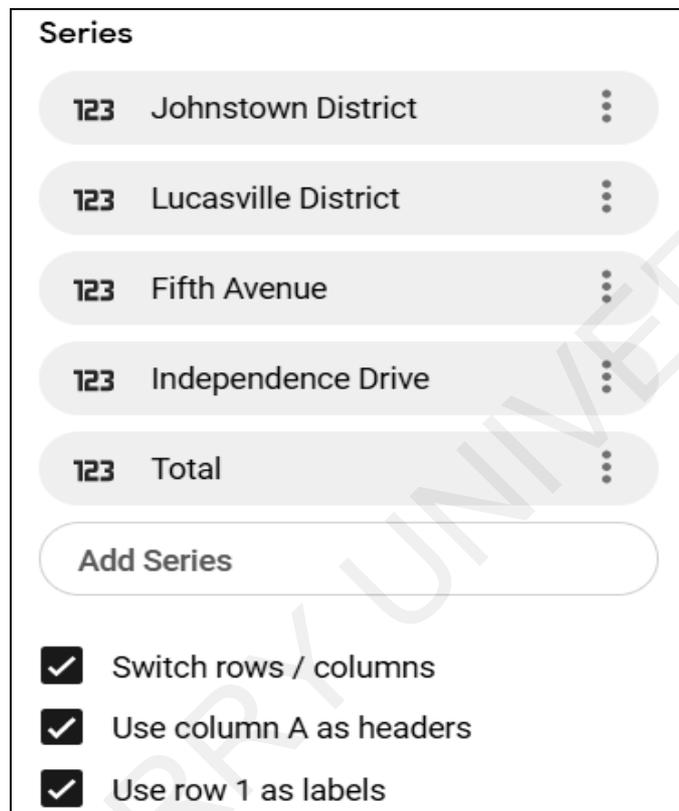


### Remove a Series from the Chart

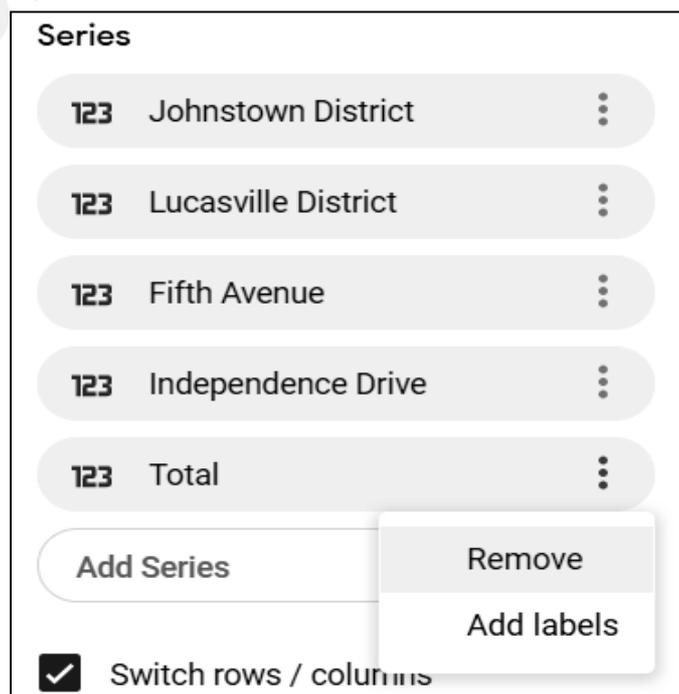
Let's say we wish to remove the **Total** and **Johnstown District** series from the chart without changing the data range it covers. This can be accomplished by following the steps below:

## NOTES

**Step 1:** Go to the **Chart editor**, select **Setup** tab. Scroll down the tab. List of labelled **Series** appears. List will appear as shown below.

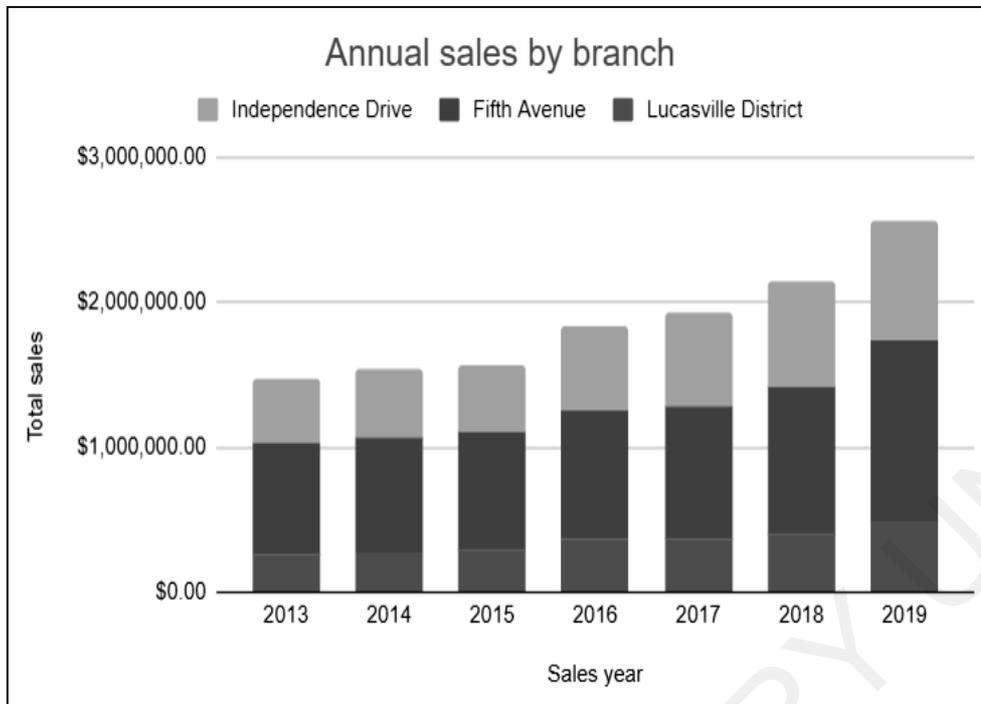


**Step 2:** To change a series, click the three dots on the series you want to change. In our case, we wish to get rid of the **Total** series. A little drop-down box will appear, allowing you to remove or add labels to the series. Select the **Remove** option.



**Step 3:** Follow the same set of steps for other series that you want to remove.

Our chart will look like as shown below:



## NOTES

Below are few useful tips for creating charts.

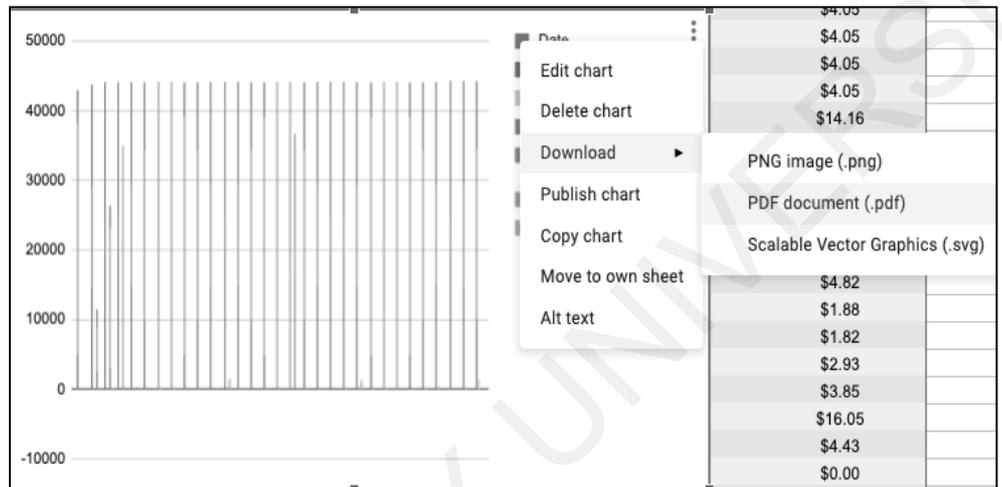
1. A chart title should be short, clear, and describes by its own.
2. Make the subtitle less prominent than main title by decreasing its font size, or changing its font style or colour, or applying other formatting options.
3. Bar and Column Charts should start with zero.
4. The zero-baseline rule cannot be applied to the line charts.
5. Pie charts represent 100% of the quantity with single unit. Use it only where analysis is required in percentile.
6. Avoid visual elements which do not carry any information.
7. The X-axis label on a column chart can be rotated to suit. When a column chart is rotated 90 degrees, it becomes a horizontal bar chart.
8. Elements can be arranged logically or alphabetically.
9. Keep simple captions, and use bold type to highlight major perceptions.
10. Consider opposite colour schemes for better understating of graphical view of data.

### Downloading the Chart

Many times, we may need to download our charts to share it to your team via email. Google Sheets has this built-in feature and allows us to download file to a PNG, PDF, etc.

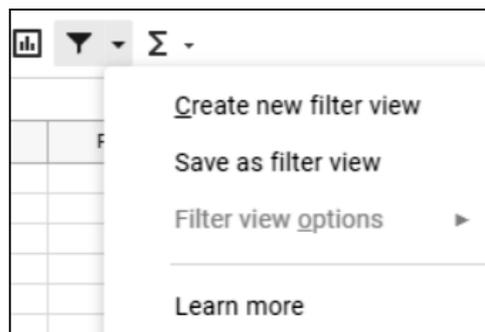
## NOTES

1. Place your mouse pointer over the graph.
2. Three dots will display in the chart's top right corner.
3. Click on the three dots, and we will get a drop-down list.
4. Go to Download option and select the file type that you would like to download for sharing purpose.



## Filtering Data

Filtering is a simple and effective approach to locate and manipulate a subset of data. A filter restricts the display of rows to those that fulfil the conditions we provide. Filtering does not rearrange the range that has been selected. Filtering just hides rows that we don't want to see till the filtering is turned off. When filtered rows can be edited, formatted. Charts can be created with filtered data. Also, printing can be done with filtered subset without rearranging or moving it.



NOTES

You'd like to filter the following data to generate filter buttons at the top:

1. To filter a column, click on the label of the column you want to filter.

	A	B	C	D	E	F
1	<b>Player</b>	<b>Salary</b>	<b>Team</b>	<b>League</b>		
2	Abbott, Jim	\$ 2,200.00				
3	Abbott, Kurt	\$ 250.00	Sort A → Z			
4	Acevedo, Juan	\$ 123.00	Sort Z → A			
5	Adams, Terry	\$ 113.00	Sort by color			
6	Aguilera, Rick	\$ 3,500.00				
7	Aldred, Scott	\$ 150.00	Filter by color			
8	Aldrete, Mike	\$ 200.00				
9	Alexander, Manny	\$ 190.00	Filter by condition			
10	Alfonzo, Edgardo	\$ 180.00	Greater than			
11	Alicea, Luis	\$ 625.00	Value or formula			
12	Alomar, Roberto	\$ 4,279.37	Filter by values			
13	Alomar, Sandy	\$ 2,550.00	Select all - Clear			
14	Alou, Moises	\$ 3,000.00				
15	Alvarez, Wilson	\$ 2,700.00				
16	Amaral, Rich	\$ 400.00				
17	Anderson, Brady	\$ 3,583.33				
18	Anderson, Garret	\$ 250.00				
19	Andrews, Shane	\$ 135.00				
20	Anthony, Eric	\$ 1,000.00				
21	Appler, Kevin	\$ 5,051.25				
22	Arias, Alex	\$ 412.50				
23	Arias, George	\$ 109.00				
24	Ashby, Andy	\$ 1,900.00				
25	Ashley, Billy	\$ 195.00				
26	Assenmacher, Paul	\$ 825.00				
27	Astacio, Pedro	\$ 1,100.00	✓ (Blanks)			
28	Ausmus, Brad	\$ 350.00	✓ \$ 109,000			
29	Avery, Steve	\$ 4,200.00	✓ \$ 110,500			
30	Ayala, Bobby	\$ 325.00	✓ \$ 111,500			
31	Baerga, Carlos	\$ 4,750.00				
32	Bagwell, Jeff	\$ 4,875.00				
33	Bailey, Cory	\$ 125.00				
34	Bailey, Roger	\$ 150.00				
35	Baines, Harold	\$ 1,150.00				
36	Bartee, Kim	\$ 109.00				
37	Bates, Jason	\$ 181.50				
38	Batiste, Kim	\$ 150.00				

2. Create a new filter view by clicking the Create a filter icon in the toolbar.
3. A drop-down menu displays when we click on the green striped arrow at the top of the column, from which we can choose the appropriate colour, text, or numeric filter. Various options are available like Filter by condition, then select from the menu, greater than, less than, in between; Text starts with, ends with, contains and so on.

**Spreadsheet – Offline Mode**

We can use Google Spreadsheets even if internet connection is not available with OFFLINE MODE feature. This allows to work with sheets in offline mode too.

When you rejoin to the internet, Google Sheets' "Offline Mode" appears, automatically syncing any changes made to the document. This is useful in any case where we need to use Google Sheets as if it were a desktop programme.

## NOTES

### Check Your Progress

1. Google Docs is an online \_\_\_\_\_ processor.
2. Documents can be emailed directly without \_\_\_\_\_ it.
3. \_\_\_\_\_ option allows everyone to see and work on the same version of the document.
4. A vertical range of cells that runs down from the top of the sheet is known as \_\_\_\_\_.
5. To use a function, put \_\_\_\_\_ sign in a cell and start typing the name of the function.

## 3.3 CREATING A BROCHURE USING GOOGLE DOCS

A brochure is a printed document for advertising or promotional purpose. It can be folded to make a template, pamphlet or leaflet. Brochures provides information about company introduction, organization, products or services. It is used to provide crisp information to potential customers or members. They are typically distributed within newspapers, handed out individually, or placed in high-traffic sites in brochure racks. Nowadays, instead physical printed brochure, we prefer e-brochure as it is easy to circulate on a social and digital media. There are many tools and applications available to create and design brochures like Photoshop, CorelDRAW, Canva, and even Google Docs.

In the previous section, we have learnt how to work with Google Docs. Basic steps will remain same as to create, edit, share or to download the brochure created using Google Docs.

So, quickly learn how we can design and create brochure using Google Docs.

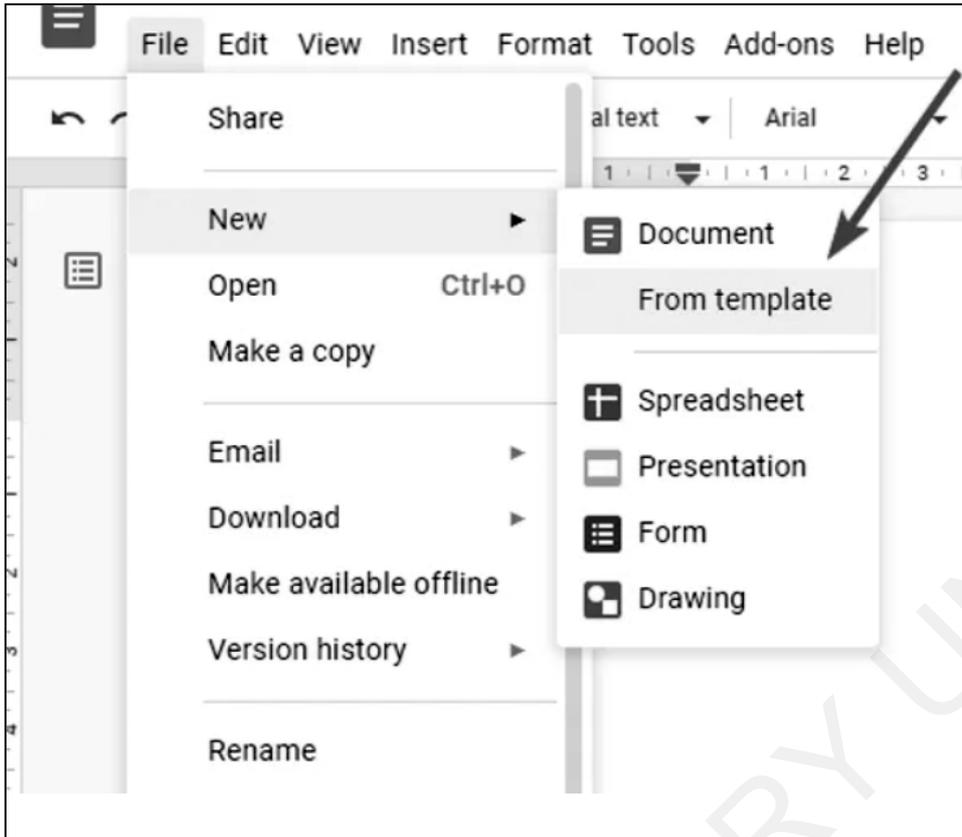
Using Google Docs on Google Drive, you can make a brochure in two ways: You can either take a template from the Template Gallery and alter it, or you can create one from scratch.

### 3.3.1 Using a Google Docs Template

**Step 1:** Open Template options.

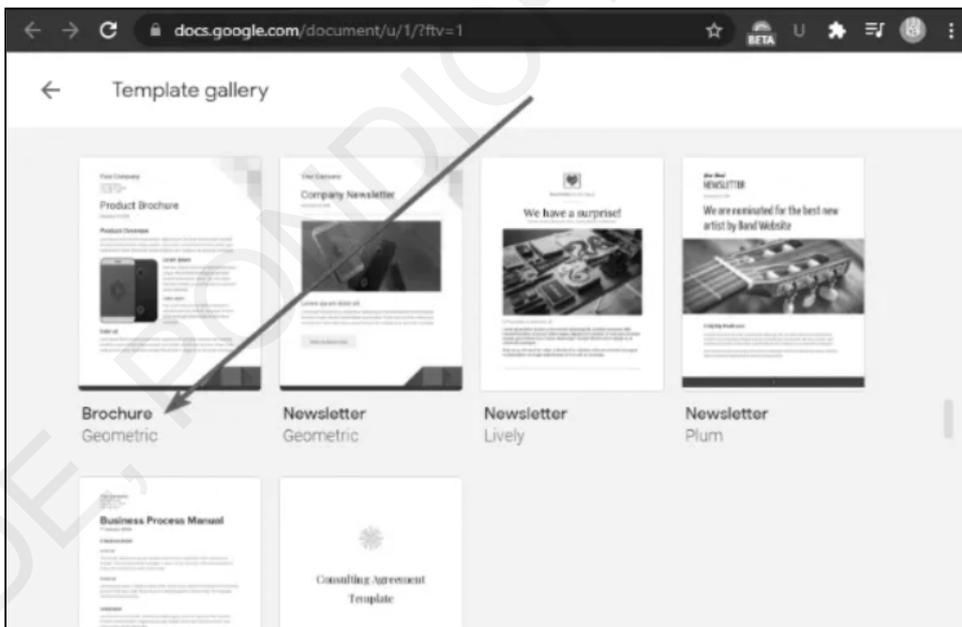
Log into Google Drive. Click “Create” and select “Document.” Select the “File” menu, point to “New” and choose “From Template.”

NOTES



**Step 2:** Search for Templates.

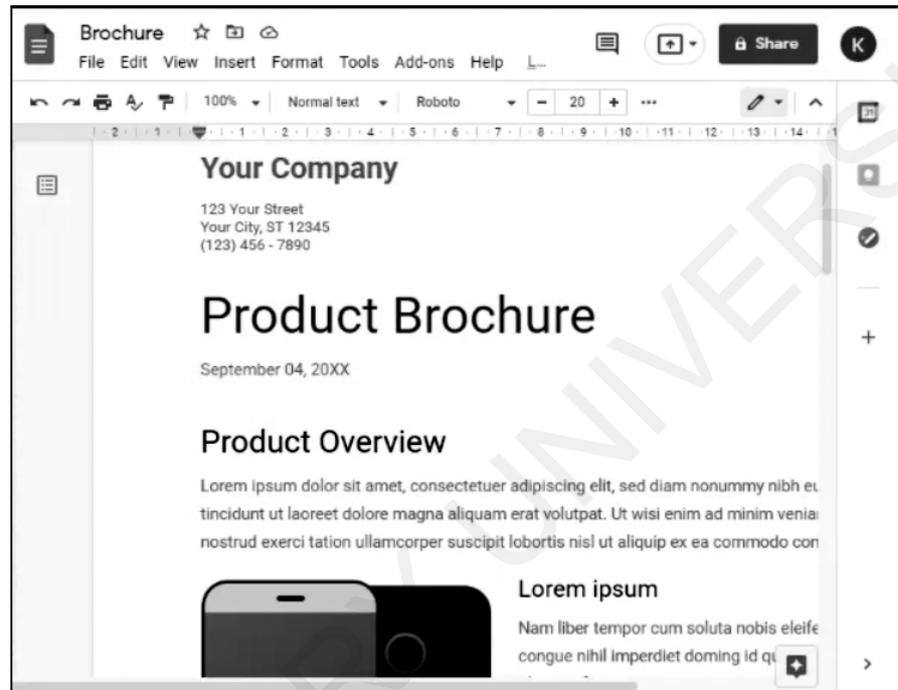
To select or search template, type “brochure” in available search box and click on “Search Templates.” We can also go to the Google Docs Template Gallery to search for a desired brochure template.



## NOTES

### Step 3: Select Template design.

Click on “Use This Template” to open selected template in a new document in Google Drive.



### Step 4: Add Customization.

Customize your template by replacing sample text with your own and inserting images or other content by selecting the “Insert” menu, choosing the object type and finding the content you wish to use.

### 3.3.2 Using a Google Docs Table

#### Step 1: Create a document.

Log into Google Drive. Click “Create” and select “Document.”

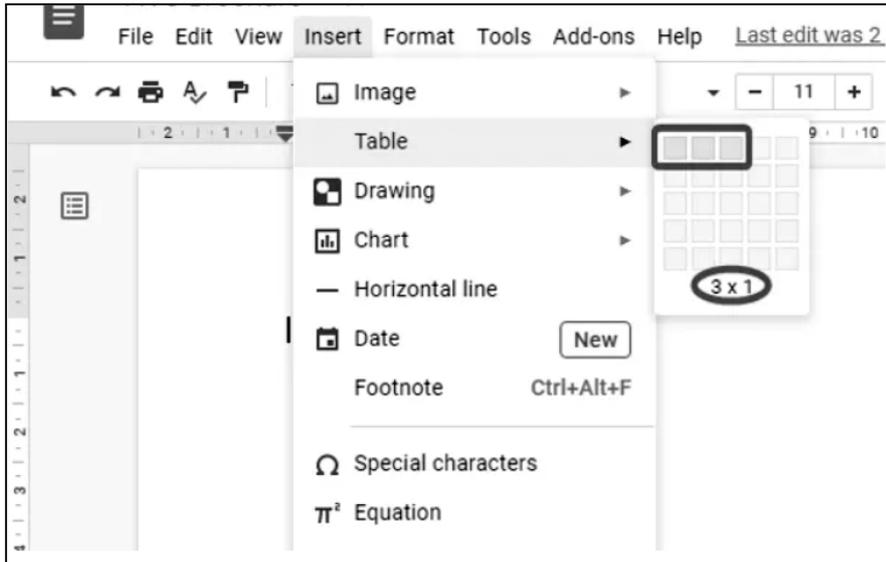
#### Step 2: Set up the Page.

Select the “File” menu and choose “Page Setup.” Choose “Landscape” and click “OK.”

#### Step 3: Insert the table.

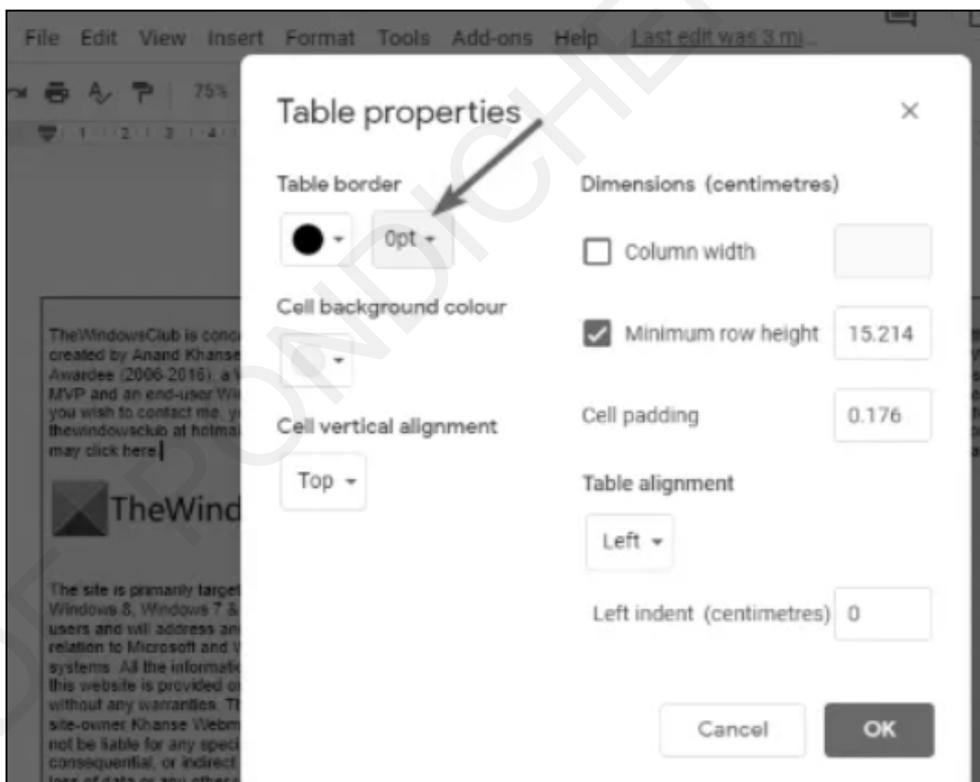
Select the “Table” menu, point to “Insert Table” and select a “3 × 1 Table.” As shown in the figure, number of rows and columns may vary as per the requirement of brochure design.

## NOTES



### Step 4: Add table content.

Fill the table cells with text, pictures, and other items. The first column will fold into the brochure's inside, the second will serve as the back cover, and the third will serve as the front cover. The left inside page will be the first column of the second page, the middle of the brochure will be the second column, and the right inside page will be the third column. Adjust the table properties from format menu to set height, width and border for columns.



## NOTES

### Check Your Progress

6. Brochure can be created using \_\_\_\_\_ option.
7. To design a brochure manually, \_\_\_\_\_ feature can be used.

## 3.4 CREATING A NEWSLETTER USING MICROSOFT WORD

A newsletter is an electronic or printed communication that contains important information or updates on a specific topic. A newsletter's purpose is to notify your customers, staff, and community about whatever information you want them to be aware of.

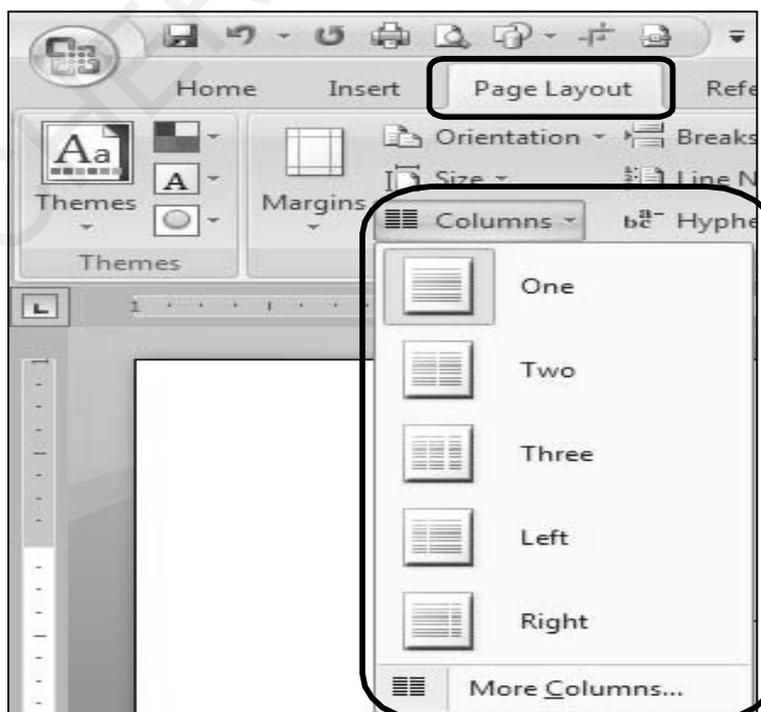
Newsletters can be created with a variety of software programmes, including publications-specific programmes such as Microsoft Publisher, Adobe PageMaker, CorelDRAW, and others. However, simple newsletters can be created in Word using some easy steps.

Creating newsletter is very much like creating brochure using Google Docs. Following steps can be used to create newsletter in MS-Word.

### Column Creation

Newsletters are generally formatted into multiple columns.

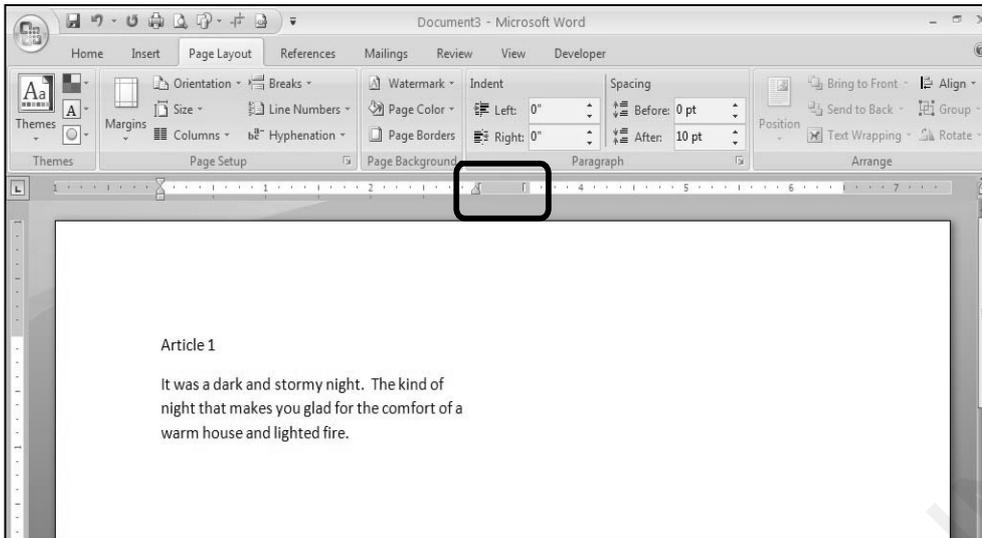
1. Select Columns from the **Page Layout** tab in Word to create **columns**.



2. Select the appropriate number of columns or **More Columns** for further options, including column widths.

3. Document is divided into columns. It will be also applied to available content in document.

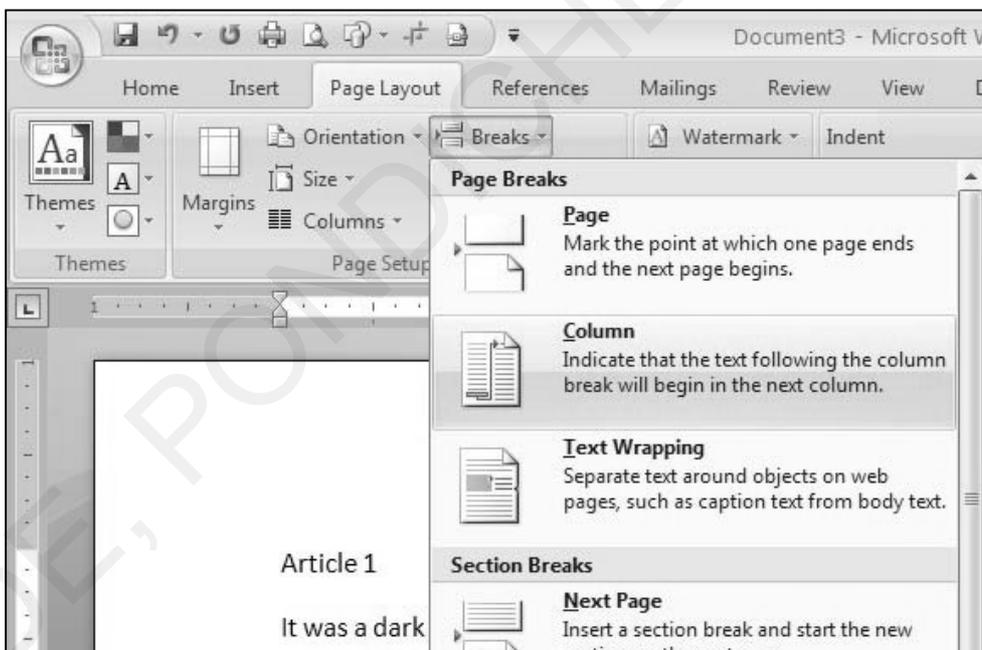
## NOTES



### Column Breaks

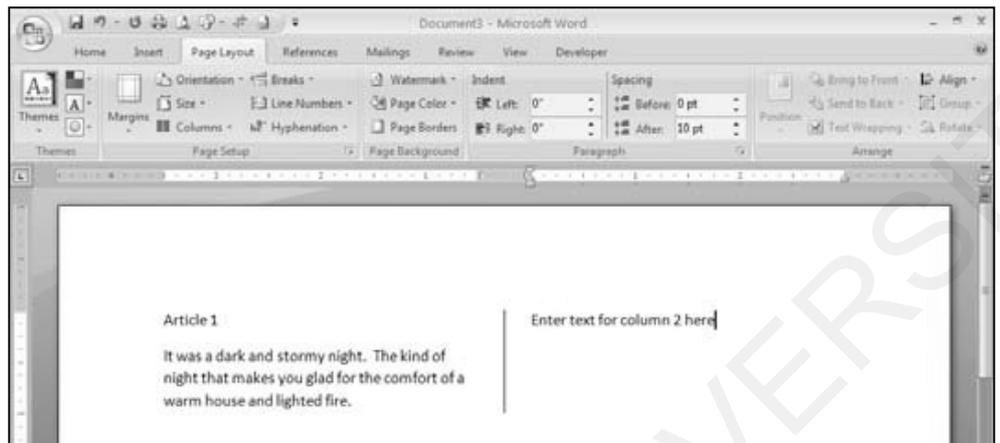
Once the first column is completely filled with text, the next part of the text will automatically wrap to the next column. If required, we may start entering text into next column before the previous column is full. In these cases, column breaks can be used.

1. Place the cursor where we would like to begin the next column.
2. From the **Page Layout** tab, select **Breaks** followed by **Column** selection.



## NOTES

3. Now, we are ready to enter the text into the next column.



### Section Breaks

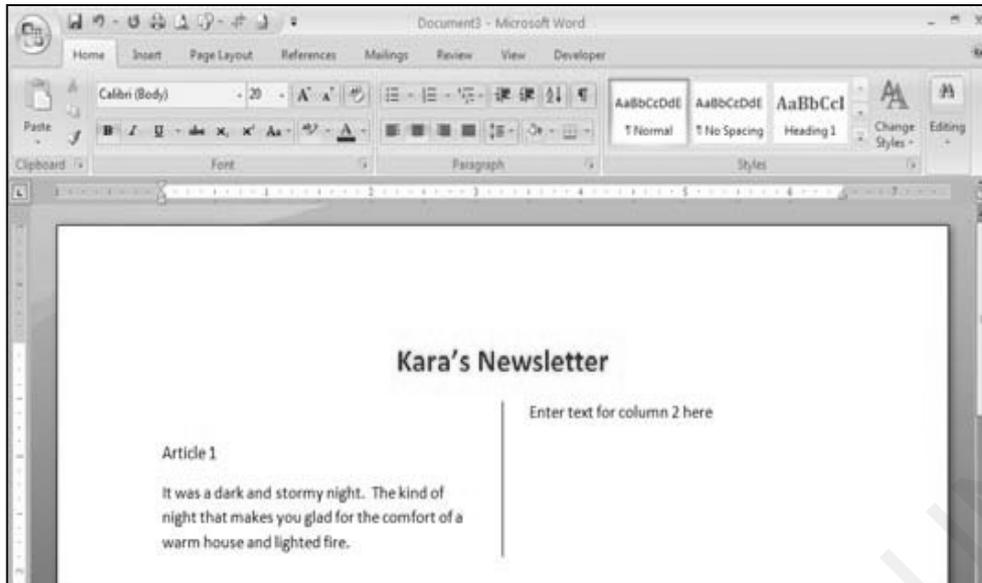
We frequently request that only particular sections of the newsletter be structured in columns. Consider a heading that is to be aligned centre over the full page in the mailing. Divide documents into sections to accomplish this. Different formatting styles may be used in each part.

1. To divide a document into multiple sections, place the cursor where you want the next section to start.
2. Select **Continuous** option in the **Section Breaks** area from the **Page Layout** tab. There are several options for producing a section break that begins on a new page. When we need to modify the page orientation or header-footer on different pages, this comes in handy.



3. We will now able to format one section without changing the format of the next section.

NOTES



4. Status bar indicates the current section we are working. **Right-click the status bar**, select **Section** option to display status borders if it is not visible.



**Page and Paragraph Borders**

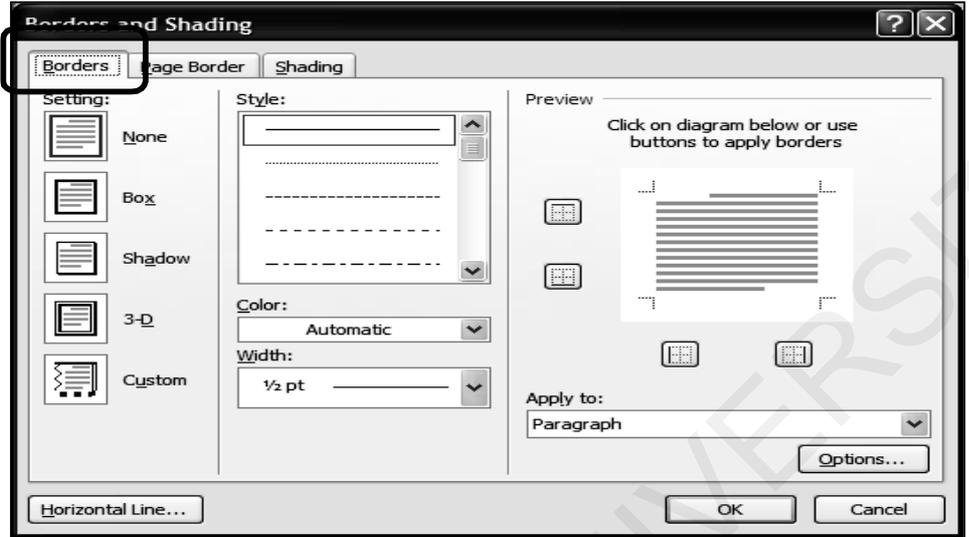
We can add Graphics around paragraph or entire page.

1. To include a page border or a paragraph border, select **Page Borders** from the Page Layout tab.

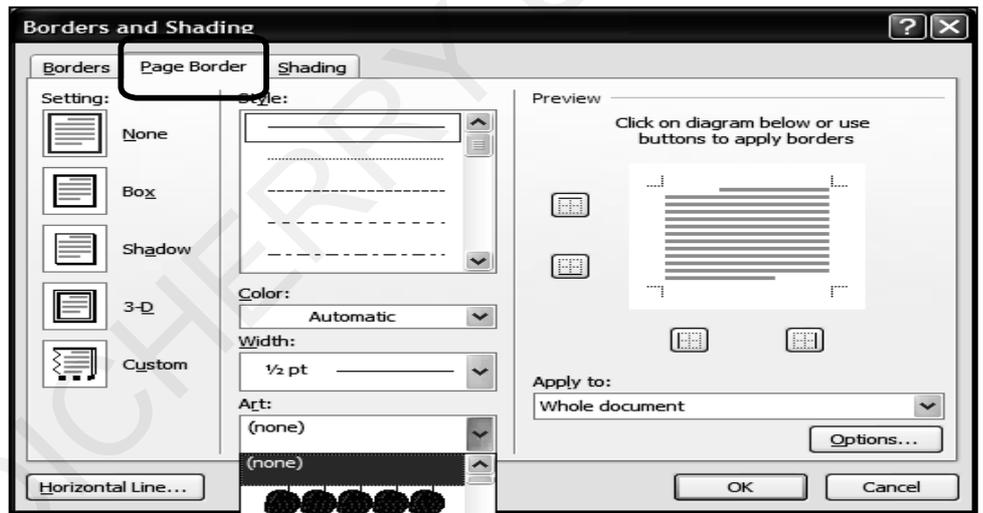


2. Click on the **Borders** option to select a paragraph border. Border have various formatting options like style, colour, width, etc.

NOTES



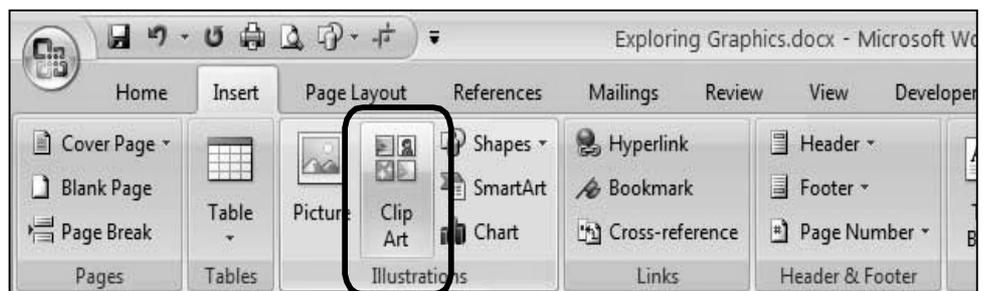
3. Click on the Page Border tab to apply a border to entire page. The Art drop-down list contains an collection of graphics that can be used as a border.



Inserting Clip Art

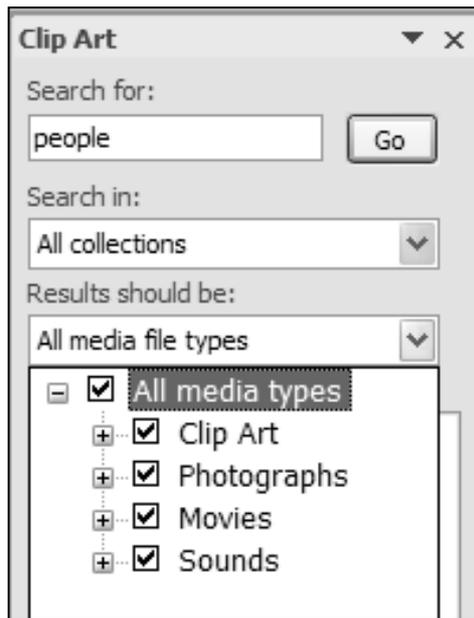
A gallery of Clip Art is available both within MS-Word. These graphics are free for use in Microsoft products.

1. Insert new Clip Art, using Insert tab. Select Clip Art under insert tab.

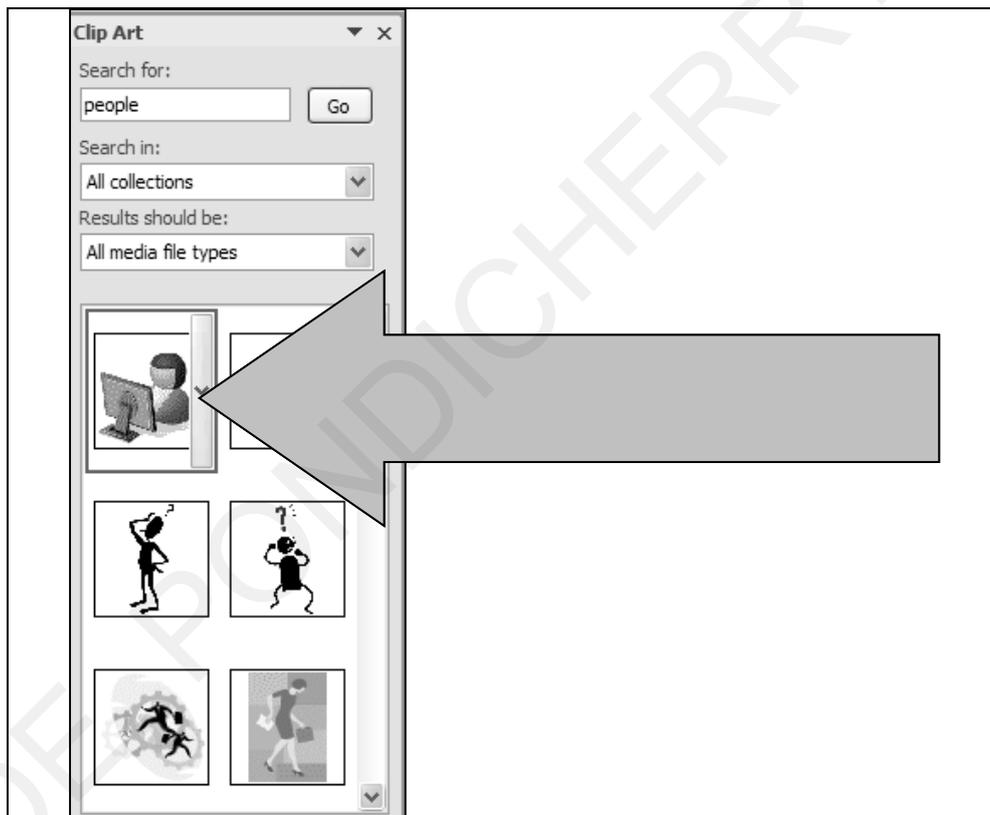


NOTES

2. It opens Clip Art pane on the right side of the screen.



To insert the graphic in Word document, select desired graphic. It will be inserted at the location of your cursor.



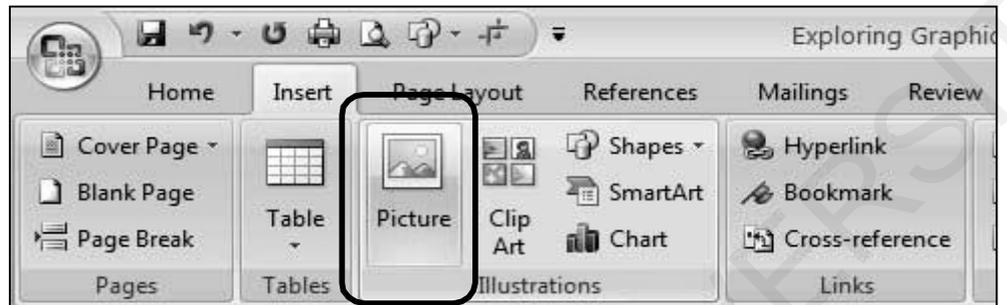
3. We can also search graphics for additional clip art if we have active internet connection. Click **Clip art on Office Online** in the Clip Art box on the right side of the window. This launches Microsoft Office Online in your browser, where you can look for more Clip Art to download.

## NOTES

### Adding Pictures

Pictures can be inserted that are available on physical device.

1. Click on Picture from insert tab.



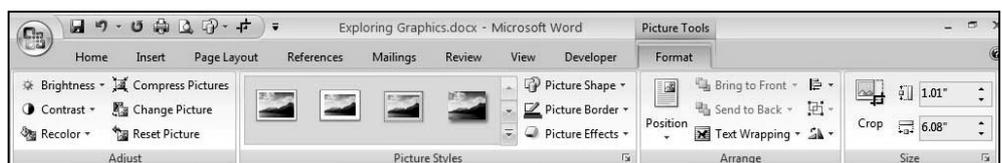
2. Browse for the location of desired picture on computer or device. Select and click Insert to include required image.



3. The picture will get added at the location of your cursor.

### Working with Graphics

Additional Picture Tools become available when graphics are selected.



1. Compress Pictures option allows to reduce the size of the image.
2. Picture Styles group provide tools for enhancing graphic with various available options.

3. Arrange group helps in placing picture at desired precise location. It allows to select how the text to be wrapped around the graphic.
4. Size group allows to crop a graphic. It also indicates its height and width.
5. Make sure the graphic is selected if the Picture Tool isn't available.
6. Microsoft Word was not created with the intention of being used as an image editor. If you need to make significant changes to a graphic, utilise dedicated image tools like Photoshop or CorelDRAW.

These are few basic settings you need to know for creating the newsletter in MS-Word.

#### Check Your Progress

8. Newsletters are mostly formatted into multiple \_\_\_\_\_.
9. \_\_\_\_\_ tab provides column option in MS-Word.
10. \_\_\_\_\_ can be added to make newsletters more attractive.

### 3.5 ANSWERS TO 'CHECK YOUR PROGRESS'

1. Word
2. Downloading
3. Share
4. Column
5. Equals
6. Template
7. Table
8. Columns
9. Page Layout
10. Graphics

### 3.6 SUMMARY

Google Documents is a free online collaborative tool that allows us to create documents or spreadsheets and work on them from the cloud. Google Cloud Storage allow to access our documents from anywhere. It allows real time collaboration. With Google Cloud-based Services, we can create and open documents and sheets. Tracking edit history is a very useful feature allows us to keep a track on updates happening in shared documents.

Google Docs and MS-Word can be used innovatively to create digital content like newsletters or brochures with few clicks.

#### NOTES

## NOTES

### 3.7 KEY TERMS

- **Google Docs:** A web-based Word processor tool provided by Google's online Drive service.
- **Google Sheets:** The Google Drive service offers a web-based spreadsheet application.
- **Version History:** Helps in tracking frequent changes to shared Google Docs or Sheets.
- **Brochure:** A promotional document designed to tell potential consumers or targeted members of the community about a company, organisation, products, or services.
- **Newsletter:** An electronic or printed document that contains critical information or updates on a topic.

### 3.8 SELF-ASSESSMENT QUESTIONS AND EXERCISES

#### Short Answer Questions

1. Illustrate the use of Google Docs.
2. Explain the utility of version history. How to use this feature?
3. Can we create newsletter with Google Docs? Explain all the steps.
5. What are the various benefits of spreadsheet?

#### Long Answer Questions

1. List and explain the different ways to create brochure.
2. Explain all the steps to create a newsletter.
3. Explain the use of table in creation of newsletter or a brochure.
4. List and explain the functions available in Google Sheet.

### 3.9 REFERENCES

1. The Ultimate Guide to Google Sheets by Zapier Team.
2. <https://spreadsheetpoint.com/google-sheets-charts-guide/>
3. Advanced Google Sheets by Nashua Public Library.
4. <https://support.google.com>

## Unit IV Understanding Learning Management System (LMS)

### Learning Objectives:

By the end of this unit, students will be able to understand:

- Learning Management System (LMS)
- Utilizing a Learning Management System (LMS) for online learning
- Online discussions and sharing of educational materials
- Feedback to/from the instructor
- Feedback to/from learner

### Structure:

- 4.1 Introduction
- 4.2 Understanding LMS
- 4.3 Advantages of Learning Management System
- 4.4 LMS Structure
- 4.5 Google Classroom
- 4.6 Utilizing a Learning Management System (LMS) for Online Learning
- 4.7 Answers to 'Check Your Progress'
- 4.8 Summary
- 4.9 Key Terms
- 4.10 Self-Assessment Questions and Exercises
- 4.11 References

### 4.1 INTRODUCTION

The term LMS is an abbreviation for the term Learning Management System. This system is basically an environment which is digital in nature. LMS is basically a technique which takes up a lot of training, grooming and management for online learning, teaching and training. LMS ensures that all the information of the learners, teachers and instructors along with the institutes have a safe identity by creating a user-friendly interface which saves details of person profile, roles, functions and even the set choices under the LMS learning. LMS is not just restricted to schools but also to various offices by the Human Resource teams and experts in the fields of innovation and development. The people who are also into training also make a choice of teaching and learning under LMS. There are various self-paced and time-

## NOTES

bound courses which facilitate learning from within the home environments, without shifting from one place to another. There are features which are created for monitoring one's skill, development and graph of progressive learning. There are severe instructor-led courses too which help in a lot of development for the individual and his learnings. The scope of e-learning is very high under the development of LMS. There are numerous ways to check the competencies and skill sets, and accordingly, make efforts to improve or grow from the learnings. LMS provides a tool just like regular learning but only in the digital mode and with a modern approach. Traditionally, the students' education was instruction-paced and led primarily by the teachers. However, in the modern world, the educators are far more patient and are willing to let students function at their own pace without any hurry of completing tasks and exams. The students are allowed to choose a time frame which is the most suitable for them rather than their most productive time slot where they can develop and memorize the matter which has been imparted by the online institution or lectures. Under LMS, learning can be done at any time and no compulsion of attending lectures on the prescribed time. The lectures given by the professor are usually recorded and students can have access to them for a lifetime. This makes the studying of missed lectures also very easy. The skill set and discipline maintained among the students in the self-paced learning environment is undoubtedly a challenge to the LMS development in the field of education, training and development of individuals. Though it can be perceived as a challenge, more and more working individuals are accepting this mode of learning as it is convenient, does not require commitment and does not require to miss out on important learning opportunities. In the end, the learner has to attempt an exam and based on his score, the student will be certified.

### DEFINITION OF LMS

A learning management system is a software application which facilitates a learner's learning. It can be defined as a software application or web-based application for organizing online learning services for students, teachers and administrators.



3

**Fig. 4.1: Meaning of LMS**

## 4.2 UNDERSTANDING LMS

### NOTES

A learning management system (LMS) is a software application used to manage educational courses, training programmes, and learning and development programmes, including their administration, documentation, tracking, reporting, and delivery. E-Learning gave birth to the LMS concept. The largest category of the learning system market is Learning Management Systems. They were created with the goal of identifying training and learning gaps through the use of analytical data and reporting. They are primarily focused on online learning delivery, but they can be used for a variety of purposes, including serving as a platform for online content, such as asynchronous and synchronous courses. In higher education, an LMS may provide classroom administration for instructor-led training or a flipped classroom. What should one look for when considering a Learning Management System? They are as follows:

#### 1. LMS should be simple and easy to function

While using LMS, individuals should have a very clean, simple and user-friendly experience with simple yet useful features such as common tasks, automated feedback, and drag-and-drop content. There are various other features which are offered by LMS which are easy to use for both learners and teachers. There are various LMS which supports the development and training as well.

#### 2. Should be accessible to all

LMS should not have restrictions on the users or on the benefits. They should be having free access to all users. The access should not be restricted to only a certain location or a type of user. LMS platforms must be easy to work with and can be used on any device. LMS works very well with laptops, desktops and even phones. LMS platforms should have accessibility to function and operate in any form of devices.

#### 3. Should sync well in all types of platforms

LMS should be a learning management system which can be operated all in single sign in. LMS should not require a separate sign in or any other setting requirements. It should be developed in such a manner that it blends and plays well with other systems like Google Drive. It should have the feature that supports various plug-and-play integration under one single sign in.

#### 4. Learning which is personalized

LMS is a platform which needs to be personalized so as to match with different students' learning needs. The LMS technique should be able to match the needs of the learners and trainers. There are various automated softwares in the LMS platform which allow users to completely personalize their learning experiences so that the various online courses can be self-paced learning.

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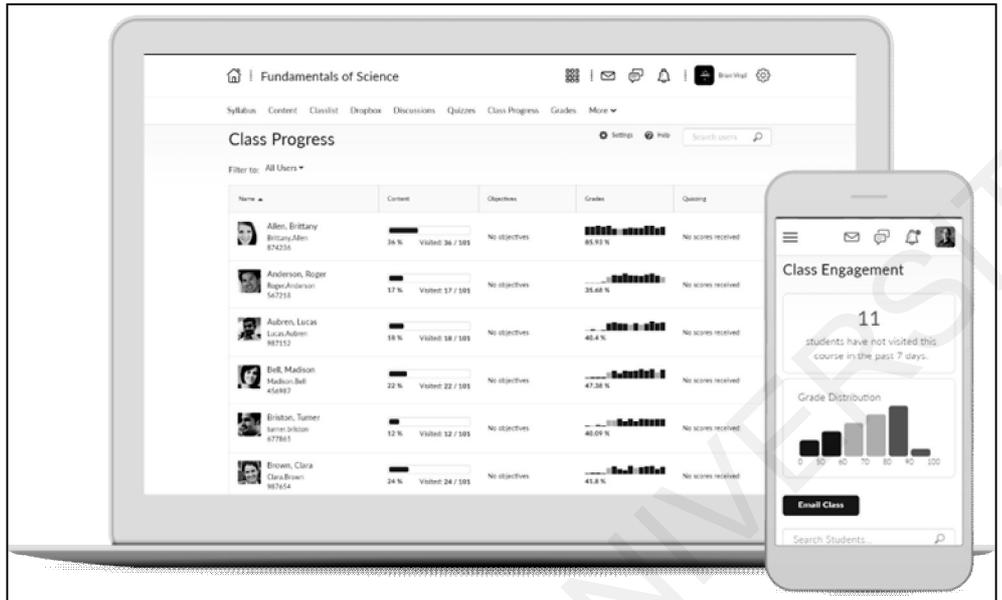


Fig. 4.2: Personalized LMS which works both in laptop and mobile

5. Must support learning which is interactive

LMS offers an array of interactive and positive learning which not only supports quick learning but also makes it very interactive which also provides them a platform to learn, execute and obtain feedback on the progress. This kind of learning supports all age groups thereby making them very positive about the learning process and experience offered by the LMS technology.

6. Supportive environment of co-learning with one another

LMS makes sure that the environment for learning takes place very positively by co-working with one another and for each other. There are many ways to support interactive learning environments like video explanation, online forums, collaborative learning, discussions and a lot more. This kind of learning which grows and promotes knowledge in each other is the main function of the LMS platform. This platform works more about bringing positive learners together, and building profiles and portfolios for each learner. The process of co-learning and sharing information with each other becomes more meaningful if the feedback is taken and worked upon. Giving the correct feedback leads to positive reinforcement in the student which helps him to improvise the learning and thereby facilitates effective performance. Feedback allows us to understand the sections which require hard work and improvement. Feedback also helps to know which way the improvement can take place bringing about a worthy 360 degree change in the learners.

7. LMS software should be secured

Since a lot of educational data, sources, citations and references are stored in any LMS platform, it becomes primary for the LMS to ensure suitable security for the users. No details of the users or their work should

## NOTES

leak in places as there is a big risk of data theft. LMS platforms should take special care in building security and must also test it several times before it goes on air. There should be complete security from the small details like search engine to big details like login IDs.

### Check Your Progress

1. Explain the features of LMS in detail.
2. Explain the meaning of LMS in detail.

## 4.3 ADVANTAGES OF LEARNING MANAGEMENT SYSTEM

Following are the major advantages of LMS:

- **Interoperability:** LMS has a structure which they follow and can be operated very well within their systems as well. The software is made in such a way that they can easily exchange and manage information between devices and login IDs.
- **Accessibility:** Learning management systems are very accessible and are also very easy to use. They are not difficult or unavailable for users. The user simply needs to type the name of the website of various LMS setups like Edmodo, Google Classroom, etc. and can make 100% use of it.
- **Reusability:** An individual can come back to any LMS setting as many times as he wants, the LMS is reliable and can be reused. If the account has been created, and for some reasons, the user is not able to continue the usage, even after a brief period of time, he can re-access the LMS.
- **Adaptability:** LMSs are major in adaptability as they constantly keep on upgrading themselves, and make changes with time and development of technology. LMS is very adaptable in nature and makes it easy for users with each passing day.

Other advantages include:

- Text, video, audio, and other forms are all supported by an LMS.
- Materials may be accessed at any time and from any location, professors can make changes to the information, and students can see the new material.
- Based on student attendance and online quizzes, grading students is simpler and more equitable.
- Students and teachers can utilise the materials again and again.
- Students can learn collectively by using the LMS software to create a School website.

### Few LMS Providers

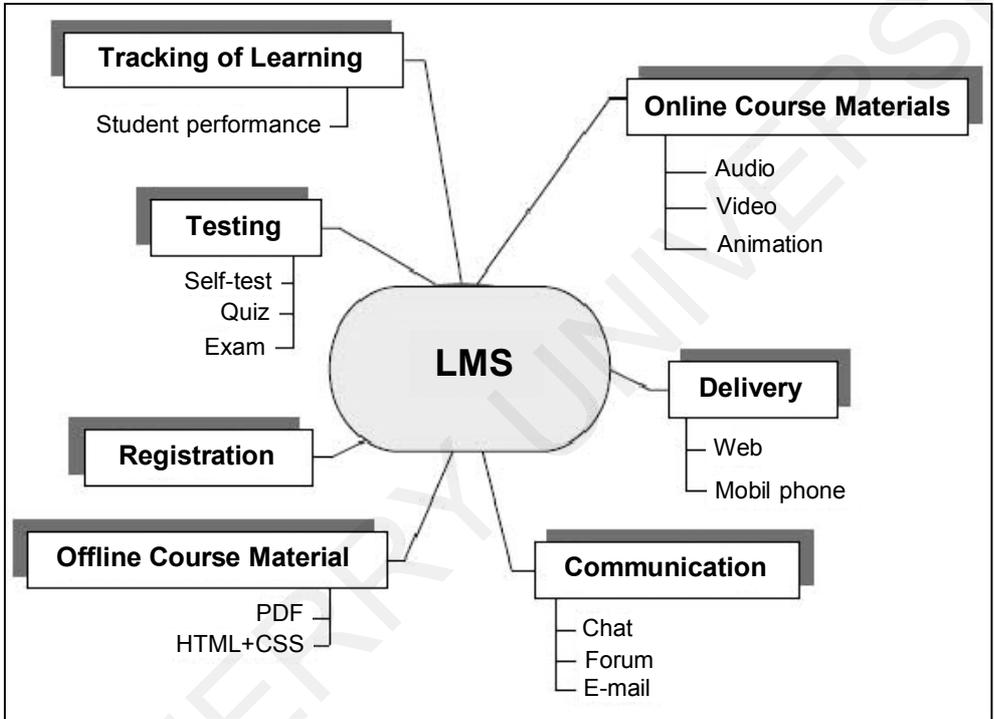
1. Google Classroom
2. Edmodo
3. Brightspace
4. iSpring Learn

NOTES

**Check Your Progress**

3. Explain the advantages of LMS in detail.
4. Explain the meaning of the feature interoperability in LMS.

**4.4 LMS STRUCTURE**



**Check Your Progress**

5. Name the offline course materials provided by LMS.
6. Name the various forms of communication in the LMS structure.

**4.5 GOOGLE CLASSROOM**

Google classroom is basically an education-based website which makes use of various social networks, sorts it and makes it very usable for a classroom. This is a great platform for teachers and students who can connect with each other by engaging in conversations which include sharing of strategies, growth ideas, and communications. Google classroom allows teachers to perform various exam-related tasks like marking grades, checking content, assigning homework and supervising the activities of students. The chances of bullying or other activities is very less as there is a lot of transparency and teachers have full access to view the actions of the students on Google classroom. This merger with technology is simply a way to bring flexibility in education which can be easily adapted by students and teachers. There are numerous options for people to use Google classroom effectively. Each teacher will use this learning management system very differently and bring on a powerful user experience. Google classroom provides a lot of ease to the user as

## **NOTES**

there is no requirement for computer labs or laptops. This can be operated even on the phone. It is a supporting tool for teachers in the process of teaching and learning. The Google classroom application or LMS is designed in a manner which makes the communication from the teacher's end very hassle-free. The system is made in a way which makes assigning of work, sharing links and sharing documents very easy for teachers. The students also get access to all the resources given by teachers in just a few steps.

Google classroom is a unique LMS technique which focuses on providing teachers, students and parents with a digital platform for sharing content, videos, homework, assignments, case studies and even lecture recordings. This is a digital space which is absolutely safe, secure and free of cost. Google classroom is available in desktop and mobile versions for Android and iOS. The steps are pretty basic, as the LMS system only requires the users to create an account without sharing very personal details. The only requirements are that of fulfilling details like name, surname, create a password and create a class code. These details remain discrete to the user alone. The entire interface is developed in such a way that it is user friendly and almost everybody can operate it without any age or experience barrier. Codes are automatically generated upon creation of the groups. The Google classroom app has been successfully supporting and contributing to digital learning.

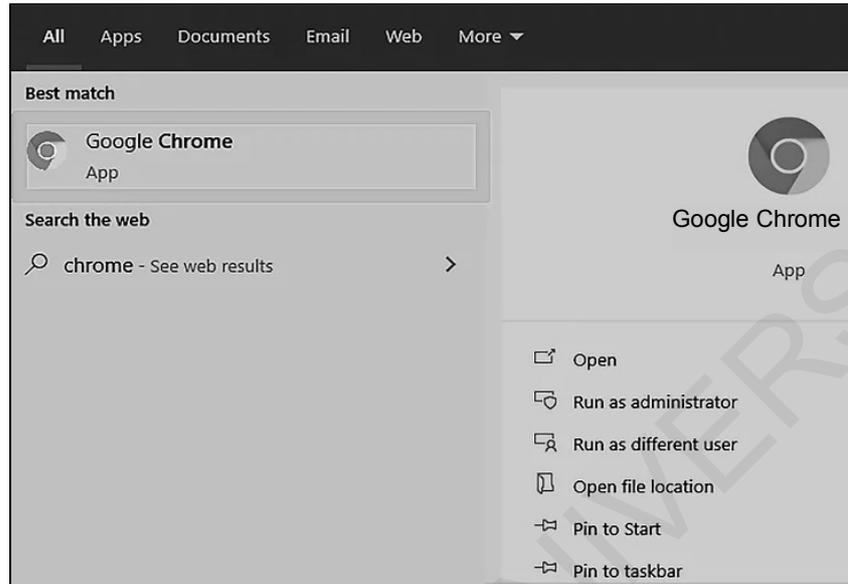
### **Google Classroom**

Google classroom is one of the best ways to keep students engaged in various activities using the digital mode. The steps to join or create a Google classroom is really very simple and all it requires are the right steps to join the classroom or create one and transform learning into interactive and developed methods. For students, the way to join Google classrooms is by logging into their google Id's and trying to join by the code provided by the teacher. In any case, if the teacher wants to use Google classroom, they can do so by sharing a link or code to students. It is also possible for teachers to interact, teach and assess on this platform very easily.

#### **Step 1: Open Google Chrome**

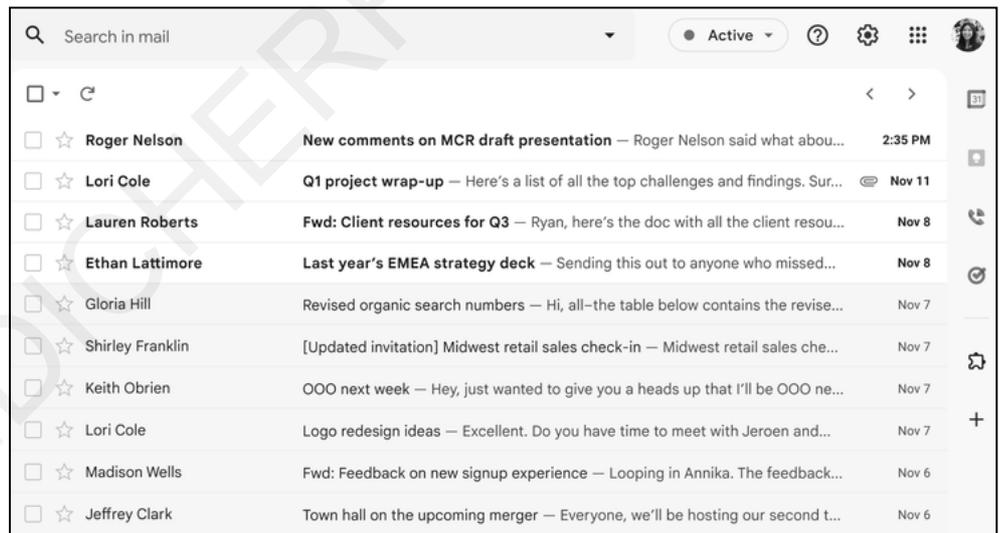
The first step for availing the benefits of Google classroom is Google Mail Id sign in. Signing in is the primary step, it is best if done with google chrome browser. Using google chrome browser is recommended as it is an official browser.

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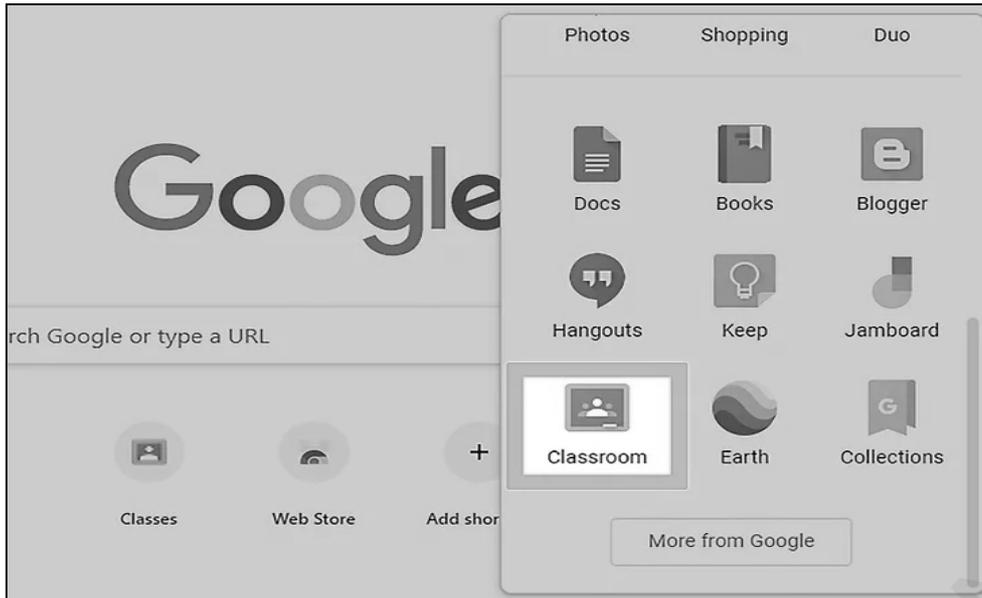
**Step 2: Home Page of Google Mail and Identification of Google Classroom**

Once you sign in, you will see a screen with the inbox open and on the extreme right you will see a small box with nine dots. Clicking on those nine dots, helps in getting access to multiple options provided by google. One of these multiple features will be Google classroom.



Upon clicking the nine dots box, the array of options will open up, from which Google classroom has to be selected. Upon selecting this, you will have a new window which will open up, directing the students and teachers to the digital classroom.

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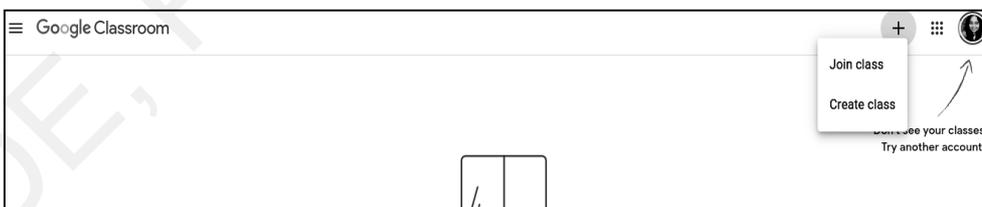


**Step 3: Join a Class or Create a Class**

Upon clicking the above icon of Google classroom or by entering [www.googleclassroom.com](http://www.googleclassroom.com) you will be in a new page.



Once you see a page like this, you are required to click on the "+" button which is on the right side and the top page of the screen. This should be used to create a class where you fill in the details like add subject, year, institute name, short description about the class and much more. Filling the title is mandatory but the other details are optional.



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**Create class**

Class name (required)  
Ms. Sprader's Class

Section

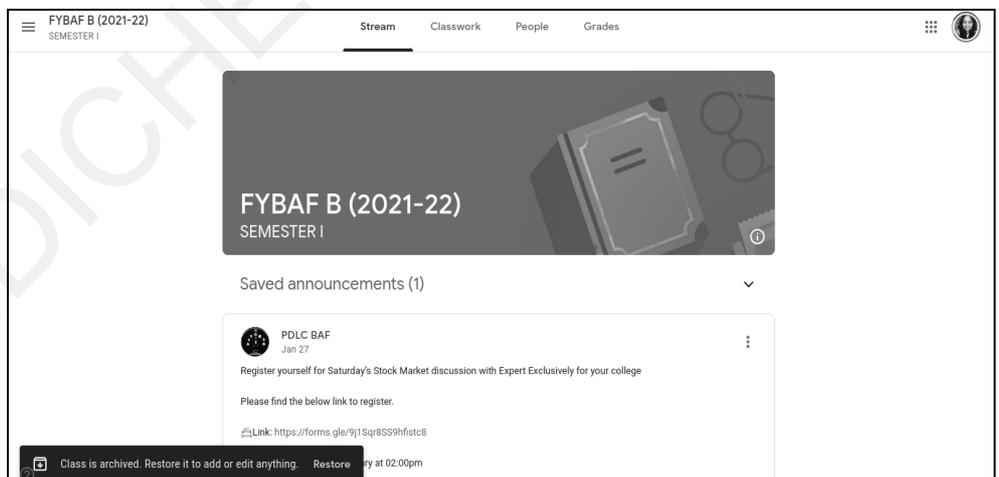
Subject **OPTIONAL INFORMATION**

Room

Cancel Create

**Step 4: Understand the home page of Google classroom**

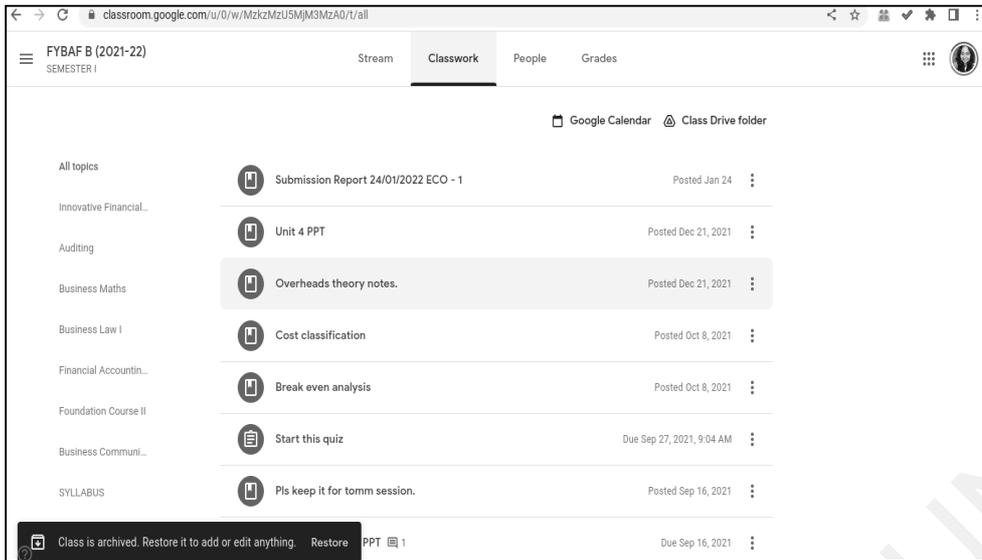
Once you create a class, there will be four primary options in the center and top portion. The four options are Stream, Classwork, People, Grades. The first section which is stream is very easy as it gives the student the general updates and the most recent update remains on the top. The opening page usually begins with a stream. Below image describes this function very clearly.



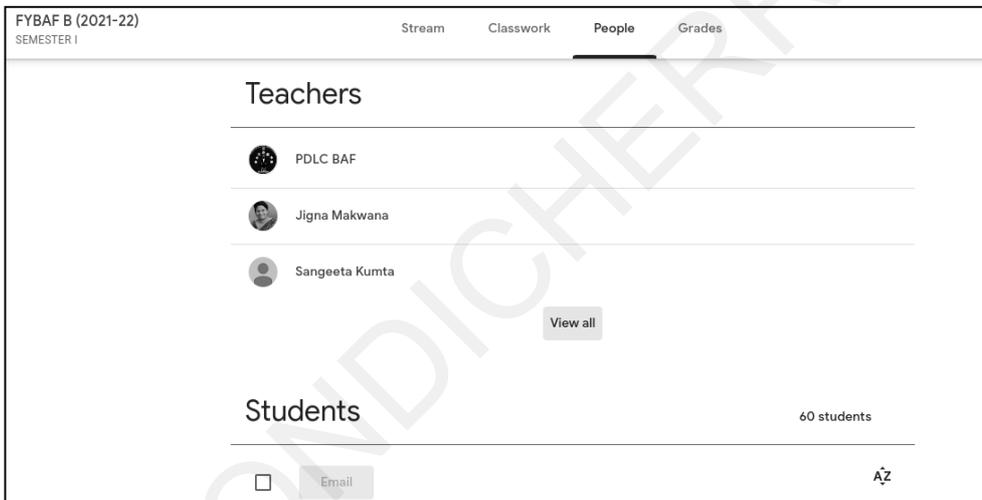
The second section is the classwork, using this feature the teachers can allot tasks, homework, references and much more with just one click. This feature allows to set time, marks and to how many classes the tasks should collectively be done with. There is a google calendar feature too which keeps a note of the tasks in students google calendar as well. This helps students to meet deadlines and have productive performances. The assignments and tasks automatically get saved in folders which helps in keeping it in records and can be referred upon whenever a need arises. Teachers can add google forms, google quiz, uploading of written tasks,

music uploads and much more. However, any kind of upload should be done in PDF form as it has no scope of changes or developments.

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The third section is 'People'. This section only shows the number of students and teachers in a Google classroom. This information is always presented with added members along with their Email Ids.



The fourth section is Grades, this is a section for evaluation, where the marks are recorded for students, the comments for improvements are also shared with the students. This section allows students to know how they have performed and what scope of improvement they can bring in their tests.

NOTES

	Jan 9, 2021 Grade 10 - Mass Media... out of 100	Nov 28, 2020 Grade 10 - Mass Media... out of 100	Nov 10, 2020 Marketing PPT...	Nov 2, 2020 FSE - MMC Question... out of 40	No due date Project submission:...	No due date Project Submission:...	No due date Project Submission:...	Oct 14, 2020 Grade 10 - Mass Media... out of 40	Aug 29, Subject Test 20... out of 20
<b>Class average</b>	68.14	71.05	N/A	29.76	N/A	N/A	N/A		13.35
010. Kanishka jain	0	27	Missing	25				___/40	12
10403_Damini Murkute	13	40	Missing	20				___/40	Missin
10514_Shreelaa Dubey	88	69	Missing	26				___/40	13
Ansh Mago	77	85	Turned in	30				___/40	12
Avanishubha Chomal	91 Done late	___/100 Done late	Turned in Done late	35		Turned in	Turned in	___/40	16
Rhoomi Gern	73	66	Missing	26			Turned in	___/40	10

The above is a grade page which comes in the fourth section. This section provides clarity, because it shows the test name, date of test taken and marks secured by each student.

These are some excellent features of Google classroom which allows us to understand how efficiently, we can transform teaching and add all digital methods to make the experience even more productive.

**Check Your Progress**

7. Explain the steps how teachers can get started with LMS – Edmodo.
8. Explain the ways in which both teachers and students can use Edmodo.

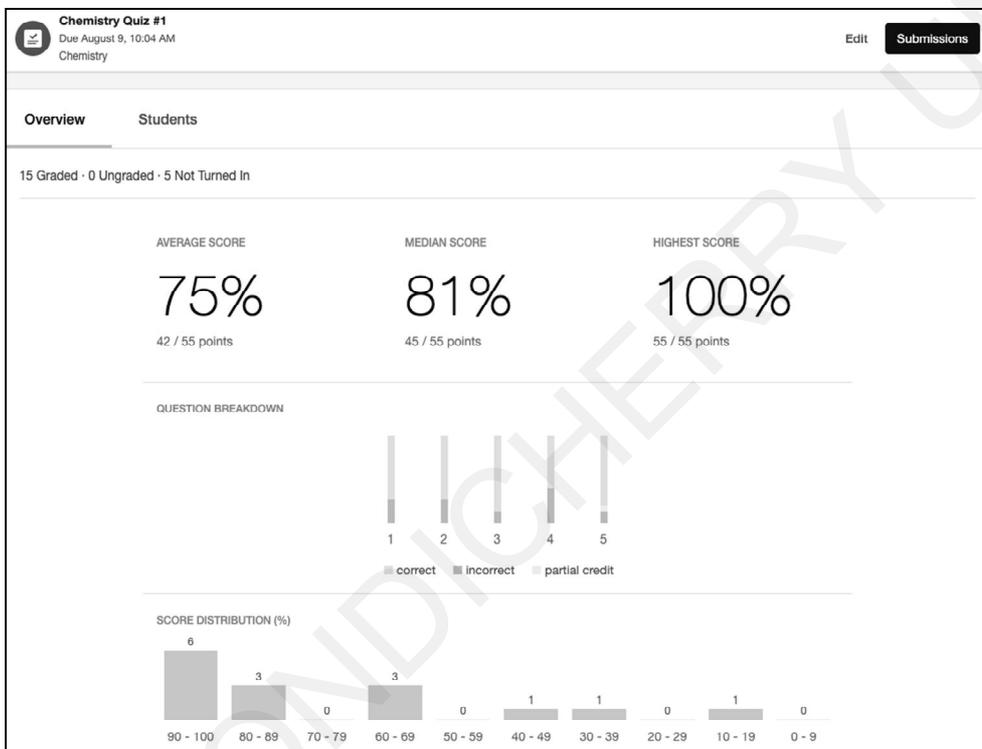
**4.6 UTILIZING A LEARNING MANAGEMENT SYSTEM (LMS) FOR ONLINE LEARNING**

LMS has indeed brought about a lot of positive change for learners and for teachers. Learning management systems make teaching and learning digital friendly. With changing times, it is the need of the hour to be well equipped with technology. Education merging with technology is a boon which very few realize. Once its potentials are unlocked, unlimited learning awaits. LMS makes teaching and tools of teaching very innovative and interesting. There are various options for learners to choose from the LMS. LMS fights all barriers which arise in online classroom setups. The work takes place in any environment and makes learning accessible despite distance, natural calamities and other unforeseen events. LMS has come up with structures which are interactive in nature and support a lot of learning and interactions. LMS provides some features in their tools which even facilitate professional training in communication and overall development. It facilitates planned online sessions, options for learners, helps in solution building, and develops a workable and impactful curriculum building. LMS leads to model discussions, support for decision-making and also motivates the students which help in creating a very positive learning atmosphere. LMS can be used even in difficult subjects like Maths and Science. This allows the teacher to save her resources and use them innovatively in every year of teaching.

NOTES

A lot of online learning can be done through LMSs. The learning management system can be very innovative and can make a lot of positive impact on the students. There is a scope for various discussions, and a lot of actions and educational materials which is helpful for students in the long run.

LMS also supports sharing of feedback from students for teachers and *vice versa*. The feedback is a value which comes from learners, allowing the receiver of the feedback to improvise, and gain more knowledge and expertise. Feedback is a very easy process under LMS as it is a button or link which is developed and makes the process of feedback to both parties very easy. The basic questions are framed and responses are recorded very quickly and smoothly. Questions like student satisfaction, understanding of concepts and rating are already framed, and the responses are shown in the form of graphs and ratings. The mechanism is framed in the manner which allows the reader to see overview as well as the individual feedback very easily.



**Check Your Progress**

- 9. How can LMS benefit online learning?
- 10. What is the full form of LMS?

**4.7 ANSWERS TO ‘CHECK YOUR PROGRESS’**

- 1. (a) LMS should be simple and easy to function.

While using LMS, individuals should have a very clean, simple and user-friendly experience with simple yet useful features such as common tasks, automated feedback, and drag-and-drop content.

**NOTES**

There are various other features offered by LMS which are easy to use for both learners and teachers. There are various LMS which support the development and training as well.

- (b) LMS should be accessible to all.

LMS should not have restrictions on the users or on the benefits. It should be having free access to all users. The access should not be restricted to only a certain location or a type of user. LMS platforms must be easy to work with and can be used on any device. It works very well with laptops, desktops and even phones. LMS platforms should have accessibility to function and operate in any form of devices.

- (c) LMS should sync well in all types of platforms.

LMS should be a learning management system which can be operated all in single sign in. It should not require a separate sign in or any other setting requirements. It should be developed in such a manner that it blends and plays well with other systems like Google Drive. It should have the feature that supports various plug-and-play integration under one single sign in.

- (d) Learning which is personalized.

LMS is a platform which needs to be personalized so as to match with different students' learning needs. The LMS technique should be able to match the needs of the learners and trainers. There are various automated softwares in the LMS platform which allow users to completely personalize their learning experiences so that the various online courses can be self-paced learning.

- (e) LMS must support learning which is interactive.

LMS offers an array of interactive and positive learning which not only supports quick learning but also makes it very interactive which also provides them a platform to learn, execute and obtain feedback on the progress. This kind of learning supports all age groups thereby making them very positive about the learning process and experience offered by the LMS technology.

- (f) Supportive environment of co-learning with one another.

LMS makes sure that the environment for learning takes place very positively by co-working with one another and for each other. There are many ways to support interactive learning environments like video explanation, online forums, collaborative learning, discussions and a lot more. This kind of learning which grows and promotes knowledge in each other is the main function of the LMS platform. This platform works more about bringing positive learners together, and building profiles and portfolios for each learner. The process of co-learning and sharing information with each other becomes more

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meaningful if the feedback is taken and worked upon. Giving the correct feedback leads to positive reinforcement in the student which helps him to improvise the learning and thereby facilitates effective performance. Feedback allows us to understand the sections which require hard work and improvement. Feedback also helps to know which way the improvement can take place bringing about a worthy 360 degree change in the learners.

- (g) LMS software should be secured.

Since a lot of educational data, sources, citations and references are stored in any LMS platform, it becomes primary for the LMS to ensure suitable security for the users. No details of the users or their work should leak in places as there is a big risk of data theft. LMS platforms should take special care in building security and must also test it several times before it goes on air. There should be complete security from the small details like search engine to big details like login IDs.

2. The term LMS is an abbreviation for the term Learning Management System. This system is basically an environment which is digital in nature. LMS is basically a technique which takes up a lot of training, grooming and management for online learning, teaching and training. LMS ensures that all the information of the learners, teachers and instructors along with the institutes have a safe identity by creating a user-friendly interface which saves details of person profile, roles, functions and even the set choices under the LMS learning. LMS is not just restricted to schools but also to various offices by the Human Resource teams and experts in the fields of innovation and development. The people who are also into training also make a choice of teaching and learning under LMS. There are various self-paced and time-bound courses which facilitate learning from within the home environments, without shifting from one place to another. There are features which are created for monitoring one's skill, development and graph of progressive learning. There are severe instructor-led courses too which help in a lot of development for the individual and his learnings. The scope of e-learning is very high under the development of LMS. There are numerous ways to check the competencies and skill sets, and accordingly, make efforts to improve or grow from the learnings. LMS provides a tool just like regular learning but only in the digital mode and with a modern approach. Traditionally, the students' education was instruction-paced and led primarily by the teachers. However, in the modern world, the educators are far more patient and are willing to let students function at their own pace without any hurry of completing tasks and exams. The students are allowed to choose a time frame which is the most suitable for them rather than their most productive time slot where they can develop and memorize the matter which has been imparted by the online institution or

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lectures. Under LMS, learning can be done at any time and no compulsion of attending lectures on the prescribed time. The lectures given by the professor are usually recorded and students can have access to them for a lifetime. This makes the studying of missed lectures also very easy. The skill set and discipline maintained among the students in the self-paced learning environment is undoubtedly a challenge to the LMS development in the field of education, training and development of individuals. Though it can be perceived as a challenge, more and more working individuals are accepting this mode of learning as it is convenient, does not require commitment and does not require to miss out on important learning opportunities. In the end, the learner has to attempt an exam and based on his score, the student will be certified.

3. Following are the major advantages of LMS:
  - **Interoperability:** LMS has a structure which they follow and can be operated very well within their systems as well. The software is made in such a way that they can easily exchange and manage information between devices and login IDs.
  - **Accessibility:** Learning management systems are very accessible and are also very easy to use. They are not difficult or unavailable for users. The user simply needs to type the name of the website of various LMS setups like Edmodo, Google classroom, etc. and can make 100% use of it.
  - **Reusability:** An individual can come back to any LMS setting as many times as he wants, the LMS is reliable and can be reused. If the account has been created, and for some reasons, the user is not able to continue the usage, even after a brief period of time, he can re-access the LMS.
  - **Adaptability:** LMSs are major in adaptability as they constantly keep on upgrading themselves, and make changes with time and development of technology. LMS is very adaptable in nature and makes it easy for users with each passing day.
4. **Interoperability:** LMS has a structure which they follow and can be operated very well within their systems as well. The software is made in such a way that they can easily exchange and manage information between devices and login IDs.
5. PDF, HTML and CMS are the offline sources of Learning Management System.
6. Chat, forums and emails are different modes of communication for Learning Management System users.
7. The **first step** for teachers to get started with Edmodo is to visit [www.edmodo.com](http://www.edmodo.com) and sign up. While you sign up, you will be asked to fill in some details which will be required to create an Edmodo account.

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This is just a few steps and then the Edmodo account will be ready. Once you go to the home page, you have to do the following:

- Click on the option which says I'm a teacher.
- Upon clicking the yellow tab, a sign up form will open up, fill it, confirm your verification email and your account will be ready.

The **second step** will be to create a group for students and share the group code with students, for them to join. You have to do the following steps:

- Click on create.
- Click on groups.
- Form the group/groups and name it.
- Send the group code to students. This will enable them to join your group and avail your teaching.

The **third step** is to change the settings of the group. As the creator of the group as teachers, there are some settings which can be changed to make the group hassle-free and professional. The steps are as follows:

- Click on account.
- Post that click on settings.
- Upon clicking settings, you can change the password, profile picture and even create some restrictions for the profile.

8. The **first step** for students to get started with Edmodo is to visit [www.edmodo.com](http://www.edmodo.com) and sign up. While you sign up, you will be asked to fill in some details which will be required to create an Edmodo account. This is just a few steps and then the Edmodo account will be ready. Once you go to the home page, you have to do the following:

- Go to your browser and type [www.edmodo.com](http://www.edmodo.com).
- Click on I'm a student.
- Upon clicking the yellow tab, a sign up form will open up, fill it, confirm your verification email and your account will be ready.

Since you will be dealing with Edmodo for your school functioning, the teachers will provide you with a group code. As soon as you input the code, you will be able to join the class and be at par with your peers.

The **second step** for a student is to merely join the class group either with the class code or URL link.

After the first two steps, it will be easier to join the class and interact with peers. Once you have joined the class, there are various options that the students can post and add information to the Edmodo classroom. The best feature of EDMODO is the ability to respond to teacher's posts very easily. This is a real-time feature which makes it different from others.

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The students have to simply click on the comment button and write down their responses. The comments will be shown below the posts itself.

9. LMS has indeed brought about a lot of positive change for learners and for teachers. Learning management systems make teaching and learning digital friendly. With changing times, it is the need of the hour to be well equipped with technology. Education merging with technology is a boon which very few realize. Once its potentials are unlocked, unlimited learning awaits. LMS makes teaching and tools of teaching very innovative and interesting. There are various options for learners to choose from the LMS. LMS fights all barriers which arise in online classroom setups. The work takes place in any environment and makes learning accessible despite distance, natural calamities and other unforeseen events. LMS has come up with structures which are interactive in nature and support a lot of learning and interactions. LMS provides some features in their tools which even facilitate professional training in communication and overall development. It facilitates planned online sessions, options for learners, helps in solution building, and develops a workable and impactful curriculum building. LMS leads to model discussions, support for decision-making and also motivates the students which help in creating a very positive learning atmosphere. LMS can be used even in difficult subjects like Maths and Science. This allows the teacher to save her resources and use them innovatively in every year of teaching.

A lot of online learning can be done through LMSs. The learning management system can be very innovative and can make a lot of positive impact on the students. There is a scope for various discussions, and a lot of actions and educational materials which is helpful for students in the long run.

LMS also supports sharing of feedback from students for teachers and *vice versa*. The feedback is a value which comes from learners, allowing the receiver of the feedback to improvise, and gain more knowledge and expertise. Feedback is a very easy process under LMS as it is a button or link which is developed and makes the process of feedback to both parties very easy. The basic questions are framed and responses are recorded very quickly and smoothly. Questions like student satisfaction, understanding of concepts and rating are already framed, and the responses are shown in the form of graphs and ratings. The mechanism is framed in the manner which allows the reader to see overview as well as the individual feedback very easily.

10. The full form of LMS is Learning Management System.

## 4.8 SUMMARY

- The learning management system is a new age digitally advanced tool which helps to ensure that learning has no barriers or hindrances.
- LMS helps to facilitate the smooth functioning of learning and exchange of information compiled with feedback which gives people a better insight on areas of improvement.
- LMS supports innovation in teaching and learning.
- LMS provides individuals with proper feedback, and also methods and techniques where improvement can take place. This brings about 360 degree improvement in the candidate who is studying under LMS technique.

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## 4.9 KEY TERMS

- **LMS:** Abbreviation for Learning Management System.
- **Online education:** Access to complete education.
- **Dashboard:** A space in an online learning management system where all progress, feedback and upcoming exams are recorded.
- **Sign Up:** To create an account with the application for a website.
- **Group Formation:** To create a group of LMS platform like Edmodo, wherein a group can be created for students by the teacher in order to assign all tasks to students at the same time.
- **Application:** A software technique which allows transformation in the digital world and its usage.
- **Class Code:** A situation in which the students can get a code to join a classroom on the LMS. Students of the same batch can be together in the class group created online.
- **URL Link:** This is an abbreviation of “Uniform Resource Locator”.

## 4.10 SELF-ASSESSMENT QUESTIONS AND EXERCISES

### Short Answer Questions

1. Explain how LMS can be great tool to utilize in the upcoming digital trends.
2. Explain the need for LMS in the future times.

### Long Answer Questions

1. Open an account in Edmodo, and give a detailed account of your experience in the LMS structure for learners to learn.

**NOTES**

## 4.11 REFERENCES

1. [https://en.wikipedia.org/wiki/Learning\\_management\\_system](https://en.wikipedia.org/wiki/Learning_management_system)
2. <https://www.openlms.net/>
3. <https://elearningindustry.com/directory/software-categories/learning-management-systems>
4. Learning Management System – Wikipedia.
5. [en.wikipedia.org](https://en.wikipedia.org)
6. <https://new.edmodo.com/>
7. <https://comparecamp.com/edmodo-review-pricing-pros-cons-features/>
8. <https://sites.google.com/site/journaloftechnologyforelt/archive/vol-6-no-3-july-sep-2016-1/3-edmodo-a-beneficial-digital-tool-for-english-language-teachers----by-lakshmi>

## Unit V Use of CMS to Writers and Content Creators

### Learning Objectives:

By the end of this unit, students will be able to understand:

- The use of Content Management System
- The functioning of Content Management System
- The meaning and functions of WordPress, Wix and Blogger
- The uses of WordPress, Wix and Blogger

### Structure:

- 5.1 Introduction
- 5.2 Content Management System: Meaning
- 5.3 How Does CMS Work?
- 5.4 Key Functions of Content Management System
- 5.5 WordPress – An Example of Content Management System
- 5.6 WIX – An Example of Content Management System
- 5.7 Blogger – Content Management System
- 5.8 Answers to ‘Check Your Progress’
- 5.9 Summary
- 5.10 Key Terms
- 5.11 Self-Assessment Questions and Exercises
- 5.12 References

## 5.1 INTRODUCTION

Before we understand the Content Management System, let us try to understand the meaning of content. Content is a piece of information on any given topic which is written in length and in a way which allows a proper series of words to be joined together to provide meaning for the readers. Someone has truly said, “A writer is someone for whom writing is more difficult than it is for other people”. It is true in many cases, a writer is required to do a lot of research to present new information in a new perspective. The writer needs to write amusing and interesting content which will make the readers understand things in a much better way than they have ever read before. Writers have been doing their job of writing and

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providing content since centuries. Each time a writer writes, he pours out all the information he has, all words he possesses and even all the research he has conducted all down in one paper. The writer works hard and makes sure his readers are satisfied with the content which has been provided by him. The writer also ensures that the information passed on to the audience is well researched and a high quality information. The writers possess the same quality even then and even today. The only difference in today's world of writers is the merger of technology with writing. People, back then, sought the support of paper and pen. Today, the writer types his information and refines it in the computer or laptop, wherever he chooses to work. The writer has to make sure that the information is well checked, published and reaches the masses. Thus, online writing is now refined with the use of Content Management System, making writing and publishing a 21st century thing. There is a huge difference between the traditional way of writing and the modern style of writing. The same stands true for the publishing of the content. The previous methods of publishing were through publishing houses and press. Whereas in the modern means, the publishing of content in the online mode is far faster and hassle-free. Publishing in CMS is a matter of just a few minutes.

## 5.2 CONTENT MANAGEMENT SYSTEM: MEANING

In the world of technology, where blogging is the new writing, Content Management System, viz., CMS plays an important role. It is simply a software which helps in creating, managing and publishing content. There is no requirement for additional technical knowledge, as CMS is based on artificial intelligence and handles most of the improvements without any external support. It helps to make sure that the content is checked, verified for plagiarism, supports smooth publishing thereby making blogging of articles a very easy process. Often, people think that coding is a necessity when it comes to content creation or content management. However, with CMS, coding knowledge is not essential. CMS is not just used for content but also document management.

Some features of CMS:

### 1. The dashboard with intuition

The best example of CMS features are from hubspot which is trained enough to micro manage all activities which are related to content creation and management of the content. The dashboard should be smart enough to check for plug-ins, threats and user activity on a minute scale. The scrutiny should also be on the performance, reliability and reviews. If we take the example of Hubspot CMS, it is well trained to manage, track and even sort the performance because of the various marketing and sales tools which are input in the dashboard.

### 2. Array of themes of different CMS

When speaking about primary features of the CMS, the different CMS offers its users various types of themes which give a different look, vibe and a message from the website content. The CMS should provide

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support for making websites more interactive by providing a drop-down navigation, the content sections which are editable, the sidebar area which is sticky and a proper layout which will make the website very impressive for the visitors. It should be well equipped with a variety of options, making it the best CMS for web experts. It should also offer an option where a creator could create or build his own choice of theme, allowing a personal touch to the website.

The below image is an example of how customized you can get with your website due to an intelligent CMS.

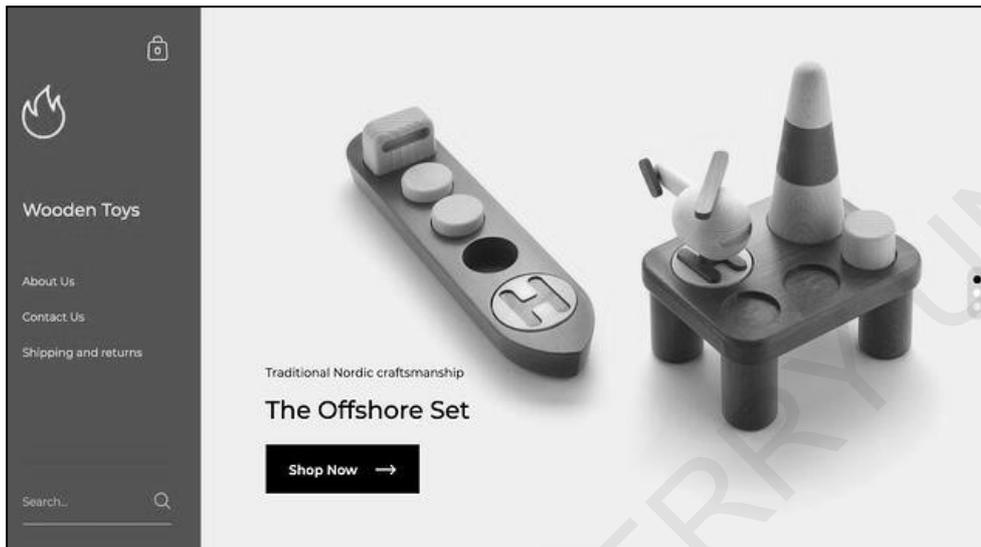


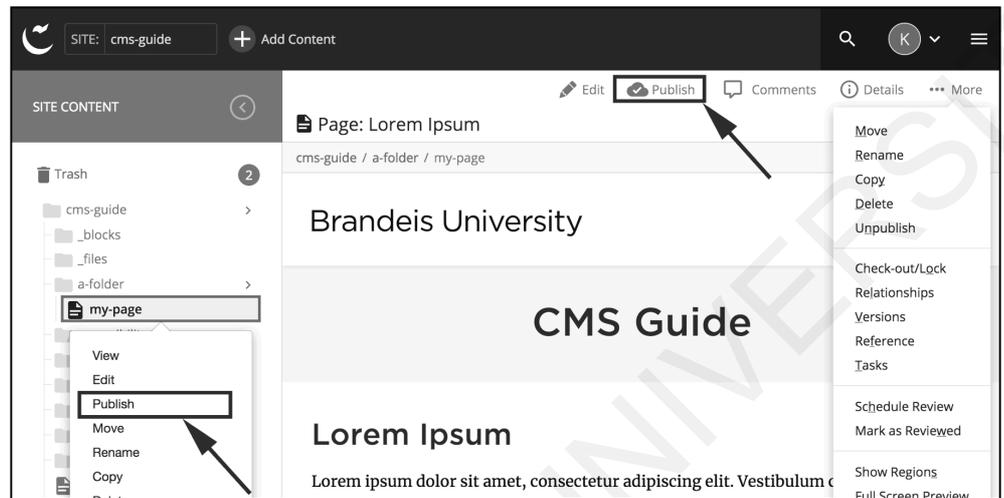
Fig. 5.1: Customized CMS website

### 3. Editing and publishing potentials

The CMS adopted by the user should be very well equipped with editing the content and the tools of publishing. The editing part of the CMS is expected to be very proficient and powerful. While editing, it is important to keep a tab on the grammar, sentence structure, choice of words, structure, punctuation and a lot more. The CMS should be able to read and identify errors from different kinds of content and make sure it is edited or corrected before proceeding to publish it. Sometimes, CMS is also well equipped with the SEO and keyword study, making the content far more polished and developed. The editing feature of CMS should also enable the users to add images, giphys, forms, links, videos, etc. CMS should make the text as interesting as it can get. Once the editing part is done, it becomes easy to publish. Most of the CMS have the option to publish the content within a single click once the editing has been taken care of. CMS also has the option to preview the content before publishing and the reason is to support proofreading before the content becomes available for the audiences to read. CMS usually develops only a two click option for publishing the content. Once the article has been published, it is very easy to track the views, likes and make an update if

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you feel the change is required. CMS also suggests trending keywords and hashtags which allow the content creator to generate maximum views through the Google Search.



**Fig. 5.2: Publish button under CMS Setup**

#### 4. CMS backups and controls

Apart from the editing, designing, preview and publishing features of the CMS, it is also made intelligent enough to hold backups and also keep manual controls of the content creators on the content which is being shared and published. The CMS usually saves each and every content written by the writer and also keeps a complete eye on the activity of the writer in relation to the content. The CMS might also suggest you to go back to the older versions and make some changes depending on the views you are receiving for the content. CMS saves the hassle of searching for information or for older versions, which thereby increases focus and reduces time wastage. Many wonder how CMS manages the backups; it is easy and automatic which is an inbuilt feature of the CMS platforms. In some CMS, there is a requirement to download the extensions for saving the backups and previous versions. But in most CMS, it is automatically taken care of. The backup services can only be done by the web host, such changes can be suggested and this setting can be installed in just a few clicks.

#### 5. The ability to create content in various languages

The feature of being multilingual is added in almost every CMS setup. This is done to make the content accessible to different people from different countries speaking and reading in different languages. The change is really quick and there is an input of several variations as well. The main language always remains English, but there are numerous ways in which the language can be changed in just a click. The feature of language switch has been a boon to many avid readers and writers who do not find English very accessible.

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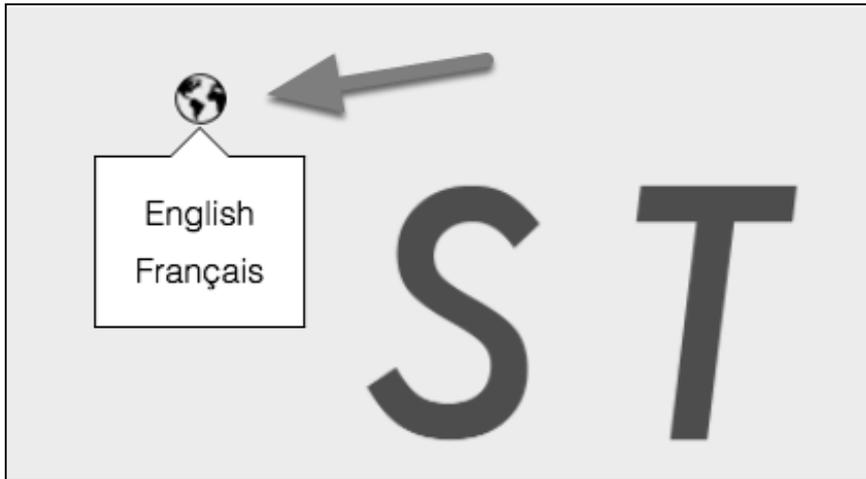


Fig. 5.3: Option of language switch

### 6. Preview and publish

One of the most central topics in CMS is publishing controls. Since the entire purpose of CMS is to support building content and publish it, there are numerous variations in the controls of publishing the content. The controls are usually accessible by editors, writers and administrators. Publishing controls have to be taken special care as the unprepared or unpolished content should not go amid the masses. CMS allows the editors to check the content, controls, views, to proofread and only then publish. For instance, the freelance content writers are not in any position to post content without the use of any controls. This only makes them appear more unprofessional and naive. In some CMS, such as the WordPress, different roles can be assigned, for instance, the role of writer, editor, creator, publisher, proofreader, etc., but that highly varies from CMS to CMS.

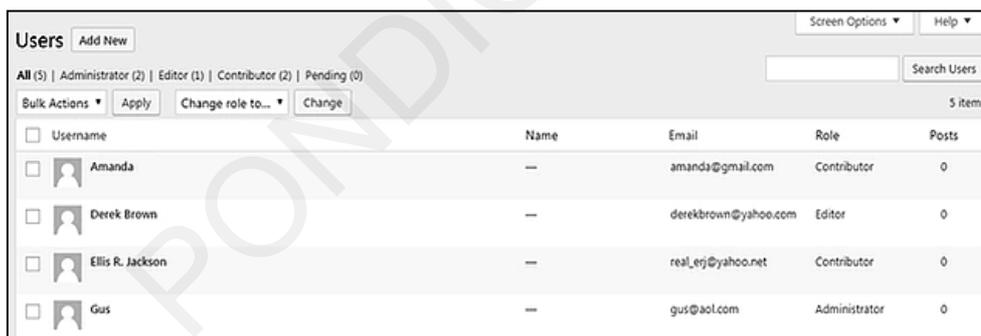


Fig. 5.4: An administrator control

### 7. Inbuilt SEO tools

Any CMS which has inbuilt CMS tools makes content editing very simple and usually shows up in the search engine. This, in turn, attracts many views. Before starting with developing content, it is important to make sure that the CMS application or website is friendly towards the use of Google Ad words, keywords and search engine optimization. The

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CMS should be in the position to have good HTML markups along with permalinks which are positive towards SEO usage. Developing content on CMS platforms which are SEO-friendly has more benefits than one can imagine. SEO helps in making sure that the articles or content is written in trending keywords making it appear on the top of the search engine. The whole effort of content writing is only then successful if it is meeting with the rising demands of various SEO features which are advanced and useful for CMS platforms. Advanced SEO features allow suggestions for content development which in turn makes it very useful and developed in the way the internet wants.

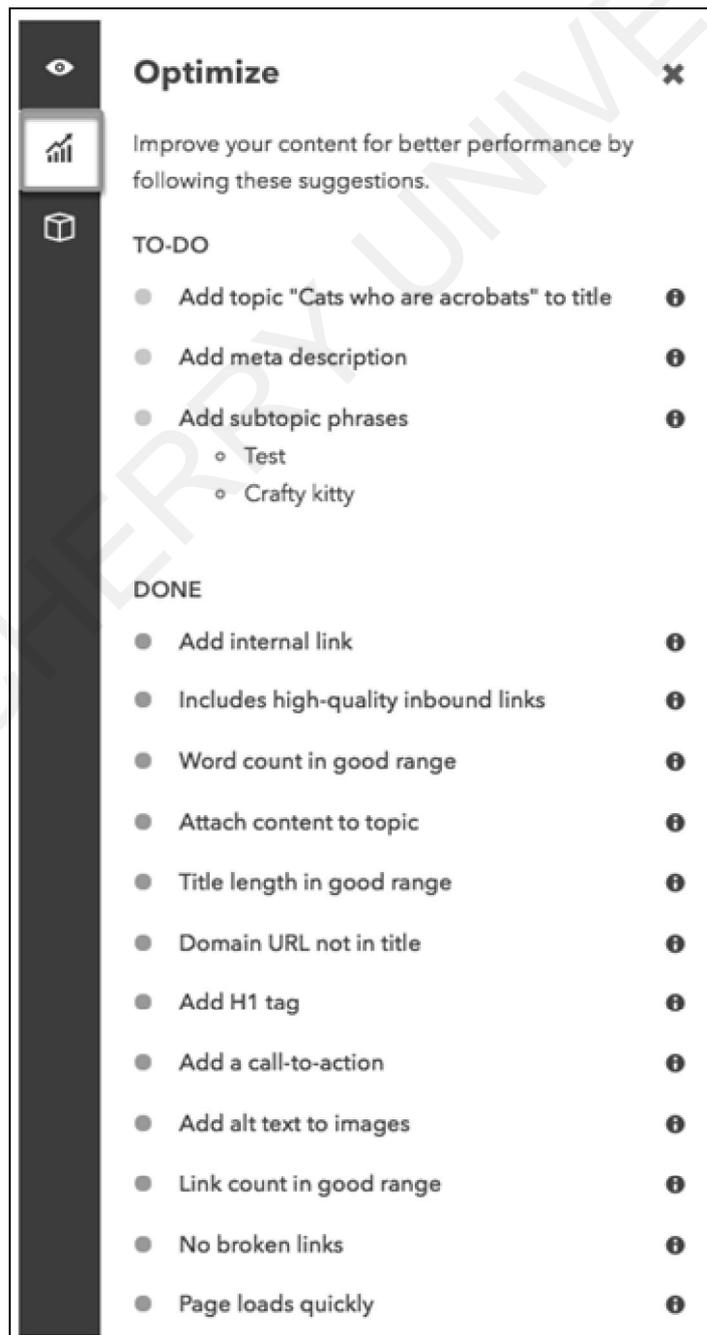
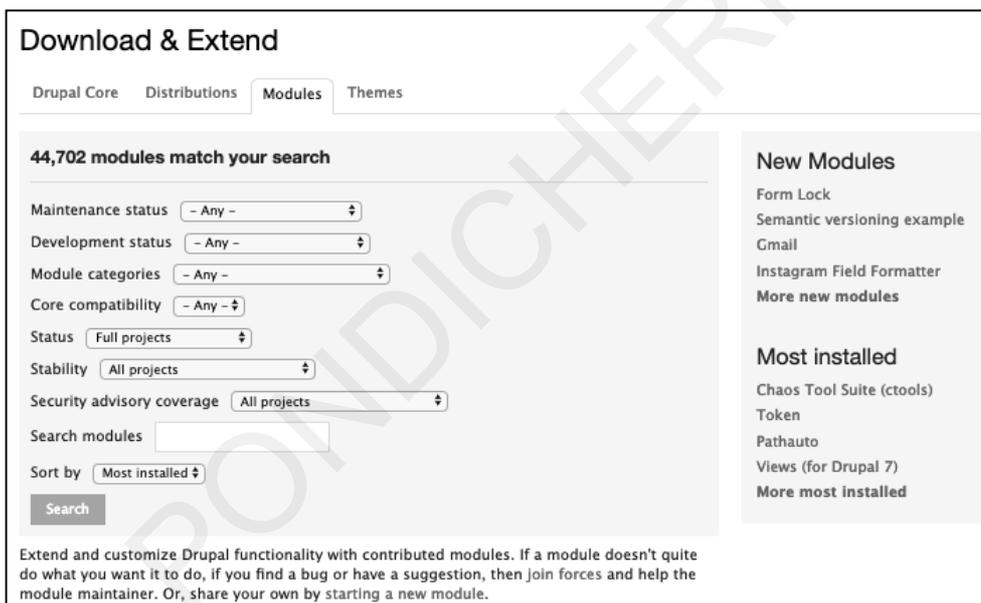


Fig. 5.5: SEO in a CMS platform

## 8. Integrations to look for with CMS

It is wrong to believe that one single CMS platform will cater to all needs of the business website. There are several CMS integrations which have to be purchased as a software to enable a smooth flow of content, SEO configuration and keyword usage. CMS is designed in a manner to smoothly transit between different applications which are required to develop the website's content, template, design, view and popularity. Some integrations worth investing in such as Social Media. These days social media is a host of several marketing and promotional activities which makes it a great way to get your content recognized and create traffic on it. Social media buttons can be added easily on the CMS which allows publishing on social media platforms at the same time. In case, you do not want to publish them at the same time, you also have the option to choose different timings for different social media in the CMS setup. Not just this, social media analytics can also be added in the CMS and these analytics provide an insight on the various actions and activities of the audience towards the content which has been published. The integrations mostly are available in the form of plug-ins or extensions which are very easy to attach with on the CRM. There are a large number of free plug-ins which users can use. However, the paid versions do not have limitations on the usage and features of the plug-in.

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The screenshot shows the 'Download & Extend' page on the Drupal website. It features a navigation bar with 'Drupal Core', 'Distributions', 'Modules', and 'Themes'. Below the navigation, it states '44,702 modules match your search'. There are several filter options: Maintenance status, Development status, Module categories, Core compatibility, Status, Stability, and Security advisory coverage. A search bar is present with a 'Search' button. On the right side, there are two sections: 'New Modules' listing 'Form Lock', 'Semantic versioning example', 'Gmail', and 'Instagram Field Formatter', and 'Most installed' listing 'Chaos Tool Suite (ctools)', 'Token', 'Pathauto', and 'Views (for Drupal 7)'. A footer note encourages users to extend and customize Drupal functionality with contributed modules.

Fig. 5.6: Module extensions

CMS often has full control over the activities of the websites and the addition of the plug-ins and extensions only make it worthwhile as accessibility to a wide reach is as small as an extension which gets added in a few seconds. There are a large number of integrations which one individual can add and remove as per his preferences. In any case, if the individual is using the free extensions, he may not have access to it if he

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removes it from the system. The paid versions definitely offer unlimited features and functionality, and paying for these extensions are usually recommended.

### 9. Provision of analytics

When developing content, analytics are very important. The analytics provide an insight on the views, statistics, reach and search of the published article. Each piece of content is required to be specific so that it attracts views and refines the content search engine. Analytics helps to minutely monitor the performance of the published article which is indicated right at the dashboard at the preferred choice of CMS. The writer need not go to another platform or have separate accounts to check the movements. It is all available at the CMS platform in the very start which is known as dashboard. Many CMS are built in a manner which requires them to set up an additional plug-in denoting analytics which makes the tracking and the study more smooth and handy. However, this completely differs from CMS to CMS.



Fig. 5.7: Google Analytics Plug-in/Extension

### 10. Ready-made pamphlets

The advanced CMS offers a huge option when it comes to providing templates for its users. There are various ready-made templates available which are generally designed for all kinds of users. Common business templates are offered for free and there are options to customize the ready-made templates as well. These ready templates are very handy and help in saving a lot of time for users. The templates are very important as they should match the theme of the business as well. For instance, if you are into copper business, you cannot use a template which is meant for hospitals. Hence, the search for templates is a very daunting and yet a very important task. These pre-made templates are a one-page theme which can be used, edited and customized as per the needs of the businesses. There are also some extra templates which are available for landing pages, emailers and websites on the whole. However, in spite of all these inbuilt templates, variations and features, there can be a

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possibility that the businesses choice of template may not be found. So, there are features which allow you to start from scratch and create your own templates with proper text box, colour choices and theme creation option. This is for those, who want to do something out of the box. CMS offers this for creative minds too.

### 11. Staging of content

Once the website goes on air, they are likely to further change and develop which is an ongoing process to meet other people's needs and matching business trends. The changes might appear unexplained for, and the content writer and CMS applications should be able to make these changes as quickly as possible. These changes are usually done for an enhanced visitor experience which can be done only through CMS. In an ideal situation, these changes should be tested before publishing the final article. However, most of the time, changes occur untimely and trends change quicker than most of us realize. Hence, in order to keep abreast with the changes, the content staging takes place on and off.

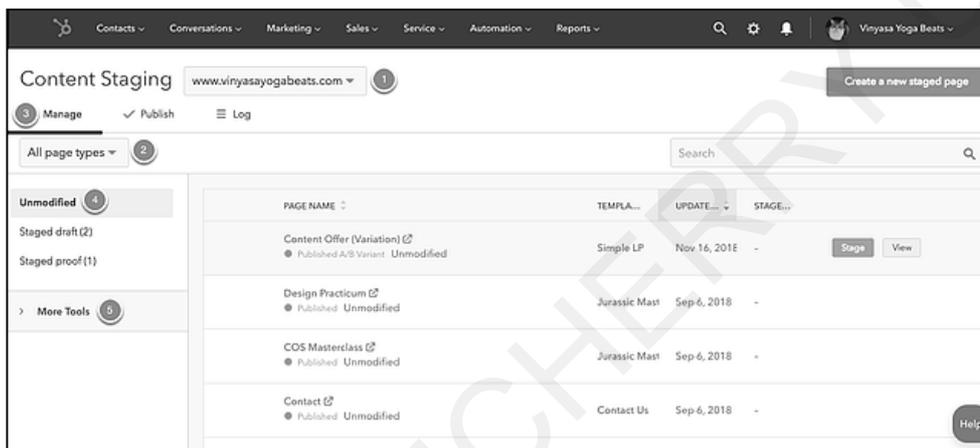


Fig. 5.8: Content staging



Fig. 5.9: CMS and the multipurpose use of Content Management System

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### 5.3 HOW DOES CMS WORK?

Content Management System is basically an arrangement of coding which allows people to upload typed content in a similar format of Microsoft Word. In blogging websites like WordPress, the interface looks very much like Microsoft Word with minor changes here and there. Internet offers multiple blogging options like WordPress, Blogspot, writerscafe.com, etc. which all function under the wing of Content Management System. CMS is required to make all this accessible to writers, content publishers and bloggers. With the help of this kind of software setup, blogging becomes more comfortable and easier to write, post and publish. CMS has made content management and publishing positively comfortable and reliable.

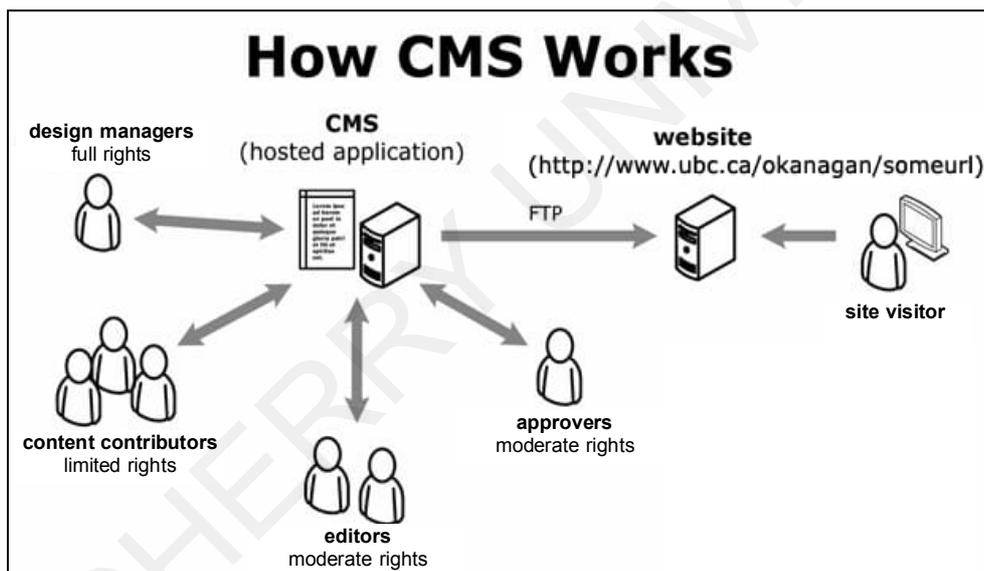


Fig. 5.10: Various functions performed by CMS

#### Check Your Progress

1. What is the full form of CMS?
2. What is the meaning and purpose of CMS?

### 5.4 KEY FUNCTIONS OF CONTENT MANAGEMENT SYSTEM

There are seven major functions of the content management system as it has a big role to play in today's blogging and digital transformation. The Content Management System allows us to do various activities under one platform.

#### 1. Content creation and content editing

The CMS allows us to use the information and convert it into a comfortable content which can be edited and published on the world wide web. The CMS is very easy to use, and it is very helpful for bloggers and virtual writers.

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**2. Content organization**

We will all agree that the internet is the sea of information. Upon searching one thing, one has to swim through various pages which leads to an overload of information. However, CMS helps to organize and filter the necessary content. It identifies the important information from the bulk information which leads to a more systematic approach.

**3. User- and role-based information**

The use of CMS can be customized as per the need and convenience of the user. The customization in the CMS can be done in a way that can suit the user's pattern of working. The information can be handled in any manner which suits the user's information as per the requirements of the web page or website or blog.

**4. Security**

CMS is also a very secure software which makes sure that the data one has worked on is done very effectively and efficiently, and is safeguarded. This is done to ensure that people working on the website using CMS are stress-free. Only based on this security, CMS is becoming a popular tool for many people and the data gets completely secured. It has a strong security measure like a proper strong authentication mechanism to prevent any kind of data loss.

**5. Multilingual content potential**

Digital Marketing allows people from all backgrounds. So, it enables them to have a global coverage. The CMS is enabled to come up with abilities to read any language and filter out only the essentials. Sometimes, there are some CMS systems which have information governance controls which comply with the location of the user.

**6. Personalization of CMS and analytics**

Since we all know the truth, each day, we are going one step further to the digital world. The CMS has the ability to collect and process information in real time which allows the customers to understand which factor they would like to filter or they would like to use. It is very digitally upgraded.

**7. Content integration**

The Content Management System helps in developing online strategies for e-commerce and digital marketing. There are various features to cater to content integration. The assembling of right information and knowing what has to be done is very important and CMS takes care of exactly this.

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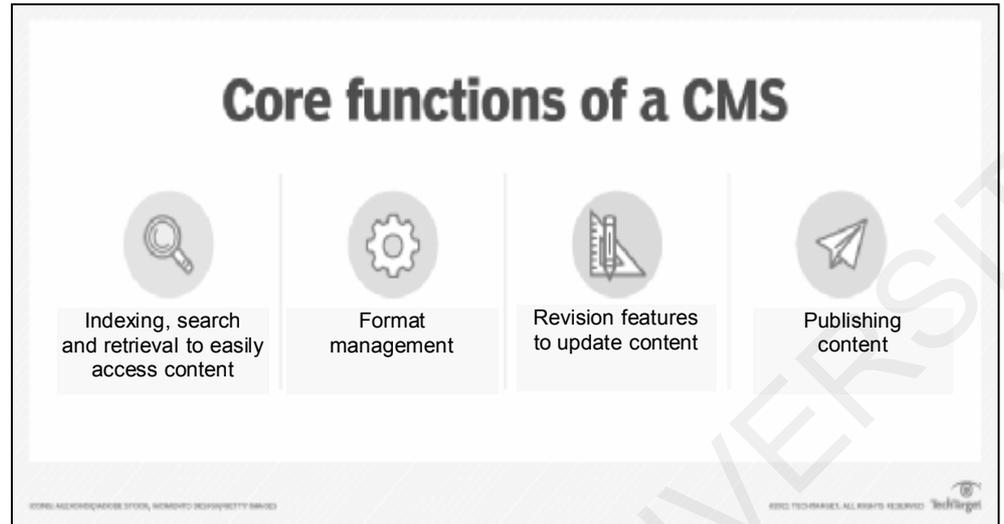


Fig. 5.11: Core functions of CMS

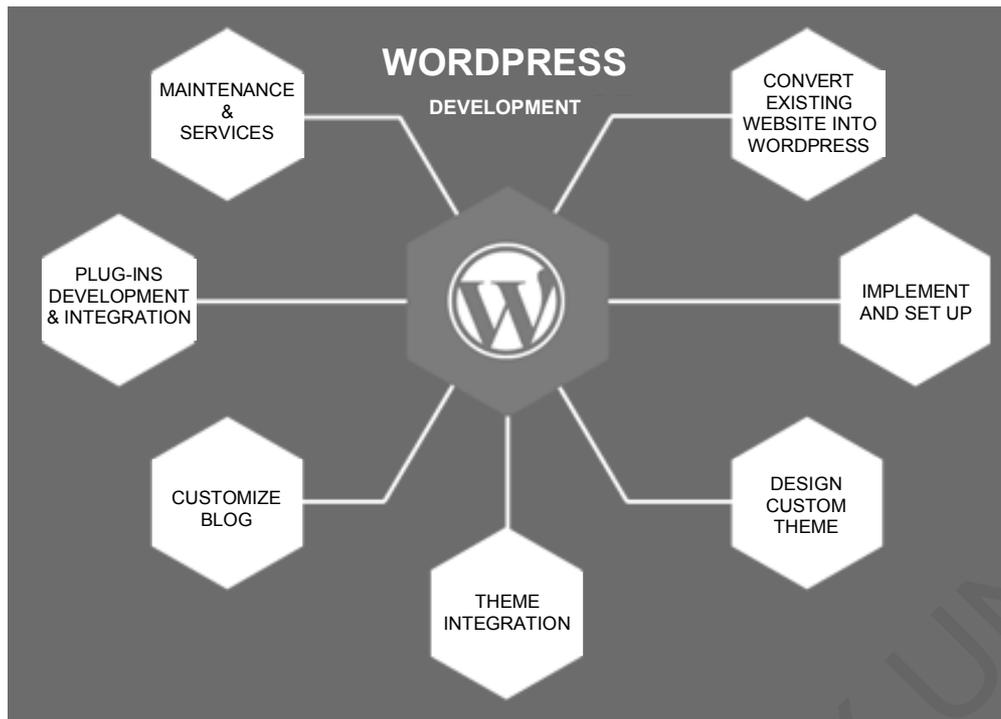
**Check Your Progress:**

3. What are the functions of CMS?
4. How is the function of organization used in CMS?

## 5.5 WORDPRESS – AN EXAMPLE OF CONTENT MANAGEMENT SYSTEM

WordPress is an excellent example of a Content Management System. It is the most popular too. The WordPress is a developed stage of CMS and it excellently shows the functionality of CMS. WordPress allows you to create a website, a domain name and also provides a platform which supports the formatting of the content. The WordPress CMS gives people a very comfortable format for its users which helps people to use it without any stress. All features are already imbued in the WordPress. Users have the opportunity to engage in a very friendly interface which supports easy formation of website and domain ID. WordPress allows users to use the platform and engage in several creative activities which it provides. Many people can even see, comment and share suggestions in the platform which makes it very interesting as well as fun to use WordPress. WordPress is an open source CMS platform. The CMS is so smooth because it helps even the non-technical users to use it without any problem or hesitation. The customization is very easily supported in WordPress. The CMS Platform enables your content to be visible to a large number of audiences as publishing is taken care of by the CMS platform itself. WordPress also gives opportunities to make sure the content is properly managed, published and even set up for views. They also enable people interactions which make it very easy to manage and understand the process of CMS positively.

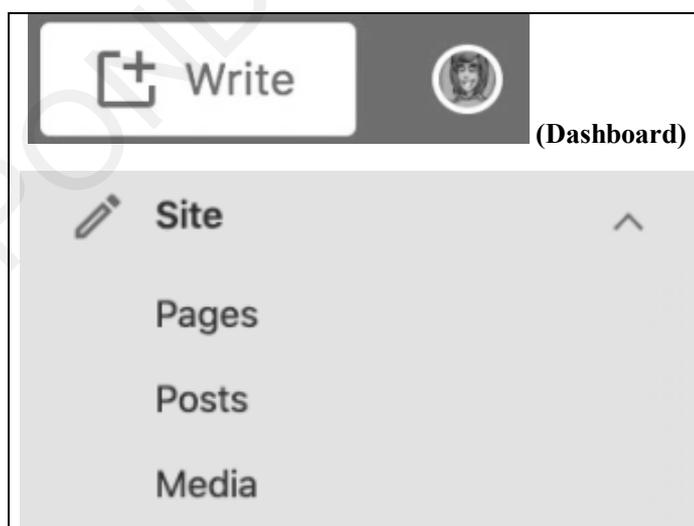
## NOTES



**Fig. 5.12: Functions of WordPress**

The process of publishing content on WordPress are as follows:

- Log in with WordPress ID
- Click on dashboard option
- Click on posts
- You will see option of “Add New”
- Insert post title and text
- Preview your content
- Once ready, click on the publish button.



**Fig. 5.13: Clicking the Write option in WordPress. The tab Write is shown here.**

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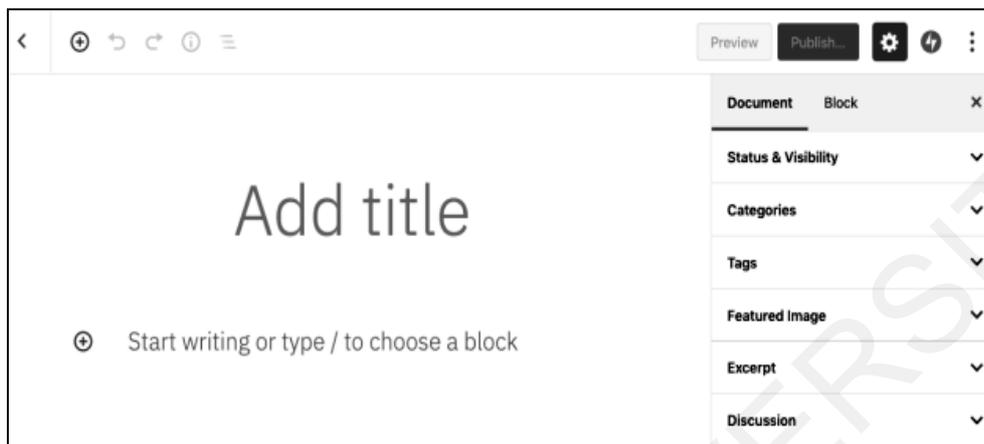


Fig. 5.14: Adding a title on the content board selected by the content writer. This tab will be shown on the extreme top.

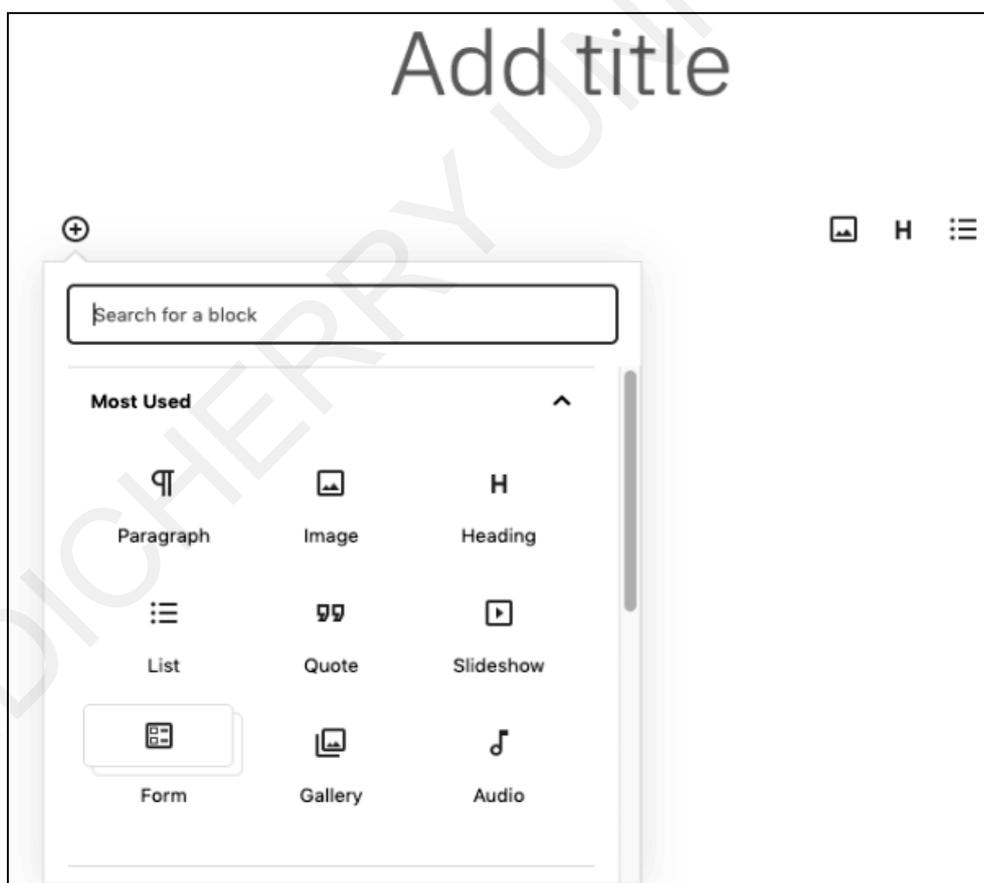


Fig. 5.15: Search option under the add title for the content board to make it more innovative and impactful. Writers can add various visual elements to make the article interesting.

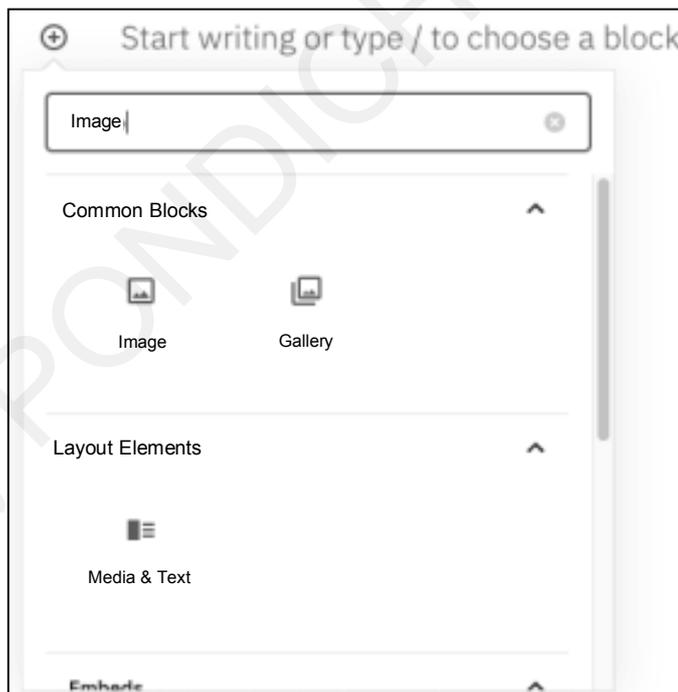
## NOTES



**Fig. 5.16: Various editing tools at wordpress.com**

Not just this, the process of publishing images with content on wordpress.com is also very easy. The steps are as follows:

- Click on + to add image.
- From the block option, select image.
- Go to block settings and select what size and text you want for your image.
- Choose image size and alternative text.
- You can click on image and decide which size and position of your image you want.



**Fig. 5.17: Choosing a block to support the content which has to be written.**

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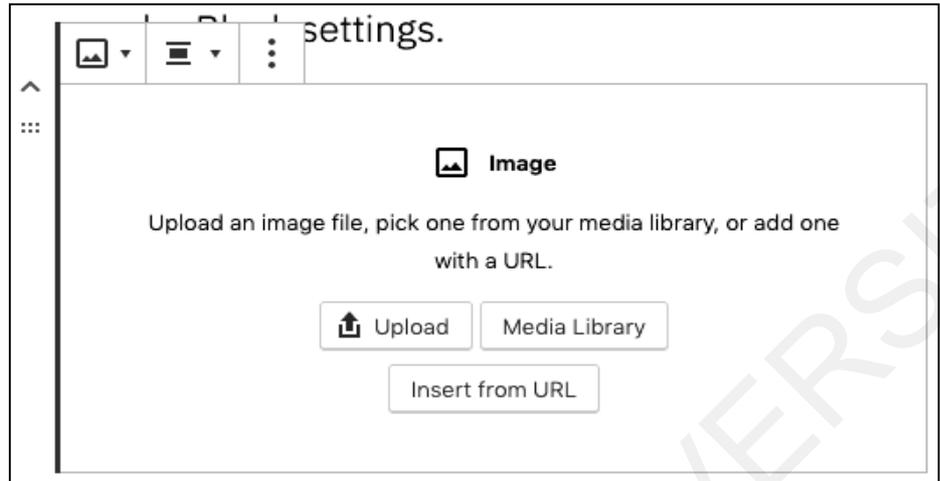


Fig. 5.18: Setting option for uploading a image file along with a typed content.

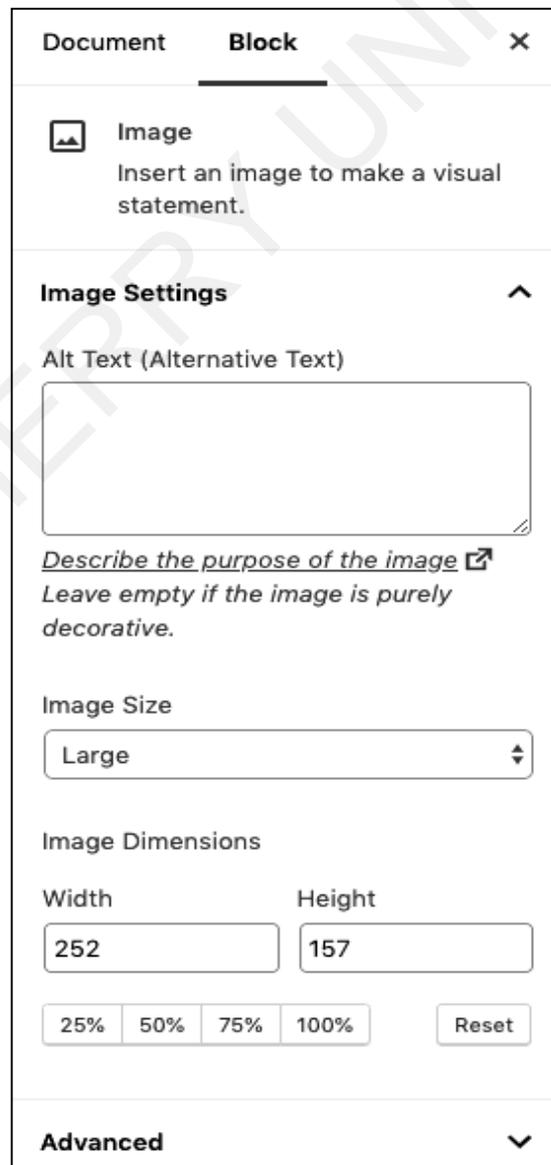
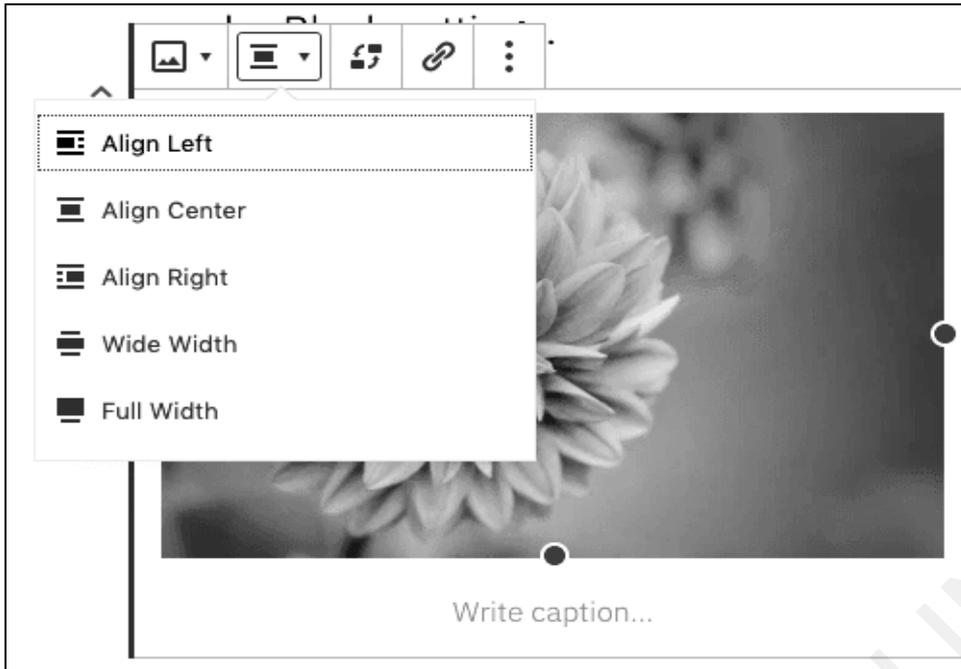


Fig. 5.19: Setting which is used to describe the photo which will be uploaded in the content.

## NOTES



**Fig. 5.20: Settings for the photo which is uploaded with the content on wordpress.com**

## 5.6 WIX – AN EXAMPLE OF CONTENT MANAGEMENT SYSTEM

WIX is a very popular tool for publishing websites. This is a website building platform which works in a modern way and works quite differently from the other Content Management System platforms. Wix has a method where CMS is used after enabling a connection to the external database. It is a unique method of CMS and works at par with other CMS. WIX provides around 800 + designs for the users to design and generate content. They have various features which make web designing and website building a very easy process and also very innovative and interactive. WIX can be downloaded as an application too on the smartphone which enables CMS system on application as well. The process is very simple.

There are three options for publishing blog posts which can be accessed from the system and also from the phone application. All three methods will be explained to you step by step.

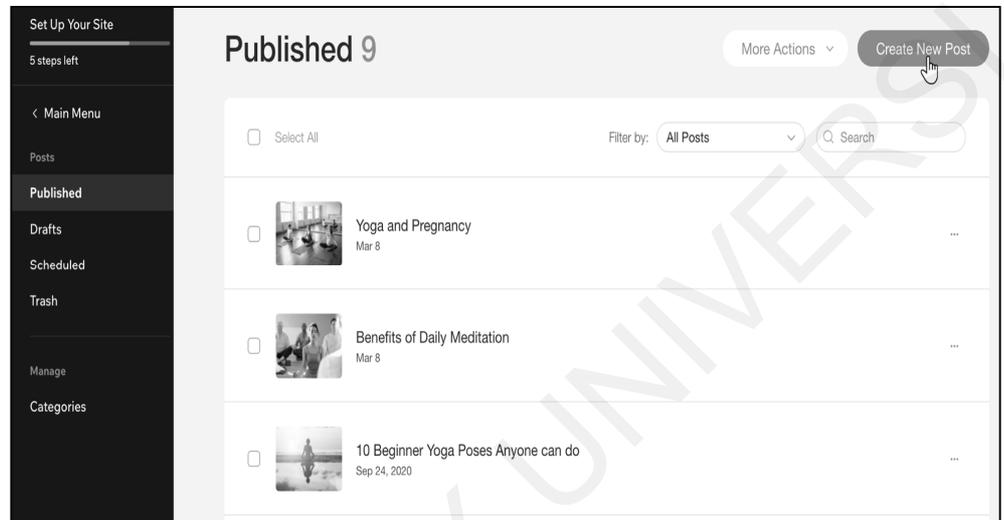
The process of publishing content on WIX is as follows:

### **Process 1:**

When operating from a computer or laptop, you can prepare your content by clicking on create a new post like the image published below. This can be done through your dashboard. Once you click on create a new post, read and verify the post and then click on publish. Voila! Your post has been published. The steps shortened are:

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- Visit the dashboard.
- Click on left side blog tab .
- Click on blue icon create new post.
- After you are ready to publish, click Publish.



**Fig. 5.21: Published article on WIX platform**

### Some Tips:

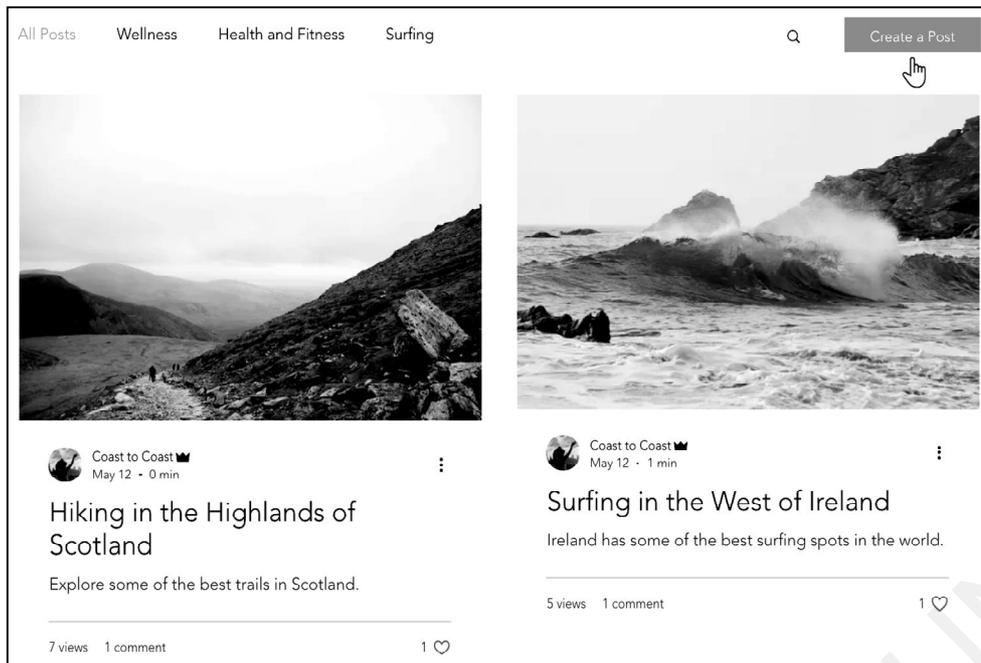
- In case you want to make a change to your post, click on the Undo icon ↶.
- In case you want to restore a change again, click on the Redo icon ↷.

### Process 2:

If you are trying to publish content from the LIVE Site, then the method is slightly different. The steps for the same are as follows:

- The writing permissions have to be obtained to work from site directly.
- In the dashboard, click on blog posts.
- Upon clicking on blog posts, click on blue icon and create a post in the right side.
- Once ready, click on the publish button.

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**Fig. 5.22: Tab where a post creation can be started**

### Process 3:

If you intend on writing posts from the WIX Owner Application, the steps to be adhered are as follows:

- Firstly, you need to have the writing permissions to see the create a post button.
- Open the application.
- Tap the drop-down
- Choose a relevant site.
- Click on the manage icon ☰.
- Click on content and community.
- Click blog.
- Click Posts.
- Click on create new post.
- Write your post.
- Check your post.
- Click on Save Posts as Draft.
- Click on Post Settings.
- Edit the settings and click on Save.
- Once ready, click on the Schedule Post and choose a date and time to post it.

## NOTES



**Fig. 5.23: Clicking create a post in WIX. This image also displays “My Drafts” and “Blog Posts” options for users.**

## 5.7 BLOGGER – CONTENT MANAGEMENT SYSTEM

Blogger.com is another content and image uploading platform which enables users to publish their content very smoothly and effectively. The application is totally dependent on the Content Management System. The website has some very easy-to-use and easy-to-understand features, making it the best platform for hassle-free and easy publishing.

Some steps to create a post in the blogger website is as follows:

1. Create a blogger account.
2. Click on sign in.
3. Click on new post .
4. Create your post and make use of all features which are like Microsoft Word.
5. Click Preview.
6. If you feel you can publish your post, click on the Publish button.
7. If you only want to save and not publish, click on Save button.

The steps to add labels for the post:

1. Sign in the blogger account.
2. Click on editor view with a current post.
3. Click on labels on the right side .
4. Create a label or click an existing label whichever suits your requirement.
5. If you wish to create more labels, add commas.
6. You can publish the post once you are confident.

The steps to Edit the post:

1. Sign in the blogger account.
2. Go to your blog.
3. Under blog, click posts.
4. Make desired changes.
5. Click on preview.
6. Once confident, click on publish.

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Some things to avoid when publishing content on blogger.com:

- Do not use other people’s content without giving them credit.
- Do not use material hosted by someone else.
- Do not use copyright materials.
- Do not use content which violates copyright and other rules.
- Do not use hateful and discriminatory content.

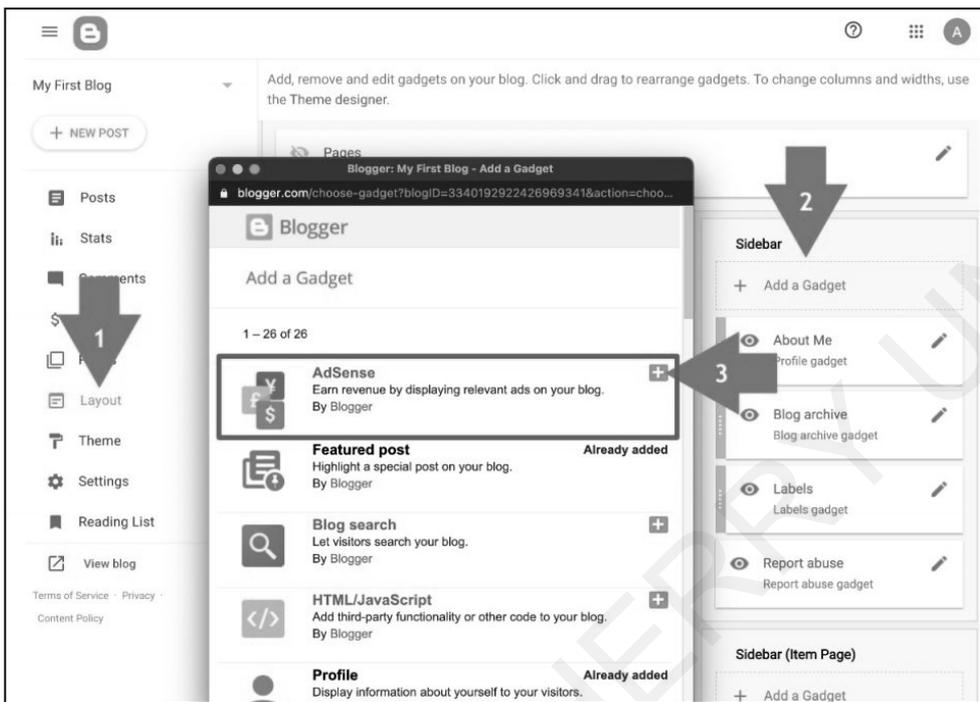


Fig. 5.24: Publish content option under blogger.com

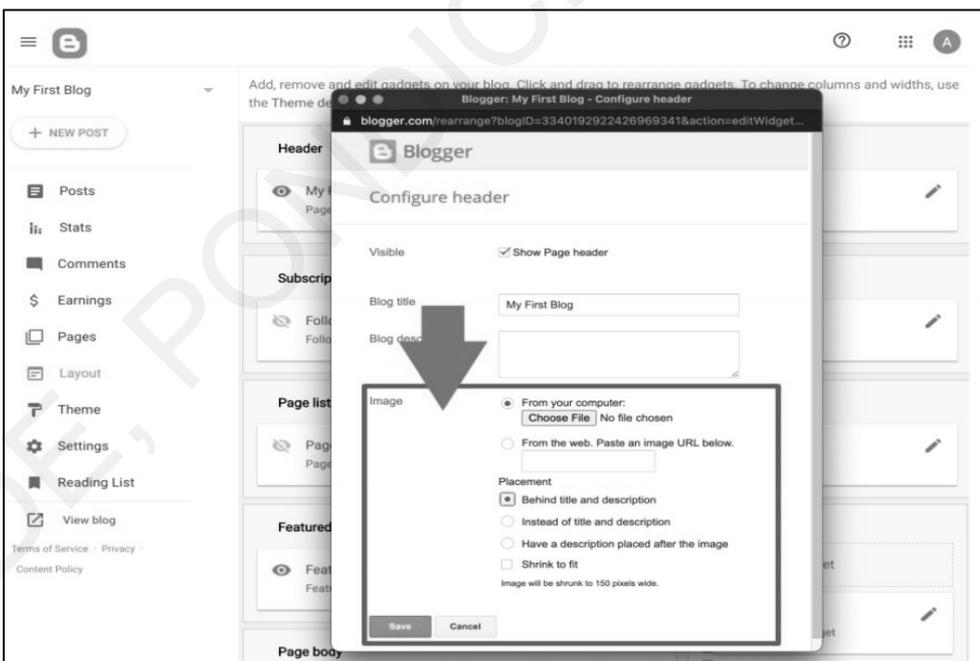


Fig. 5.25: Image insertion option under blogger.com

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Under blogger.com, there is another option for content creators to check their performance, reach and views to the audience. This is known as analytics. In some cases, the analytics feature is already built up, and in some cases, it needs to be downloaded separately as an extension or plug-in. The analytics sheet under blogger.com looks like this. Analytics present an in-depth and detailed information about the content published and how people are perceiving it.

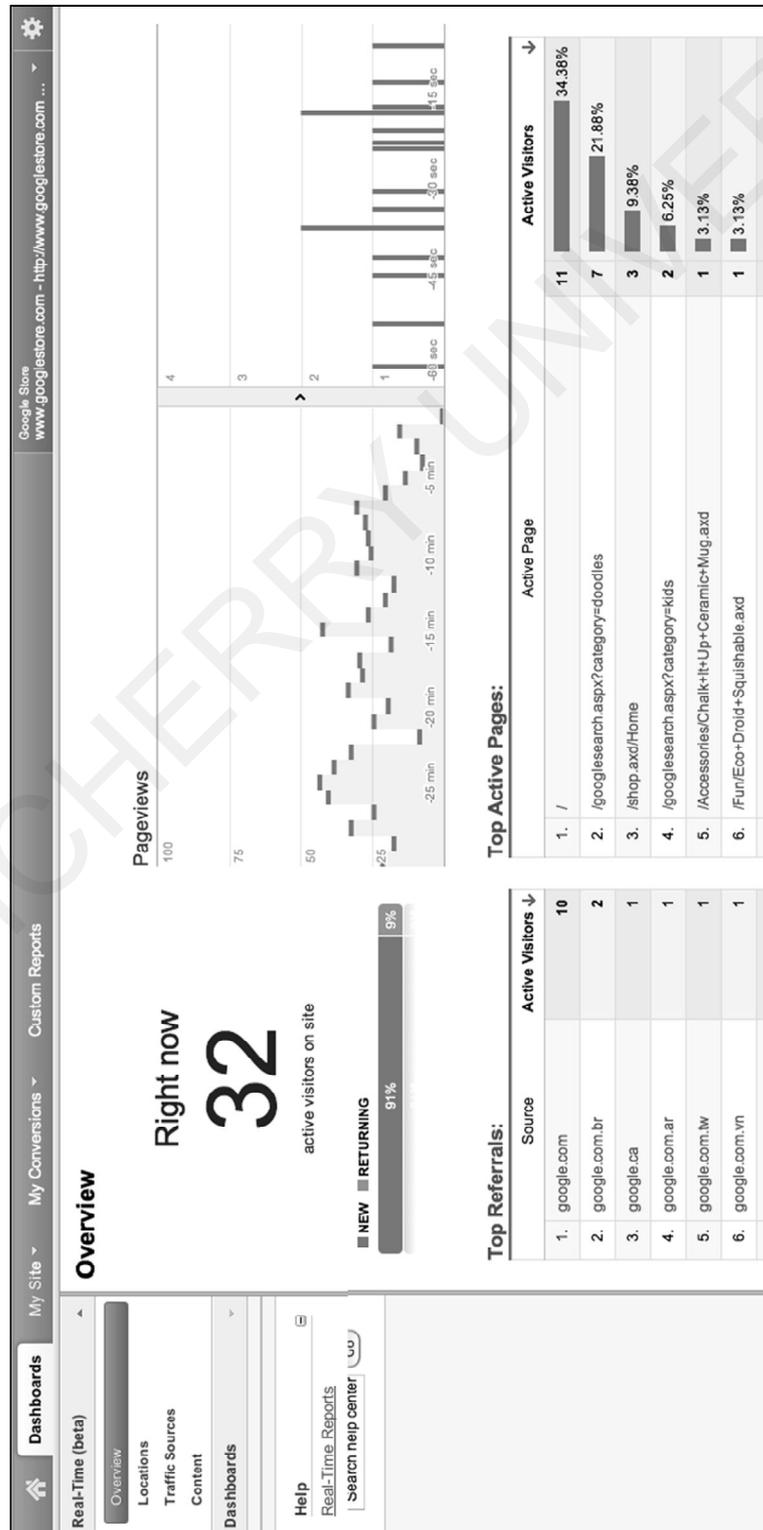


Fig. 5.26: Analytics under blogger.com

## 5.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. The full form of CMS is Content Management System.
2. In the world of technology, where blogging is the new writing, Content Management System, viz., CMS plays an important role. CMS is simply a software which helps in creating, managing and publishing content. There is no requirement for additional technical knowledge as CMS is based on artificial intelligence and handles most of the improvements without any external support. It helps to make sure that the content is checked, verified for plagiarism, supports smooth publishing thereby making blogging of articles a very easy process. Often, people think that coding is a necessity when it comes to content creation or content management. However, with CMS, coding knowledge is not essential. CMS is not just used for content but also document management. It is basically an arrangement of coding which allows people to upload typed content in a similar format of Microsoft Word. In blogging websites like WordPress, the interface looks very much like Microsoft Word with minor changes here and there. Internet offers multiple blogging options like WordPress, Blogspot, writerscafe.com, etc. which all function under the wing of Content Management System. CMS is required to make all this accessible to writers, content publishers and bloggers. With the help of this kind of software setup, blogging becomes more comfortable and easier to write, post and publish. CMS has made content management and publishing positively comfortable and reliable.
3. There are seven major functions of the content management system as it has a big role to play in today’s blogging and digital transformation. The Content Management System allows us to do various activities under one platform.

- **Content creation and content editing**

The CMS allows us to use the information and convert it into a comfortable content which can be edited and published on the world wide web. The CMS is very easy to use, and it is very helpful for bloggers and virtual writers.

- **Content organization**

We will all agree that the internet is the sea of information. Upon searching one thing, one has to swim through various pages which leads to an overload of information. However, CMS helps to organize and filter the necessary content. It identifies the important information from the bulk information which leads to a more systematic approach.

- **User- and role-based information**

The use of CMS can be customized as per the need and convenience of the user. The customization in the CMS can be done in a way that

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can suit the user's pattern of working. The information can be handled in any manner which suits the user's information as per the requirements of the web page or website or blog.

- **Security**

CMS is also a very secure software which makes sure that the data one has worked on is done very effectively and efficiently, and is safeguarded. This is done to ensure that people working on the website using CMS are stress-free. Only based on this security, CMS is becoming a popular tool for many people and the data gets completely secured. It has a strong security measure like a proper strong authentication mechanism to prevent any kind of data loss.

- **Multilingual content potential**

Digital Marketing allows people from all backgrounds. So, it enables them to have a global coverage. The CMS is enabled to come up with abilities to read any language and filter out only the essentials. Sometimes, there are some CMS systems which have information governance controls which comply with the location of the user.

- **Personalization of CMS and Analytics**

Since we all know the truth, each day, we are going one step further to the digital world. The CMS has the ability to collect and process information in real time which allows the customers to understand which factor they would like to filter or they would like to use. It is very digitally upgraded.

- **Content integration**

The Content Management system helps in developing online strategies for e-commerce and digital marketing. There are various features to cater to for content integration. The assembling of right information and knowing what has to be done is very important and CMS takes care of exactly this.

4. We will all agree that the internet is the sea of information. Upon searching one thing, one has to swim through various pages which leads to an overload of information. However, CMS helps to organize and filter the necessary content. It identifies the important information from the bulk information which leads to a more systematic approach.

## 5.9 SUMMARY

- CMS is basically an updated version of managing information and content on the web.
- CMS usually deals with the content creation, web development, website beautification, template creation, and previewing and publishing of content.

- CMS plays an important role in developing content in such a way that it reaches masses over the internet, and that it gathers maximum views and obtains most searches.
- CMS supports high visibility as it indicates high revenue and maximize returns.
- CMS is the best publishing tool which provides the right connection for the content.
- The steps in CMS are pretty simple and do not require the user to be very tech-friendly. The steps are easy enough even for a beginner or a layman of technology. CMS steps of writing, editing, previewing, proofreading and publishing is within a few clicks.

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### 5.10 KEY TERMS

- **CMS:** Content Management System.
- **Writing:** The art of developing a content from the information provided.
- **Proofreading:** The quality of reading text thoroughly for detecting errors before the submission.
- **Publish:** To establish article/content on the internet for masses to view.
- **Website:** An internet space for businesses to showcase their products, services, etc. It is used by masses who rely on the internet for most things.
- **Extension:** An additional feature installed from the internet to avail more services could be free as well as paid.
- **Template:** A design or a background which is usually provided the CMS technology for its users.
- **Image:** A picture usually taken from the camera to be added to the content adding more clarity in the information.
- **Dashboard:** A segment in the CMS which allows users to know their publications, drafts, analytics and views.
- **Analytics:** A statistical tool which helps to identify the number of visits, entry and exits from the website. It also informs how many times the website has appeared in the search results.

### 5.11 SELF-ASSESSMENT QUESTIONS AND EXERCISES

#### Short Answer Questions

1. Explain the process of creating posts on blogger.com.
2. Explain the process of uploading pictures on blogger.com.
3. Explain the process of creating posts along with the image in WIX.

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### Long Answer Questions

1. Create blog posts in WordPress after making an account with it. Explore the features of the CMS tool and publish your content. Observe the analytics and provide a detailed step by step explanation of the experience and end result of publishing the content.
2. Explain all the features of CMS in detail.

### 5.12 REFERENCES

1. [https://www.google.com/search?q=option+for+preview+and+publish+CMS&rlz=1CAEVJI\\_enIN915IN915&sxsrf=APq-WBsm\\_ey5UKv1E7Koww0K3f25KQmjjA:1645971429401&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjrkPCyiaD2AhWIyzgGHfW-B7AQ\\_AUoBHoECAEQBg&biw=1366&bih=617&dpr=1#imgc=DsZtSPb5LkK6NM](https://www.google.com/search?q=option+for+preview+and+publish+CMS&rlz=1CAEVJI_enIN915IN915&sxsrf=APq-WBsm_ey5UKv1E7Koww0K3f25KQmjjA:1645971429401&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjrkPCyiaD2AhWIyzgGHfW-B7AQ_AUoBHoECAEQBg&biw=1366&bih=617&dpr=1#imgc=DsZtSPb5LkK6NM)
2. <https://blog.hubspot.com/website/cms-features>
3. [https://www.google.com/search?q=features+of+CMS&rlz=1CAEVJI\\_enIN915IN915&oq=features+of+CMS+&aqs=chrome..69i57j0i512j0i22i3017j0i390.8410j0j4&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=features+of+CMS&rlz=1CAEVJI_enIN915IN915&oq=features+of+CMS+&aqs=chrome..69i57j0i512j0i22i3017j0i390.8410j0j4&sourceid=chrome&ie=UTF-8)
4. <https://www.sitecore.com/knowledge-center/digital-marketing-resources/the-cms-features-you-need>
5. <https://www.theedigital.com/blog/top-reasons-to-use-a-content-management-system>
6. <https://www.investopedia.com/terms/w/wordpress-cms.asp>
7. <https://www.hostinger.in/tutorials/what-is-wordpress>