



Information Technology in Business Management

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Introduction to IT Support in Management

Chapter Outline:

- 1.1 Information Technology Concepts
- 1.2 Introduction to Information Systems and its Major Components
- 1.3 Success and Failures of Information Technology
- 1.4 IT Development Trends
- 1.5 Digital Economy
- 1.6 Digital Organisation
- 1.7 IT Resources
- 1.8 Windows Operating System
- 1.9 Linux Operating Systems
- 1.10 Questions

1.1 Information Technology Concepts

1.1.1 Concept of Data

Explain the term Data

A database is simply organised data. A database contains tables which are basically descriptions of types of data. Table in turn contains records which is the actual data.

1. Data
2. Programs are nothing but gathering of instructions for altering the data.

1.1.2 Information

Write a short note on Information

Information can be defined as data which is structured or which delivers something meaningful to the recipient.

Information can have the following characteristics:

1. **Timely:** Information should be given in time.
2. **Accuracy:** Information must preserve the accuracy.
3. **Completeness:** Information as to be complete.

1.1.3 Knowledge

Explain the term Knowledge

1. Knowledge can refer to an imaginary or realistic understanding of a subject.
2. Knowledge can be defined as knowing of things before it can be experienced.
3. Things are right or wrong and that is decided upon whether a person knows or does not know about those things.

1.1.4 Concept of Database

Write short note on Database

Database can be present in many forms such as it can be a number or text written on a sheet or it can be as bits and bytes stored in electronic memory or as facts stored in a person's brain.

1. Tables
2. Columns
3. Rows

1.2 Introduction to Information Systems and its Major Components

Explain types and levels of Information System?

Information has become the cornerstone that connects the world. An information system is a collection of components that work together to create information. Information system is interconnected with data activity system.

1.2.1 Types and Levels of Information Systems

There are three main types of information systems.

There are five types of support systems.

1. Knowledge Management Systems
2. Office Information Systems
3. Business Intelligences Systems

4. Management Reporting Systems/Management Information Systems (MIS)
5. Decision Support Systems

The following are explained in detail:

1. **Knowledge Management Systems:** Knowledge Management Systems are meant to facilitate knowledge management in an organisation. As described in our approach and in the knowledge creations cycle, they are only part (although very important) of a knowledge managements' strategy.
2. **Office Information Systems:** Office Information Systems provide information to the organisation that is not directly available from operational support systems. Often, this is textual data (e.g., office – documents or email), but it can also be a CRM (customer relationship management) system.
3. **Business Intelligence Systems:** Business Intelligence (BI) refer to skills, technologies, applications and practices used to help a business acquire a better understanding of its commercial context. Business intelligence may, also, refer to the collected information itself.
4. **Management Reporting System/Managements Information System (MIS):** Management Reporting Systems are intended to provide aggregate data about the performance of the organisation. Usually, these are created from data generated by the knowledge or operational layers of information systems.
5. **Decision Support Systems:** Decision Support Systems (DSS) are a specific class of computerised information system that supports business. DSS is an interactive software based system intended to help in decision - making compile. It useful information from raw data documents, personal knowledge and business models to identify and solve problems and make decisions.

1.2.2 Computer Based Information Systems (CBIS)

Computer Based Information Systems is an information system in which the computer plays a major role. Such a system consists of the following elements:

1. **Hardware:** The term hardware refers to machinery. Parts which include the computer itself which can be operated by central processing unit (CPU) and the hard disk can support all the equipments like keyboard and output devices such as computer screen, storage devices and communication devices.
2. **Software:** The term software refers to computer programs and the manual that supports them. Computer programs are machine-readable instructions that direct the circuitry within the hardware part of computer based information systems (CBIS) and gives the guidebook.
3. **Data:** Data are face that are used by program to produce useful information like programs data are generally stored for computer need them.
4. **Procedures:** Procedures are governed by the operation of a computer system. 'Procedures are to people what is the hardware and software' it can deal with the function of a computer system.
5. **People:** Every computer based information system (CBIS) needs people if it has to be useful. People operate the computers.

1.2.3 Types of CBIS

There are four types of CBIS.

1. Executive Information Systems
2. Operations Support Systems
3. Transaction Processing Systems
4. Process Control Systems

The following are explain in detail:

1. **Executive Information Systems:** The Executive Information Systems (EIS) in detail: is a type of management information system intended to facilitate and support the information and decision-making need of senior executives by providing information of an organisation. It is Decision Support Systems (DSS).
2. **Operations Support Systems:** Operations Support Systems (PSS) give information on products for internal and external use. They give specific information on products that can best be used by managers. Further processing by managements information system is usually required.
3. **Transaction Processing Systems:** A Transaction Processing System (TPS) is a set of information which processes the data transaction in the database system that monitors transactions in a program (a special kind of program). These are usually database.
4. **Process Control Systems:** This includes a category of information system called process control system in which decision and adjusting a physical production process is automatically made by a computer. The computer monitors a chemical process capture and process of data detected by the processes.

1.3 Success and Failures of Information Technology

Explain success and failures of Information Technology?

It can be defined as success for IT projects and starts with planning.

Success is dependent on following factors such as:

1. Good project planning
2. Communications focus on continuous connection with them
3. Profitability
4. Requirement cast quality time
5. Customer expectation
6. Good planning

Failure is nothing, but we can meet targets with the planning.

Failures is dependent on following factors such as:

1. Lack of clarity of objective
2. Customers dissatisfaction
3. Lack of communication

1. Failure of Nike

In certain retail stores, fans of Nike's Air Terra Humara 2 running shoe hit the jackpot. Nike is famous for his golf equipment. When Nike decided to back off the golf and bags, there were many people who got shocked.

Skill set mismatch: Nike is a hard to believe brand and one of the best clothes and shoemakers in the world. Except hardware devices Nike doesn't fit in its expected skill set.

But, there is more to it than golf decline and when you take a step reverse and look at it, the programme makes all the sense in the world.

With club sales declining and interest in golf normally getting very slow, Nike had take to decision to focus on apparel and shoes.

2. AT & T

Later on as upgrades came, it failed in providing fast speed of network to customers.

It was ranked the fastest 3G network in some wireless surveys.

A CRM system at AT & T wireless that was upgraded in 2003 to improve customer care crashed during the upgrade.

AT & T system had gridlocked the customers service phone system.

Every cellular network has its troubles with voice quality, irregular failed calls and unsatisfactory data.

1.4 IT Development Trends

Major areas of IT Applications in Management

There are five major are as of managements that are listed below:

1. Inventory Management
2. Human Resources
3. Customer Relationship Management
4. Productions Management
5. Finance Management
 - (a) Investment policies
 - (b) Method of financing
 - (c) Dividend decisions

1. Inventory Management

When it comes to managing inventory, organisations need to maintain enough stock to meet the demand without investing more than they require.

This system is best used when the inventory management system is connected to the point of sale (POS) system.

Inventory management system tracks the quantity of each item a company maintains, triggering an order of additional stock when the quantities fall below a predetermined amount.

2. Human Resource Management

The purpose of personal managements is to generate and encourage team strength between employment and managers.

Human resources management is worried with achieving and preserving of acceptable and fulfilled effort force.

It is a dedicated of managements apprehensive with human managements.

The recruitment appointments' training point of references and encouragement of employees are incorporated by personal managements.

3. Customer Relationship Management

Companies are using IT to improve the way they design and manage customer relationships.

Customer Relationship Managements (CRM) system capture every interaction a company has with a customer so that a more enriching experience is possible.

The customer has a better and more focused experience and the company benefits from improved productivity.

4. Production Management

Sometimes pay for and catalog managements are treated as part of productions management.

Production management can contain the roles listed below:

- (a) Guarantee efficient production control
- (b) Construction system and equipment
- (c) Managing purchase and luggage compartments of material
- (d) Place position layout and continuation
- (e) Product preparation and continuation

5. Finance Management

Financial management contains primarily three decisions:

- (a) **Investment Policies:** It states the procedure related to making financial arrangements and expenditures. Each and every application to use currency is positioned and investment decisions are taken whether to approve money for these proposed undertakings or not.
- (b) **Method of Financing:** An appropriate blend of small and long-term financing is guaranteed in order to supply required fund for planned undertaking at a minimum amount of danger to the enterprise.
- (c) **Dividend Decisions:** This decision has an effect on the total paid to shareholders and sharing of added shares of stockpile.

1.5 Digital Economy

What is Digital Economy?

Digital economy or the group of economic procedures and forces of creations that work together with digital economy. Digital economy or the internet economy is increasingly influencing our social and economic activities and even the way we live.

Digital economy is an umbrella term used to describe markets that focus on digital technologies. It refers to the full range of our economic, social and cultural activities supported by the internet and related information and communications technologies. These typically involve the trade of information goods or services through electronic commerce.

Advantages of Digital Economy

1. Cashless transactions are only possible with white money which renders the black economy untenable.
2. Black money is a major problem in India and the fact that less than 5 per cent of all payments in the country are made electronically has not helped the matter.
3. Cashless transactions can be easily monitored by the government which will enhance revenue collection, and consequently increase the funds to carry out development activities.
4. The expenditure incurred by the RBI in printing notes would be considerably reduced.
5. In the year 2015, the RBI spent ₹ 27 billion in issuing and managing currency notes.
6. The citizens would no longer have to carry liquid cash with them.

Disadvantages of Digital Economy

1. The small retailers in India deal only in cash and have not been able to invest in the digital infrastructure.
2. Many poor people do not have bank accounts.
3. The taxes surcharge and the fees charged on digital transactions need to be made liberal, in order to encourage the people to adopt the practice.
4. The public would not be willing to move towards a cashless society.
5. The Indian public is not much educated with regards to the benefits of using card or online payment methods.
6. A vast majority prefer using cash as a convenient method of payment.

1.6 Digital Organisation

Explain the term: Digital Organisation

- Digital is a mindset. As the digital time but what does this actually signify for the organisation?
- If it does not perform any task, then it simply doesn't work.
- The digital technology forms integral part of a digital organisation.

- A digital enterprise is an organisation that uses technology as a competitive advantage in its internal and external operations.
- There are three principles for digital organisations:
 1. Acquire capabilities
 2. Risk-taking
 3. Challenge everything

Following are explained in detail:

1. **Acquire capabilities:** The skills required for digital transformation probably can't be groomed entirely from within. The acquisition enabled Tesco to quickly build up the skills it needed to move into digital medium.
2. **Risk-taking:** This will help organisations to improve their performances, be eager to take intended risks and be comfortable in experimenting.
3. **Challenge everything:** It is no coincidence that redefining themselves comes from silicon valley, the epicenter of digital disruption. The leaders of incumbent companies must aggressively challenge the status quo rather than accepting historical norms.

1.7 IT Resources

1.7.1 Open-source Software

The term "open-source" refers to something people can modify and share because its design is publicly accessible.

It is a software having the source code in which each and everyone can examine, alter the content, improve and share with anyone without having a license.

Unix operating system is an example of open-source system.

1.7.2 Open-source Software/Application

There are four types.

1. WordPress
2. Mozilla Thunderbird
3. Multimedia
4. Browsers

Following are explained in detail:

1. **WordPress:** WordPress is the world's most popular blogging platform used by a staggering 202 million websites. The WordPress magazine theme to portfolios using WordPress gallery themes are great for photographers' and designers' creations in an online portfolio.
2. **Mozilla Thunderbird:** With its speedy searches, built-in RSS feeds, strong security and superb add-ons thunderbird has to be the best free email application available. If you are prepared to spend some time tailoring your email environment with add-ons then you will absolutely love it, but probably not ideal for complete novices.

3. **Multimedia:** MediaCoder is a free of charge worldwide batch media transcoder which combines popular audio/video codes and tools into a single solution. The media player VLC is a transportable multimedia player, encoder and streamer underneath many audio and video file formats as well as digital versatile disk video compact disk. Basically, it can beautifully play whatever you give to it.
4. **Browsers:** Mozilla Firefox
It includes tabbed browsing, a spellchecker, incremental find, live bookmarking a download manager and an integrated search system.
Mozilla Firefox is a free of charge and open-source web browser. It is the second most popular browser in current use worldwide.

1.8 Windows Operating System

Explain Windows Operating System

Every general-purpose computer must have an operating system to run other programs. The operating system is the most important program that runs on a computer. For large systems, the operating system has even greater responsibilities and powers. It is like a traffic cop. It makes sure that different programmes and users running at the same time do not interfere with each other.

Operating system can be classified as follows:

1. **Multi-user:** Some operating systems permit hundred or even thousands of concurrent users.
2. **Real-time:** This type of operating system responds to input instantly. The are operating system to as DOS are not real time.
3. **Multiprocessing:** They are running more than one program in the CPU.
4. **Multitasking:** This system allows to run one or more than one program at a time.

Functions of Windows Operating System

1. **Network:** It can give information of any new network or program which is connected or disconnected. It can give graphical representation on the network resource usage by the computer.
2. **Services:** Services can be operating system and there are display the services which has preformed their operations or the services that are performing operations.
3. **Task manager:** When you open any application, for example there is paint then status of paint is displayed and the applications tab is the task manager.

If any window is operating then that is also known as the task manager.

Application can be give the informing to the widows about the process which are the operating system.

4. **CPU:** CPU usage is nothing but how much CPU time is used. It can use to check the CPU consumed by an individual process.

1.9 Linux Operating Systems

Linux is one of the popular versions of operating system. It is an open-source as its source code is easily available for modification.

Disk Operating System

Disk operating system is an operating system which is used by a single user, so it cannot be taken into multi-user environments.

When we start the computer then the disk operating system starts working in the internal part of the computer such as read only memory, random access memory and peripheral devices.

Features of operating systems are as follows:

1. It can accept characters.
2. It is a help to the management.
3. It can use only single operating system.

1.10 Questions

Q.1. Fill in the blanks:

1. _____ refers to the application of computers and communication technology to Decision office functions.
2. TPS stand for _____.
3. DOS is _____ system.
4. _____ system are information system that use a variety of information technology to help people work together.
5. _____ is transportable multimedia player.
6. Database system is _____ of database and database managements system.

Q.2. True or False:

- 1 MIS is based on internal information flow.
- 2 Disk operating system is single use.
- 3 DOS stands for disk operating system.
- 4 Digital economy is a superset of digital market.
- 5 Windows operating system uses task manager to examine application and tasks.

Q.3. Match the following:

Group A	Group B
1. Digital economy	(a) Computer program
2. Software	(b) Spellchecking
3. Information	(c) Group of economy procedure
4. Word processing	(d) Processed data

Q.4. Write short notes:

1. Digital economy
2. Disk operating system

3. IT support system
4. Information system
5. Transaction Processing System
6. Management Information System
7. IT Applications operating system

Q.5. Long answers questions:

1. Explain the database information.
2. Explain the levels of information system.
3. Explain the different types of IT support system.
4. Explain the Management Information System.
5. Explain the operating system.



Office Automation Using MS-Office

Chapter Outline:

- 2.1 Learn Word
- 2.2 Cross-reference
- 2.3 Bookmark
- 2.4 Hyperlink
- 2.5 Mail Merge Feature
- 2.6 Creating/Saving and Editing
- 2.7 Drawing Chart
- 2.9 The Parts of a Function
- 2.10 Challenge!
- 2.11 The Insert Function Command
- 2.12 Data Analysis
- 2.13 Presentation
- 2.14 Questions

2.1 Learn Word

- Microsoft is an operating software.
- It is developing Microsoft Office.
- It can create and save professional documents.
- The example is a letter and report.

2.1.1 Creating Documents

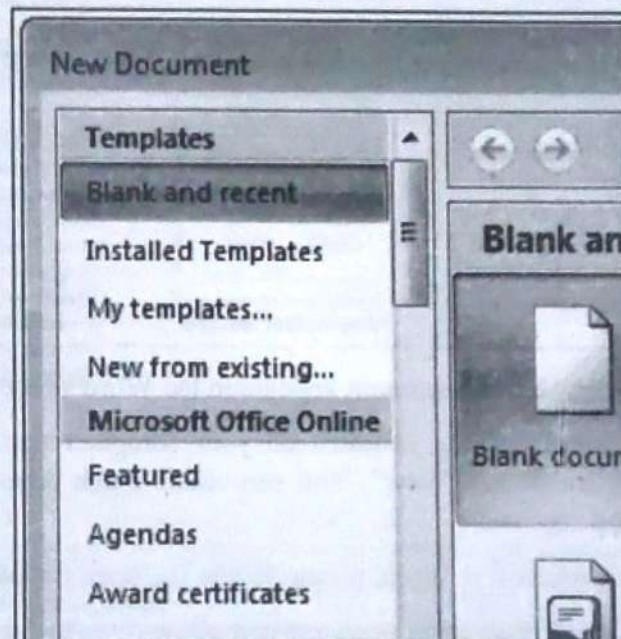
1. This helps in creating a document.
2. It is a blank document.

3. For new document, we can select new.
4. The blank document is under section blank and recent.

2.1.2 Saving Documents

1. Microsoft Office can save documents.
2. In Microsoft, there are "save" and "save as" options provided.
3. If you are typing any data and you do not save the data then the computer can lose the data or the document.
4. So, at the time of typing you can save the data or the document.
5. Following are the pointers:
 - (a) open the new document in Microsoft word.
 - (b) after adding the data the document can be located at the top.

2.1.3 Introduction



In addition to working with existing documents, you will want to be able to create new documents. Each time you open Word, a new blank document appears; however, you will also need to know how to create new documents while an existing document is open.

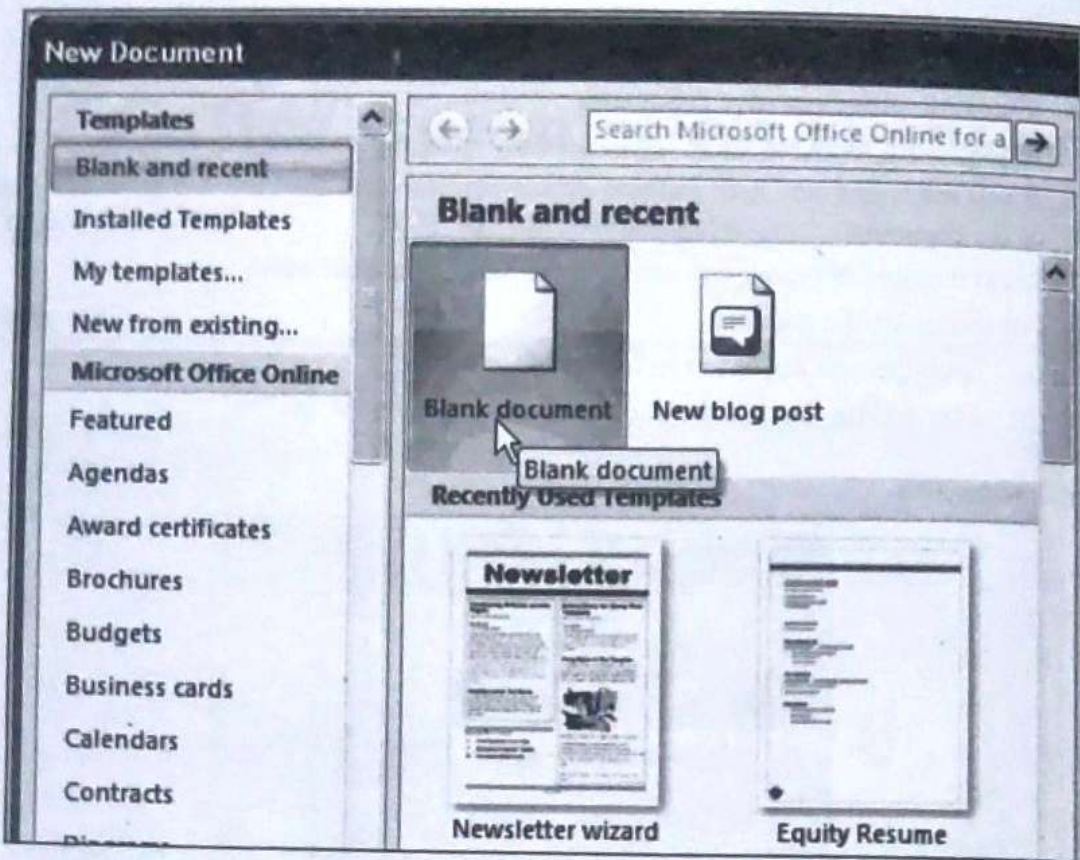
In this lesson, you will learn how to create new documents – including templates and blank documents – via the Microsoft Office button.

2.1.4 New Documents

To create a new blank document:

- Click the "Microsoft Office button".
- Select "New". The New Document dialog box appears.

- Select “Blank document” under the “Blank and recent” section. It will be highlighted by default.



- Click “Create”. A new blank document appears in the Word window.

You can access templates that are installed on your computer or on Office Online. Click the “Microsoft Office” button and select “New”. You can create blank documents and access templates from the dialog box that appears.

To save a Document in Microsoft Word, please follow the steps below:

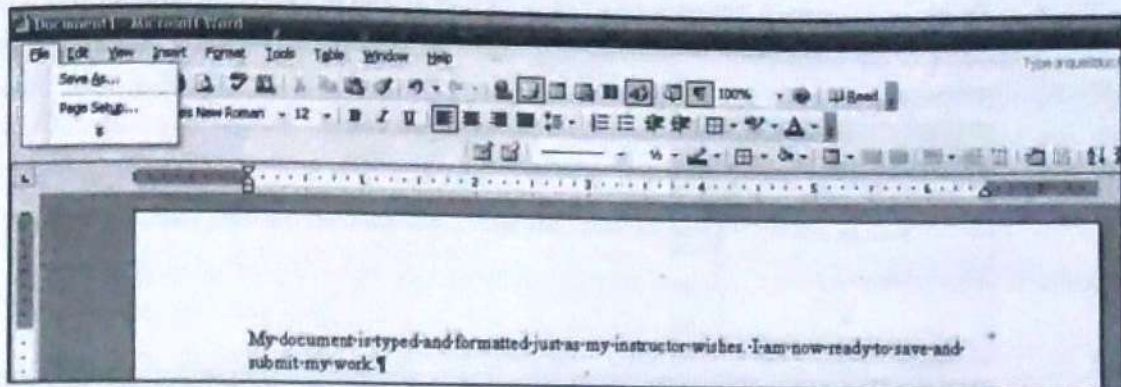
Microsoft Word is a word processing program that allows you to draft your own documents like essays, letters, resumes, etc. It is not uncommon for online instructors to request you to turn some assignments in the form of a Microsoft Word document. There are a couple of advantages to using Microsoft Word for submitting work.

1. You are able to save your work as you go along (which is nice, in case, blackboard and/or your internet experience problems when submitting your work).
2. Your instructors are able to check the formatting of the document (because the formatting of your work does matter in some courses).

In Microsoft Word...

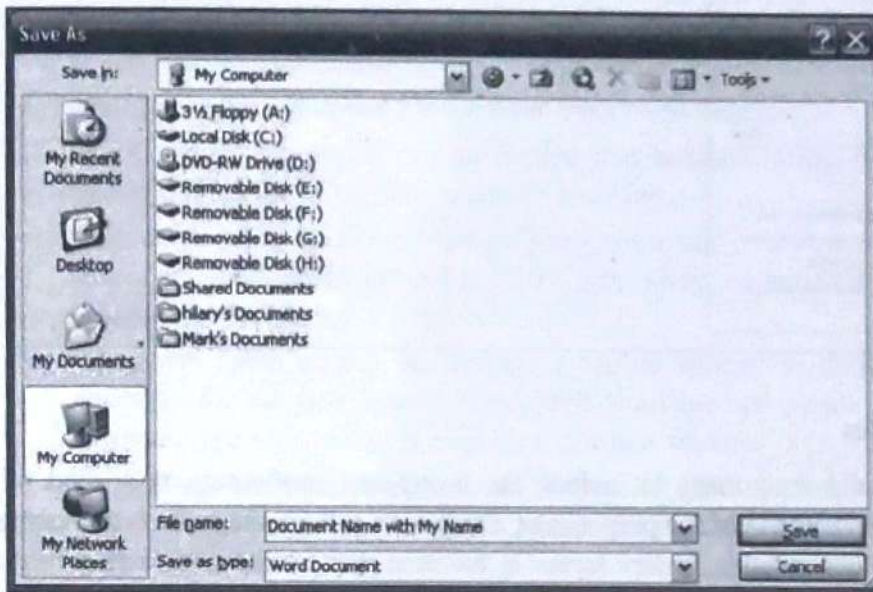
1. Type and format your document as required for your course work.
2. When work is ready, click “File” at the top left of the menu bar. Then, scroll down and click on “Save As”. (The example below shows a short drop-down menu under the “File” option; yours may be longer, but the “Save As” option is still the choice to select.)

3.



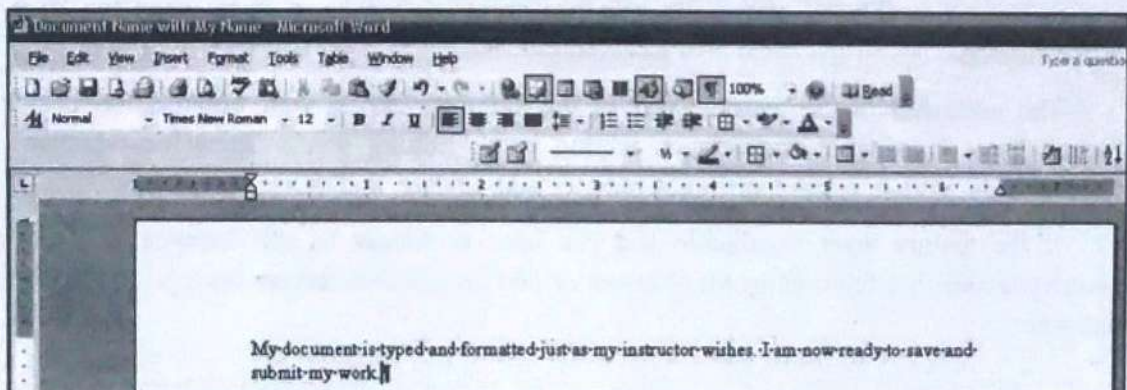
4. In the "Save As" dialog box, click the drop-down arrow to the left of the "Save in" option to select the appropriate place to store your file. Then, in the "File name" box at the bottom of the dialog box, type an appropriate title for your work, being sure to include your name somewhere in the title (this is helpful for your instructor to keep up with whose work is whose). Then click "Save".

5.

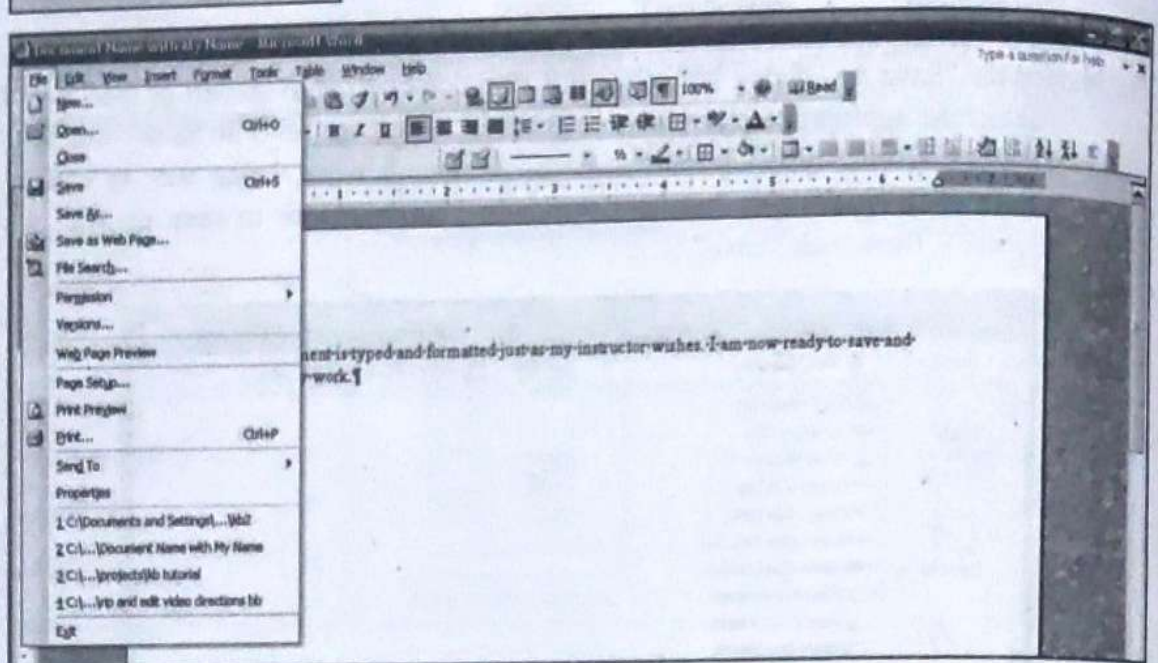
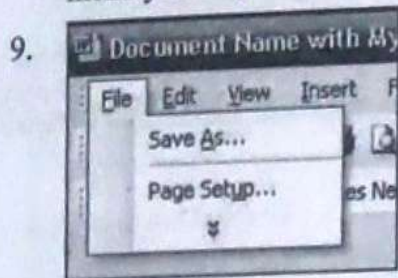


6. Your file is now saved. The saved file name should now appear in the left corner in the blue strip at the very top of the screen.

7.



8. To close Microsoft Word, either click “File” and then “Exit” from the drop-down menu (if “Exit” is not an option on your menu, click the double arrow at the bottom of the drop-down menu you see) or click the red “x” box at the top right of the screen.



2.1.5 Edit Features

Map authors build their maps to include the layers and configurations needed to achieve the purpose of the map. When one of the purposes of a map is to gather community or organisational input, the map author includes editable feature layers in the map. For example, an author might include an editable feature layer that allows the birding community to post their bird sightings directly on the map and attach media files – such as photographs, audio files, and video files – to the specific observation points. Because these features are part of the layer, any changes made to the layer in the map are immediately viewable by everybody who has access to the layer, even when the layer is part of a different map.

The publisher of the feature layer or the administrator in your organisation decides whether a feature layer is editable and sets an editing level. Editing levels determine whether you can add features only, update feature attributes only, or add, update, and delete features.

If the feature layer is editable and you have privileges to edit features, you can open a map containing editable features in MapViewer or add an editable feature layer to MapViewer to edit the features.

Feature layer edits include adding, altering, or deleting the features on the map, as well as adding, altering, or deleting the information (attribute values) associated with the features. The edits you make to the feature layer in MapViewer are automatically saved to the layer; there is no save button to click. When you add, delete, or edit a feature or attribute and realise you made a mistake, you can click "Undo" to delete your edit.

The following steps describe how to edit a feature layer in MapViewer.

1. Open the map in MapViewer that contains the feature layer you want to edit, or open the feature layer in a new map.
2. If necessary, check the box beside the layer you want to edit, and click "Edit".

The editor settings on the layer determine the type of edits you can perform. If the layer supports adding features, an editing template appears in the "Add Features" pane on the left side of the map. Templates are shown for each feature layer in the map that supports adding features. The layer publisher defines the templates, which provide predefined styling and other settings based on feature categories. Using bird sightings as an example, a layer owner might create different templates for broad categories of birds such as raptors, songbirds, or shorebirds.

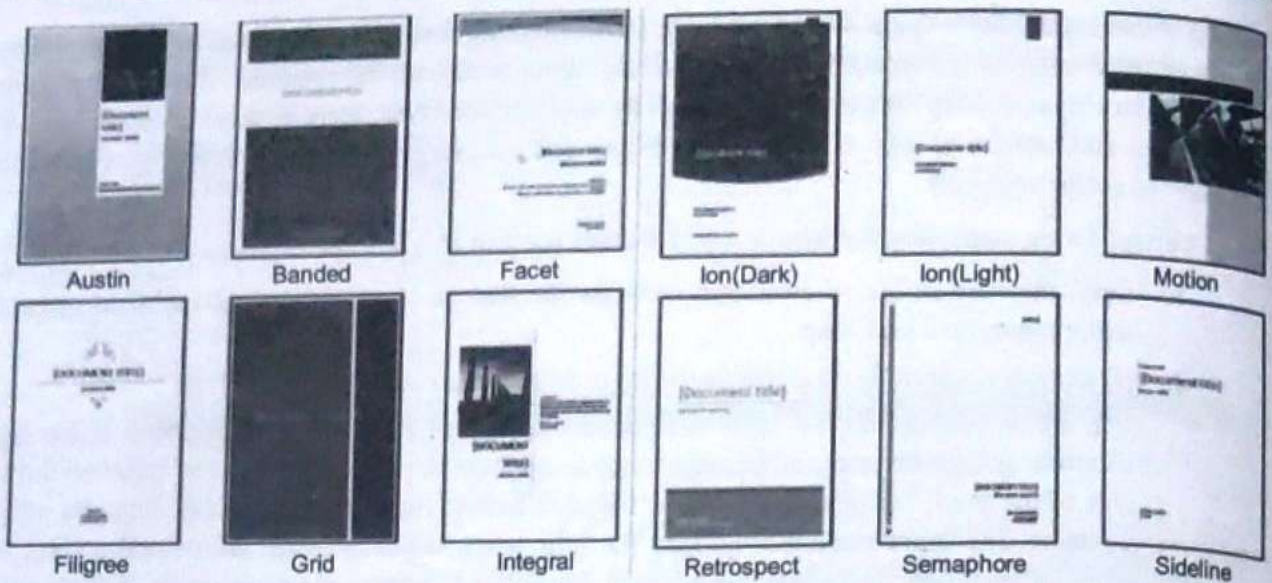
3. Follow these steps to add a feature:
 - (a) Choose a feature template for the layer from "Add Features".
 - (b) When adding a polygon or line feature that needs to align with or join to existing features, press the "Ctrl" key to enable snapping.
 - (c) Click the location on the map where you want to add or draw a feature. If you are using snapping, continue to press the "Ctrl" key while drawing the new feature to keep snapping to the nearest existing feature.
 - (d) When you finish adding the feature, a pop-up appears to allow you to populate the attributes for the new feature. The fields available are unique to the layer. For each attribute, type a value that is relevant to the new feature.

For the bird sightings map example, you might type the bird species, whether it was male or female, its approximate age (fledgling, juvenile, or adult), and the date and time you saw the bird.

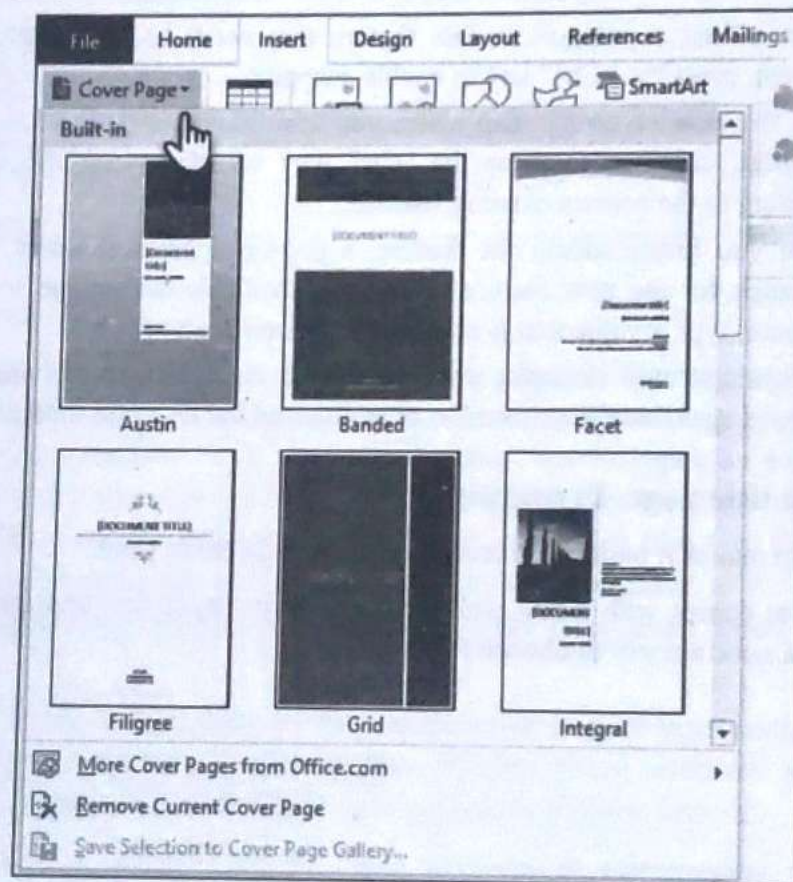
2.1.6 Designing a title page, Preparing Index

Microsoft Word makes it painless to create a professional cover page.

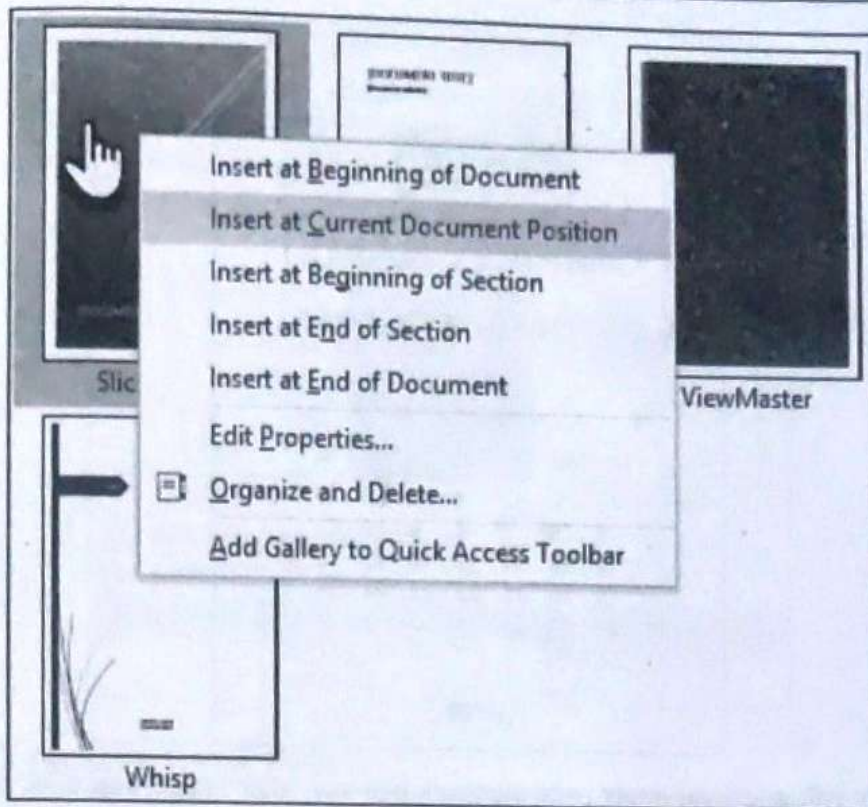
The Office suite comes with a few well-designed cover pages that you can re-purpose for your document. There's a good variety to choose from.



Open a new Word document. Click on the "Insert" menu on the ribbon. The drop-down for "Cover Page" is the first feature you will spot on the menu (under Pages). Click on the tiny arrow next to it and open the inbuilt gallery of templates. Pick one from the 16 preformatted templates and three more on "Office.com".



Select the one you like and click on it. The cover page appears at the beginning of the document by default. But to place it in any other location, right-click on the cover page thumbnail in the gallery and select from the options given. Though, am not sure why you would want to!



2.1.7 Customize Individual Fields

Click on each preformatted field (the square brackets) and the whole thing gets highlighted with a blue field label on top. Type in your version for the given field. The author name might appear by default if the Office installation is in your name. Place the common information in “Quick Parts” and you don’t have to bother with typing them again and again.

ABSTRACT
 [Draw your reader in with an engaging abstract typically a short summary of the document. When you’re ready to add your content, just click here to start typing.]

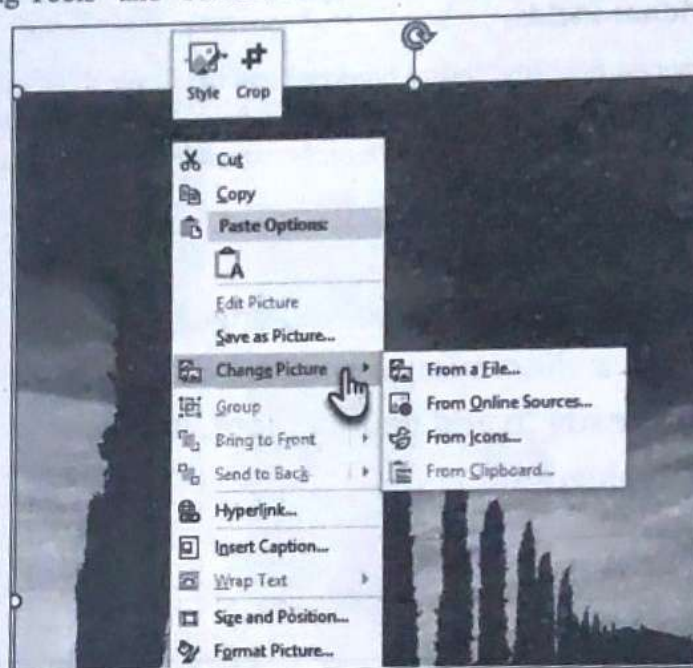
Author
 Sajikat Basu

[Course title]

Change the date fields with the drop-down arrow and select a date from a calendar. You can format all fields just like normal text.



You can easily edit graphical cover page elements like any other image. Just click on the graphic to display the “Drawing Tools” and “Picture Tools” menus on the ribbon.

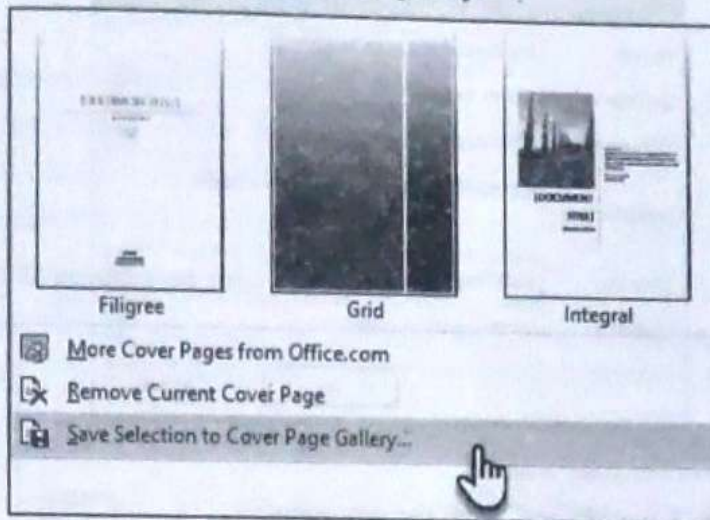


Changed your mind about the entire cover page? While working on one cover page, you can change it for another cover page by selecting a new template from the drop-down. The new template retains the field entries.

Note: To replace a cover page created in an older version of Word, you must delete the first cover page manually, and then add a new design from the cover page gallery.

Click on "Save" to finalise the cover page as a document.

If you would like to save the cover page for later use in another document, select the entire cover page. Click on "Insert" > "Cover Page" > "Save Selection to Cover Page Gallery". You can use the same menu to remove a selected cover page from the gallery.



2.1.8 Design Your Own Cover Page

Microsoft Word templates are a time-saving solution, but they don't allow your personality to shine through. To add a personal touch, you should put in a bit more effort and make a thoughtfully designed cover page from the scratch.

You have all the image editing tools in Microsoft Word at your disposal. When you can design your own logo in Microsoft Word, a cover page is less of a chore. Borrow or steal ideas from the process.

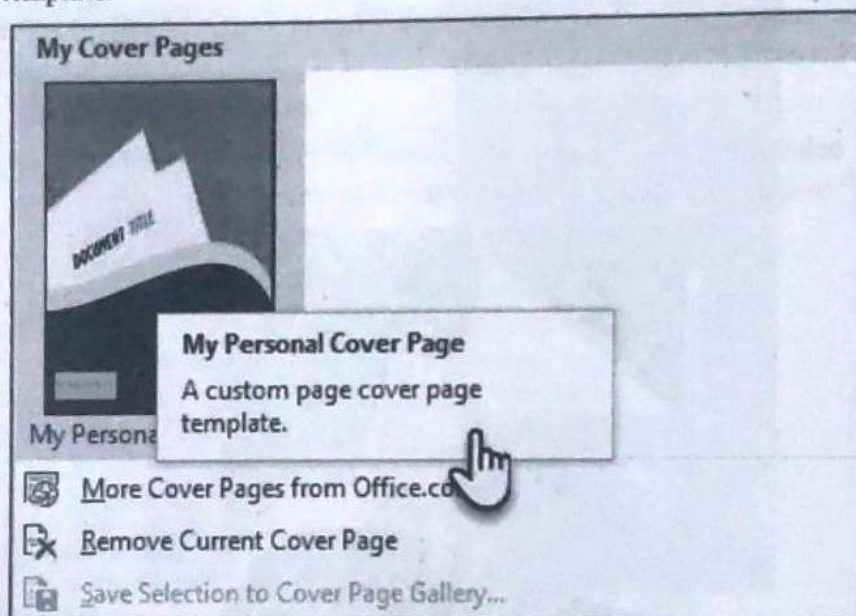
The screenshot below displays a cover page I created in Microsoft Word from the scratch. I used a few basic "Shapes" to create the design and formatted them with colour.



Enter the details in the dialog box for a new building block. Building blocks are reusable Microsoft Word elements that you can add to any of the galleries available in Word. This is what the dialog box looks like:

- Name: Give the cover page a name.
- Gallery: Choose "Cover Pages" from the drop-down.
- Category: Choose a category. For better organisation, make a new category.
- Save in: Save it in your template or in the building block. When saved as a building block, you can use it in any Word document without opening the template.

Click "OK" and close the Building Block dialog box. Go to the "Insert" menu and check your new cover page template.



2.1.9 Use of SmartArt

Applies To: Excel 2016, Word 2016, Outlook 2016, PowerPoint 2016, Excel 2013 ...

Create a SmartArt graphic to quickly and easily make a visual representation of your information. You can choose from among many different layouts, to effectively communicate your message or

ideas. SmartArt graphics can be created in Excel, Outlook, PowerPoint, and Word, and they can be used throughout Office.

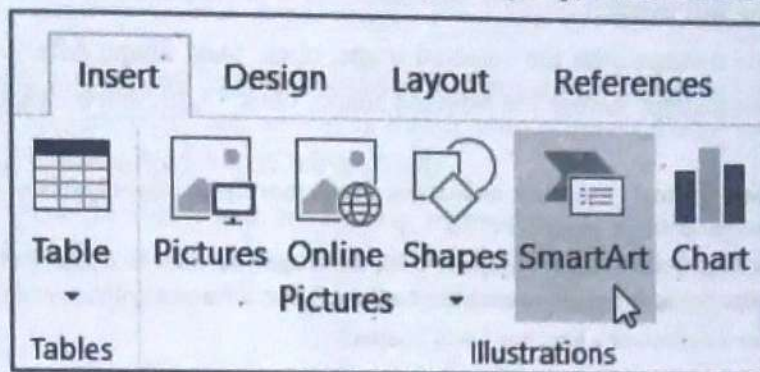
For an overview of SmartArt graphics, including considerations for choosing the best graphic and layout type to display your data or convey a concept, see Choose a SmartArt graphic.

In this article

- Insert a SmartArt graphic and add text to it.
- Add or delete shapes in your SmartArt graphic.
- Change the colors of an entire SmartArt graphic.
- Apply a SmartArt Style to a SmartArt graphic.

Insert a SmartArt Graphic and Add Text to it

1. Click on the “Insert” tab, under the “Illustrations” group, click “SmartArt”.



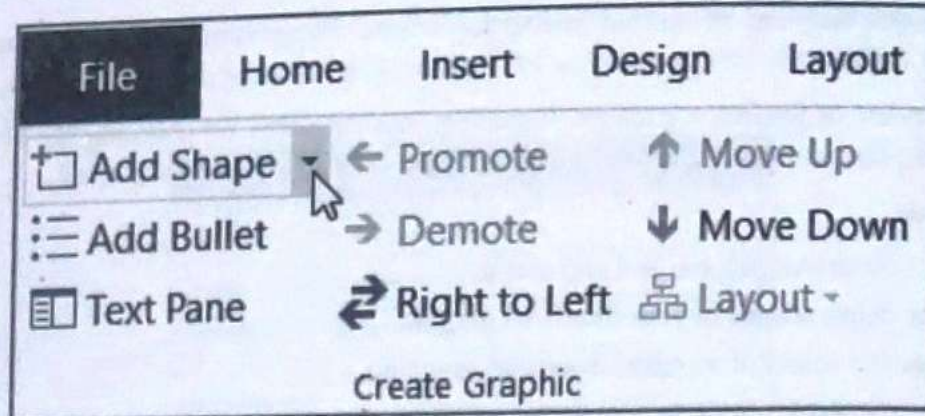
2. In the “Choose a SmartArt Graphic” dialog box, click on the type and layout that you want.
3. Enter your text by doing one of the following:
 - Click on “[Text]” in the text pane, and then type your text.
 - Copy text from another location or program, click “[Text]” in the text pane, and then paste your text.

Notes:

- If the text pane is not visible, click the arrow control on the left side of the SmartArt graphic.
- To add text, like a title, in an arbitrary position close to or on top of your SmartArt graphic, on the “Insert” tab, under the “Text” group, click on “Text Box” to insert a text box. If you only want the text in your text box to appear, right-click your text box, click “Format Shape” or “Format Text Box”, and then set the text box to have no background colour and no border.
- Click on a box in the SmartArt graphic, and then type your text. For best results, use this option after you add all of the boxes that you want.

Add or Delete Shapes in your SmartArt Graphic

1. Click on the SmartArt graphic that you want to add another shape to.
2. Click on the existing shape that is located closest to where you want to add the new shape.
3. Under “SmartArt Tools”, on the “Design” tab, in the “Create Graphic” group, click the arrow next to “Add Shape”.



If you don't see the SmartArt Tools or Design tabs, make sure that you've selected the SmartArt graphic. You may have to double-click the SmartArt graphic to open the "Design" tab.

4. Do one of the following:

- To insert a shape after the selected shape, click "Add Shape After".
- To insert a shape before the selected shape, click "Add Shape Before".

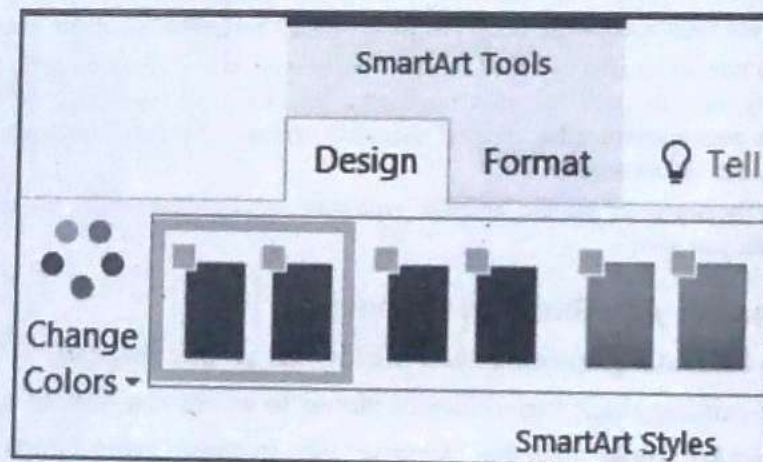
Notes:

- To add a shape from the text pane, click an existing shape, move your cursor before or after the text where you want to add the shape, and then press "ENTER".
- To delete a shape from your SmartArt graphic, click the shape you want to delete, and then press "DELETE". To delete your entire SmartArt graphic, click the border of your SmartArt graphic, and then press "DELETE".
- To add a shape like a callout or a line, see "Add Shapes".

Change the Colours of an Entire SmartArt Graphic

You can apply colour variations that are derived from the theme colours to the shapes in your SmartArt graphic.

1. Click on your SmartArt graphic.
2. Under "SmartArt Tools", click on the "Design" tab, in the "SmartArt Styles" group, click "Change Colours".



If you don't see the SmartArt Tools or Design tabs, make sure that you've selected a SmartArt graphic. You may have to double-click the SmartArt graphic to open the "Design" tab.

3. Click the colour variation that you want.

Apply a SmartArt Style to a SmartArt Graphic

A SmartArt style is a combination of various effects, such as line style, bevel, or 3-D, that you can apply to the shapes in your SmartArt graphic to create a unique and professionally designed look.

1. Click your SmartArt graphic.
2. Under "SmartArt Tools", on the "Design" tab, in the "SmartArt Styles" group, click on the SmartArt Style that you want.

Note: To resize your entire SmartArt graphic, click the border of your SmartArt graphic, and then drag the sizing handles in or out until your SmartArt graphic is the size that you want.

When navigating the user to the right content, there are two ways to point them to the right direction: hyperlinks and cross-references. A hyperlink is a way for you to architect how a user will get from one place to another. Typically, they are blue and are underlined, and when a user clicks on it they will be taken to another place, it could be to another topic, a bookmark in another topic, or to an external website.

On the other hand, a cross-reference functions in the same way when clicked, it will navigate the user to another location. However, one caveat is that it only allows linking within a MadCap Flare project. So, why use a cross-reference over a hyperlink?

Hyperlinks are great for when you are linking to an external location, such as a website or a location that is outside of your Flare project. However, the issue with hyperlinks arises when you begin to think about how this will affect the user experience when creating a printed version of the output.

Enter the Cross-reference

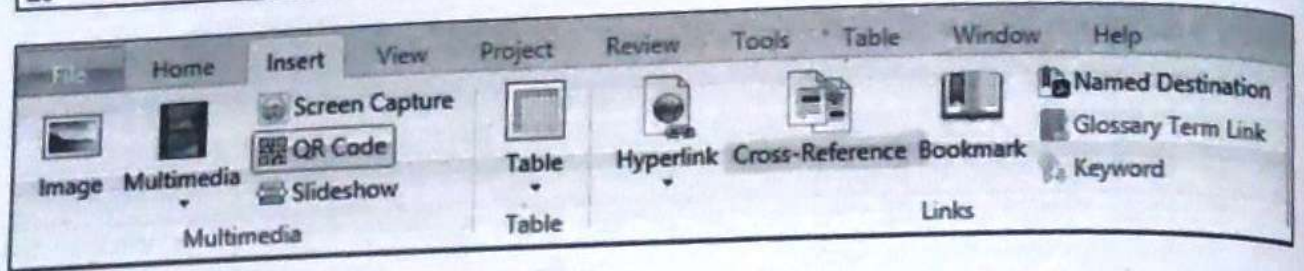
Cross-references have the advantage of dynamically changing based on your output types. For an online output, a cross-reference might look and feel just like a normal hyperlink. However, when going to a print based format, the cross-reference will update and show you where the linked element is contained on the printed page. Some examples might be "On the next page" or "On page 24". So, cross-references can be context-sensitive and will let the user know where the referenced content is in context. Also, if the print output is being viewed electronically on a screen, they will still behave like hyperlinks and allow users to click on the item and take them to the content.

2.2 Cross-reference

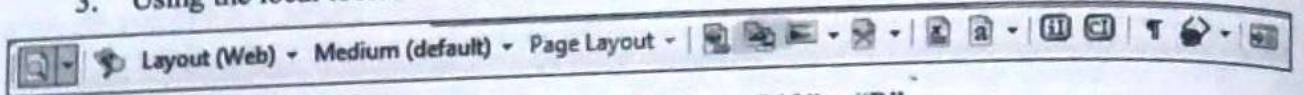
Quick: If you already have your format set up the way you want it, you can use the quick cross-reference method, which is faster but does not have as many options. This method lets you quickly select a bookmark that may already exist in the current file, a file in the same folder, or another file currently open.

Standard: You can use the standard method, opening a "cross-reference" dialog box that provides additional options for selecting styles, properties, and link destinations. There are four different ways to insert a cross-reference:

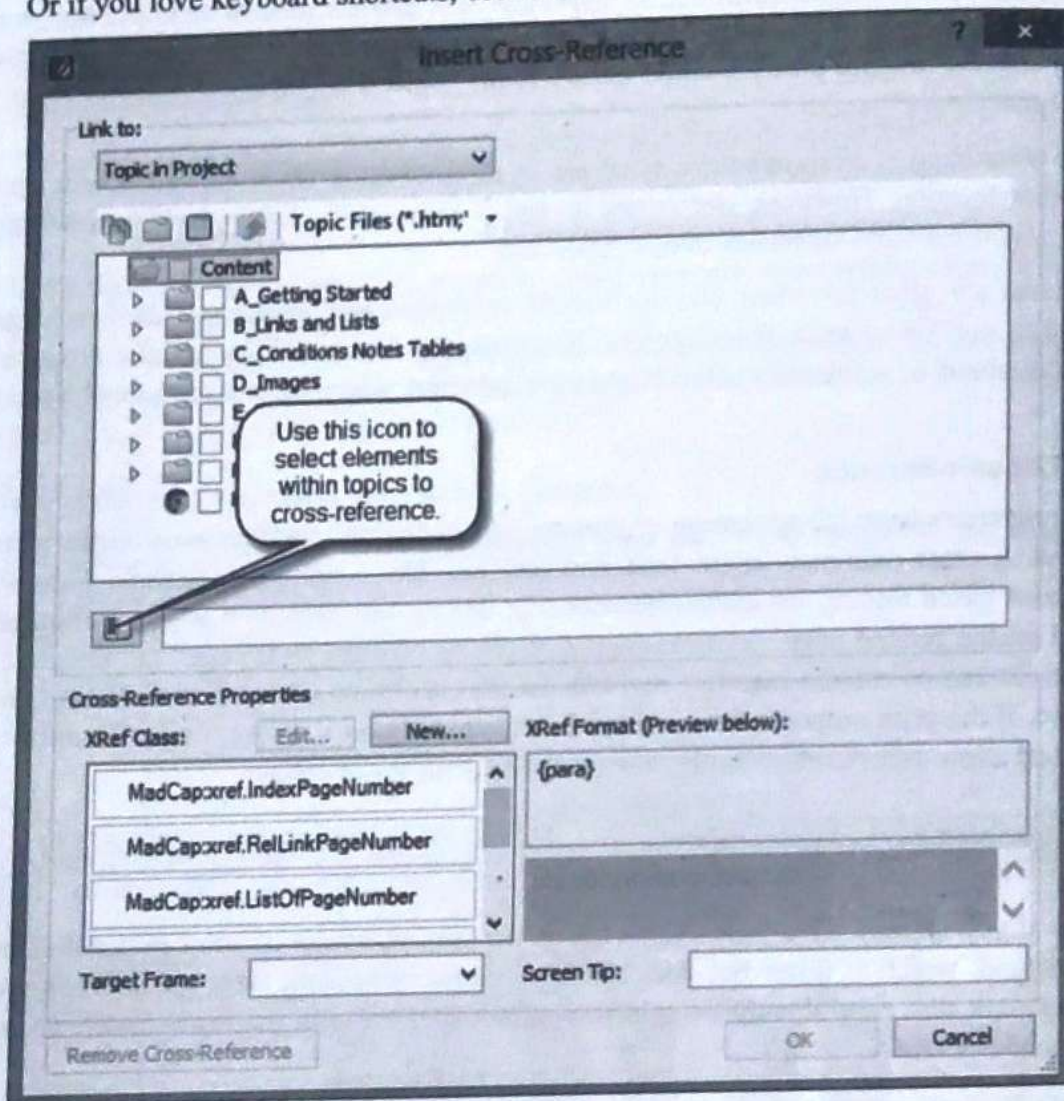
1. Right-clicking in the editor then going to "Insert" > "Cross-reference"
2. Using the insert ribbon: "Links" Section > "Cross-reference"



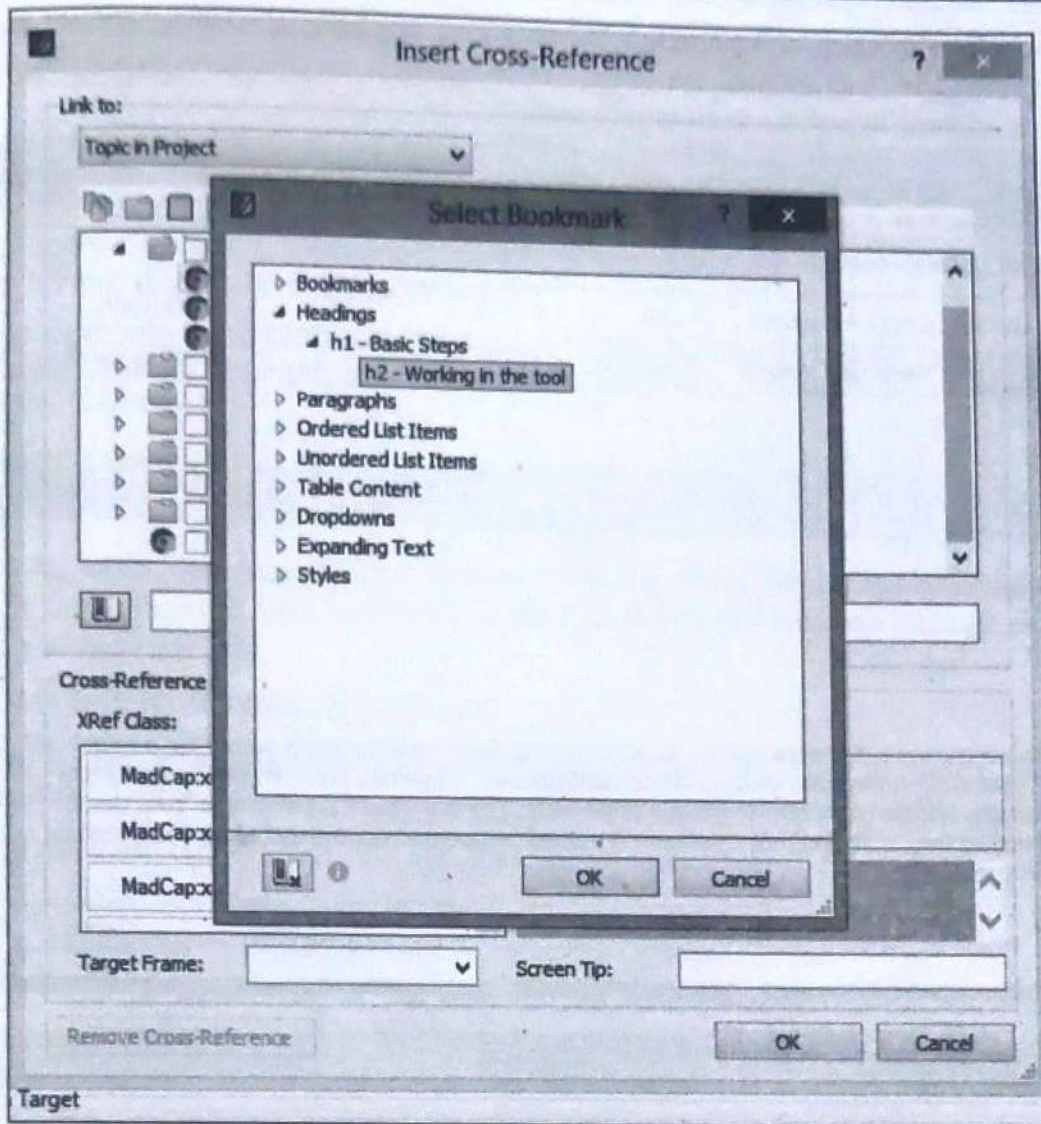
3. Using the local toolbar of the editor:



4. Or if you love keyboard shortcuts, use “Ctrl” + “Shift” + “R”.



One advantage of the standard method is that you can select the “Bookmark” icon, easily located in the cross-reference dialog box. This will allow you to select elements within your topic to cross-reference to and a bookmark will automatically be created, as shown in the dialog box below:



2.2.1 Maintaining Cross-references

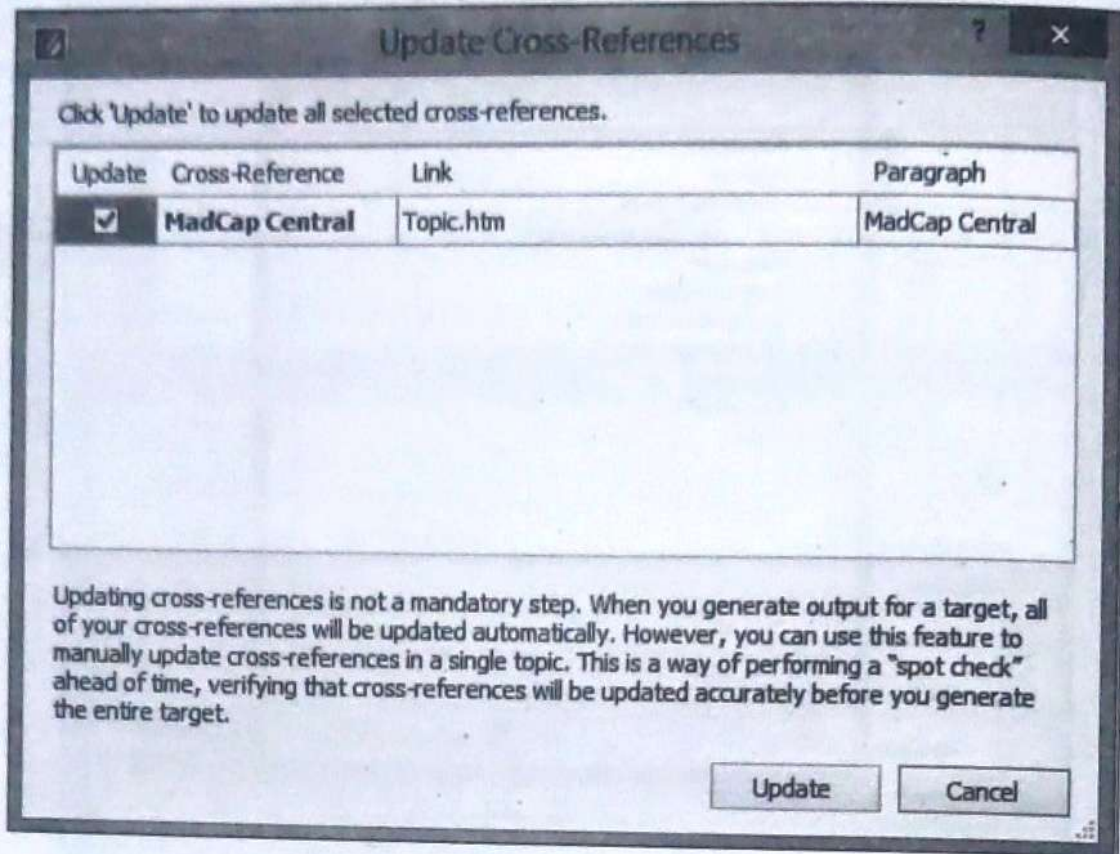
One thing to note: If you insert a cross-reference into a topic and later make changes that affect the cross-reference, you might find that it isn't pointing to the correct place.

Example: I create a cross-reference to a heading and later decide to change the title of the heading. The cross-reference won't automatically update in the editor. However, these will automatically be taken care of at compile time and will display the correct reference title in the generated output.

However, Flare has the ability for you to update cross-references in a topic so that you can spot check whether the cross-references are linking to the appropriate content. You can do this by taking the following steps:

1. Open a topic.
2. Select "Tools" > "Update Cross-references", and the "Update Cross-reference" dialog opens, displaying the destination topics of your cross-references.
3. Click "Update" > "Save".

Already have a bunch of hyperlinks? Maybe you're importing a bunch of content that already uses hyperlinks? Use MadCap Analyzer to run a cross-reference suggestion report and use Analyzer to quickly convert those hyperlinks to cross-references!



2.3 Bookmark

A bookmark is a saved shortcut that directs your browser to a specific webpage. Internet Explorer uses the name "Favorites" to refer to bookmarks, like Safari, it displays all your favourites in a list within the browser window.

A bookmark is a saved shortcut that directs your browser to a specific webpage. It stores the title, URL, and icon of the corresponding page. Saving bookmarks allows you to easily access your favourite locations on the web.

All major web browsers allow you to create bookmarks, though each browser provides a slightly different way of managing them. For example, Chrome and Firefox display your bookmarks in an open window, while Safari displays them in a list in the sidebar of the browser window. Internet Explorer uses the name "Favorites" to refer to bookmarks, and like Safari, it displays all your favourites in a list within the browser window sidebar.

To create a bookmark, simply visit the page you want to bookmark and select, "Add Bookmark" or "Bookmark this Page" from the Bookmarks menu. In Internet Explorer, you can click the star icon to open the "Favorites" sidebar and click "Add to Favorites" to add the current page to your bookmarks. The website title will show up in your bookmarks list along with the website's icon, if

available. As your collection of bookmarks grows, you can create folders to organise your bookmarks into different categories.

It is helpful to bookmark frequently visited websites and useful references since you don't have to remember the URLs. Additionally, you can just click the bookmarks instead of typing in the full web addresses. Some browsers even display your bookmarked pages in the Autocomplete drop-down menu as you type in the address bar. This allows you to visit bookmarked pages without even opening the bookmarks window or the sidebar in your browser.

Note: A bookmark only stores the location of a webpage, it does not store the contents of the webpage itself. Therefore, when you open a previously saved bookmark, the contents of the page may have changed since the last time you viewed it.

2.4 Hyperlink

Select the text or the image that you want to use as the destination for the hyperlink. Click the Insert tab. In the Links group, click Bookmark. In the Bookmark name box, type a unique name for the bookmark, and then click Add.

How do I turn off automatic hyperlinks?

To turn off automatic hyperlinks, follow these steps, as appropriate for the version of Word that you are running:

- In Microsoft Office Word 2010 and 2013, follow these steps:
 1. On the File menu, click Options.
 2. Click Proofing, and then click AutoCorrect Options.
 3. On the AutoFormat as you type tab and on the AutoFormat tab, click to clear the Internet and network paths with hyperlinks checkbox, and then click OK.
 4. Click OK to close the Word Options dialog box.
- In Microsoft Office Word 2007, follow these steps:
 1. Click the Microsoft Office Button, and then click Word Options.
 2. Click Proofing, and then click AutoCorrect Options.
 3. On the AutoFormat as you type tab and on the AutoFormat tab, click to clear the Internet and network paths with hyperlinks checkbox, and then click OK.
 4. Click OK to close the Word Options dialog box.
- In Microsoft Office Word 2003 and in Microsoft Word 2002, follow these steps:
 1. On the Tools menu, click AutoCorrect Options.
 2. On the AutoFormat as you type tab and on the AutoFormat tab, click to clear the Internet and network paths with hyperlinks checkbox.
 3. Click OK.

How do I change the display text or image of a hyperlink after it has been created?

You can change the display text or image for a hyperlink in the same way that you edit any text or image in your document.

To follow a hyperlink, press and hold CTRL, and then click the hyperlink.

For more information, click the following article number to view the article in the Microsoft Knowledge Base:

279090 Cannot click to activate hyperlink

How do I remove a hyperlink without losing the display text or image?

To remove a single hyperlink without losing the display text or image, right-click the hyperlink, and then click Remove Hyperlink.

To remove all hyperlinks in a document, press CTRL+A to select the entire document and then press CTRL+SHIFT+F9.

Note: Performing this operation converts all fields, not just hyperlinks, to plain text.

How do I change the underlying Uniform Resource Locator (URL) for a hyperlink?

To change the underlying URL for a hyperlink, follow these steps:

1. Right-click the hyperlink text or image, and then click Edit Hyperlink.
2. In the Edit Hyperlink dialog box, type or select a URL from the Type the file or webpage name box.
3. Click OK.

How do I create hyperlinks to locations within the same document?

To create a hyperlink to a location within the same document, use one of the following methods:

- Use a drag-and-drop operation. To do this, follow these steps:
 1. Save the document.
 2. Select the word, phrase, or image that you want to use as the destination for the hyperlink.
 3. Right-click and hold down the mouse button while dragging the selection to the new location; then, release the mouse button.
 4. Click Create Hyperlink Here.
- Create a bookmark, and then create a link. To do this, follow these steps, as appropriate for the version of Word that you are running:
 - ❖ In Word 2007, and in Word 2010 and 2013, follow these steps:
 1. Save the document.
 2. Select the text or the image that you want to use as the destination for the hyperlink.
 3. Click on the Insert tab.
 4. In the Links group, click on Bookmark.
 5. In the Bookmark name box, type a unique name for the bookmark, and then click Add.
 6. Move the insertion point to the location in the document where you want to create the hyperlink.
 7. Click Hyperlink in the Links group.
 8. Click Bookmark.

9. In the Select Place in Document dialog box, select the bookmark that you want to use as the destination hyperlink, and then click OK.
 10. Click OK to close the Insert Hyperlink dialog box.
- ◆ In Word 2003 and in Word 2002, follow these steps:
1. Save the document.
 2. Select the text or the image that you want to use as the destination for the hyperlink.
 3. On the Insert menu, click on Bookmark.
 4. In the Bookmark name box, type a unique name for the bookmark, and then click Add.
 5. Move the insertion point to the location in the document where you want to create the hyperlink.
 6. In the Insert menu, click on Hyperlink.
 7. Click on Bookmark.
 8. In the Select Place in Document dialog box, select the bookmark that you want to use as the destination hyperlink, and then click OK.
 9. Click OK again.

What is the difference between a relative hyperlink and an absolute hyperlink?

An absolute hyperlink uses the full address of the destination document. A relative hyperlink uses the address relative to the address of the containing document. This is also known as the hyperlink base.

For example, suppose that a document has the following address:

C:\My Documents\1999 report.doc

This document has absolute and relative hyperlinks to a document that has the following full address (and absolute hyperlink):

C:\My Documents\April\Sales.doc

The relative hyperlink contains only the relative address to Sales.doc. The relative address is as follows:

April\Sales.doc

Use a relative link if you want to move or to copy your files to another location, such as a web server.

When I click on a hyperlink in Word, I receive a message that indicates that no program is registered to open the file. What do I do to open the file?

You receive this message when Windows is unable to find the program that is associated with the type of document that is specified in the hyperlink path. This information is encoded in the extension of the hyperlink address.

To view the hyperlink, turn on the Tool Tips option, and then position the mouse pointer over the hyperlink.

To locate the Tool Tips option, use one of the following procedures, as appropriate for the version of Word that you are running:

- In Word 2010 and 2013, click File, click Options, and then click Display.
- In Word 2007, click the Microsoft Office Button, click Word Options, and then click Display.
- In Word 2003 and in Word 2002, click Options on the Tools menu, and then click the View tab.

2.5 Mail Merge Feature

This paragraph contains information about using the Remote Mail feature in Microsoft Exchange.

Note: Microsoft Exchange is not included in Windows 98. If you upgrade a Windows 95 installation in which Microsoft Exchange is installed, Microsoft Exchange is available in Windows 98.

2.5.1 More Information

You can use Microsoft Exchange to log on to a remote mail system using a modem or LAN and view the mail waiting on the server. You can then download the mail, download a copy of the mail and leave a copy on the server, or delete the mail on the server. This feature was primarily designed for mobile computer users who retrieve mail from home and work, but can also be used any time you want to see your messages before downloading them. Note that not all Microsoft Exchange information services have the ability to use the Remote Mail feature.

2.5.2 Preparing Your Computer for Remote Mail

1. Install Microsoft Exchange and the appropriate information services (for example, internet mail or Microsoft Mail) on the computer you will be using for Remote Mail.
2. If you plan on using Remote Mail with a modem, install the modem and create a Dial-Up Networking connection to the network your mail server is on.
3. Make sure that you do not have Microsoft Exchange running on another computer and downloading mail from the same server. If you do, that computer may continue to download messages and remove them from the server.

2.5.3 Specifying Configuration Options for Remote Mail

1. Quit Microsoft Exchange.
2. In Control Panel, double-click on "Mail And Fax".
3. Click the information service with which you want to use Remote Mail, and then click on "Properties".
4. Select the options you want to use. For information about an option, click "Help". When you are done, close the property sheet and restart Microsoft Exchange.

2.5.4 Sending and Receiving Mail Remotely

1. Start Microsoft Exchange on the computer configured for Remote Mail.
2. Compose messages as you normally would. When you click "Send", composed messages are placed in the Outbox to await delivery.
3. On the Tools menu, click "Remote Mail". If more than one information service is configured to use Remote Mail, click the service you want to use.
4. On the Tools menu, click "Connect And Update Headers". If you are not using a modem to connect or you have already connected, click "Update Headers" instead. If you are not connected, you are given the option to connect and log on to your network. Once you are connected, you see the headers of messages waiting on your server in the Remote Mail window.

For each message, you can click "Mark To Retrieve", "Mark To Retrieve A Copy", or "Mark To Delete". You can mark a message by clicking the message and then clicking the command you want to use on the Edit menu, or by using the right mouse button to click the message and then clicking the command you want to use on the menu that appears. The "Mark To Retrieve" command downloads the message to your computer and removes it from the server. The "Mark To Retrieve A Copy" command downloads a copy of the message and leaves the message on the computer. The "Mark To Delete" command deletes the message without downloading it.

5. After you have marked the messages, click "Transfer Mail" on the Tools menu.

2.6 Creating/Saving and Editing

Every Word project you create — whether it's a personal letter, a TV sitcom script, or a thesis in microbiology — begins and ends the same way. You start by creating a document, and you end by saving your work. Sounds simple, but to manage your Word documents effectively, you need to know these basics and beyond. This chapter shows you all the different ways to create a new Word document — like starting from an existing document or adding text to a predesigned template — and how to choose the best one for your particular project.

You'll also learn how to work faster and smarter by changing the view of your document. If you want, you can use Word's Outline view when you're brainstorming, and then switch to Print view when you're ready for the hard copy. This chapter gets you up and running with these fundamental tools so you can focus on the important stuff — your words.

The first time you launch Word after installation, the program asks you to confirm your name and initials. This isn't Microsoft's nefarious plan to pin you down: Word uses this information to identify documents that you create and modify. Word uses your initials to mark your edits when you review and add comments to Word documents that other people send to you (Section 16.3).

You have three primary ways to fire up Word, so use whichever method you find quickest:

- **Start Menu:** The Start button in the lower-left corner of your screen gives you access to all programs on your PC — Word included. To start Word, choose Start → All Programs → Microsoft Office → Microsoft Office Word.

- **Quick Launch Toolbar:** The Quick Launch toolbar at the bottom of your screen (just to the right of the Start menu) is a great place to start programs you use frequently. Microsoft modestly assumes that you'll be using Word a lot, so it usually installs the Word icon in the Quick Launch toolbar. To start using Word, just click the "W" icon, and voilà!

2.6.1 Creating a New Document

When you start Word without opening an existing document, the program gives you an empty one to work in. If you're eager to put words on the page, then type away. Sooner or later though, you'll want to start another new document. Word gives you three ways to do so:

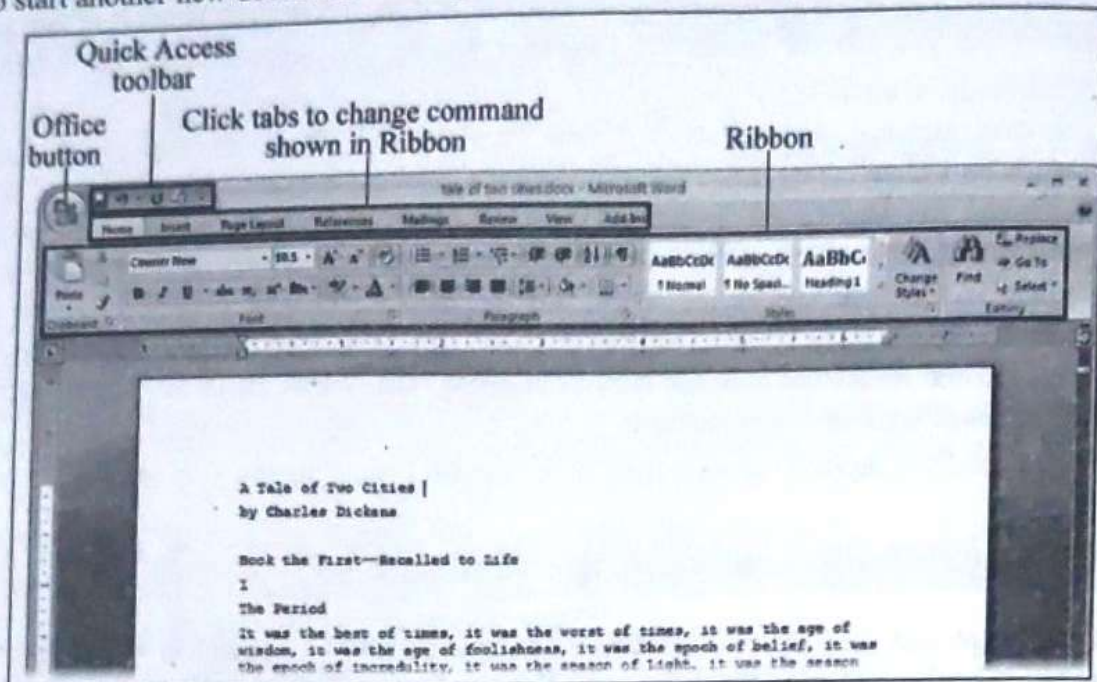


Figure 1.1: When you start Word 2007 for the first time, it may look a little top-heavy. The ribbon takes up more real estate than the old menus and toolbars. This change may not matter if you have a nice big monitor. But, if you want to reclaim some of that space, you can hide the ribbon by double-clicking the active tab. Later, when you need to see the ribbon commands, just click a tab.

- **Creating a new blank document:** When you're preparing a simple document — like a two-page essay, a note for the babysitter, or a press release — a plain, unadorned page is fine. Or, when you're just brainstorming and you're not sure how you want the final document to look like, you probably want to start with a blank slate or use one of Word's templates (more on that in a moment) to provide structure for your text.
- **Creating a document from an existing document:** For letters, resumes, and other documents that require more formatting, why reinvent the wheel? You can save time by using an existing document as a starting point (Section 1.2.2). When you have a letter format that you like, you can use it over and over by editing the contents.
- **Creating a document from a template (Section 1.2.3):** Use a template when you need a professional design for a complex document, like a newsletter, a contract, or minutes of a meeting. Templates are a lot like forms — the margins, formatting, and graphics are already in place. All you have to do is fill in your text.

2.7 Drawing Chart

2.7.1 Get your Data into Excel

First, you need to input your data into Excel. This is the easy part! You may have exported the data from elsewhere, like a piece of marketing software or a survey tool. Or maybe you're inputting it manually.

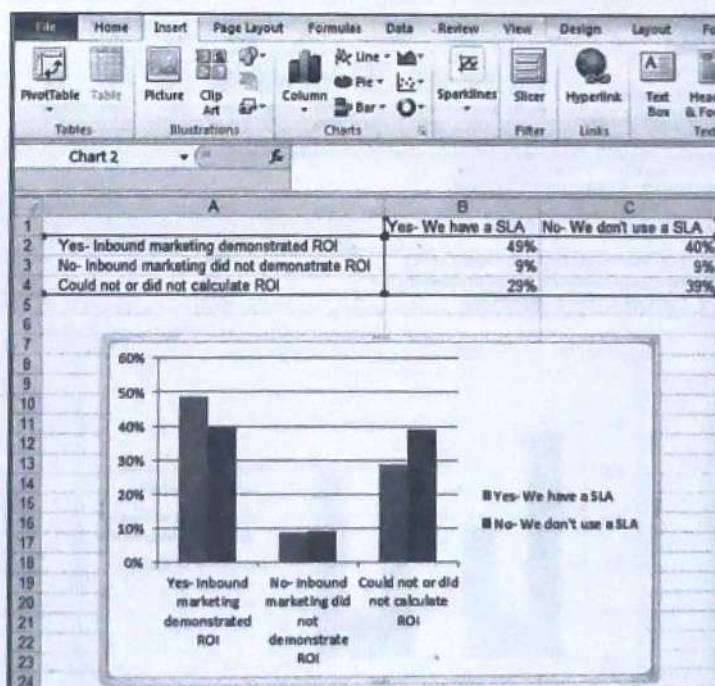
In the example below, in Column A, I have a list of responses to the question, 'Did inbound marketing demonstrate ROI?', and in Columns B, C, and D, I have the responses to the question, 'Does your company have a formal sales and marketing agreement?' For example, Column C, Row 2 illustrates that 49 per cent of people who have an SLA (service level agreement), also, say that inbound marketing demonstrated ROI.

	A	B	C	D
1		Yes- We have an SLA	No- We don't use an SLA	
2	Yes- Inbound marketing demonstrated ROI	49%	40%	
3	No- Inbound marketing did not demonstrate ROI	9%	9%	
4	Could not or did not calculate ROI	29%	39%	
5				

2.7.2 Choose a Type of Chart/Graph to Create

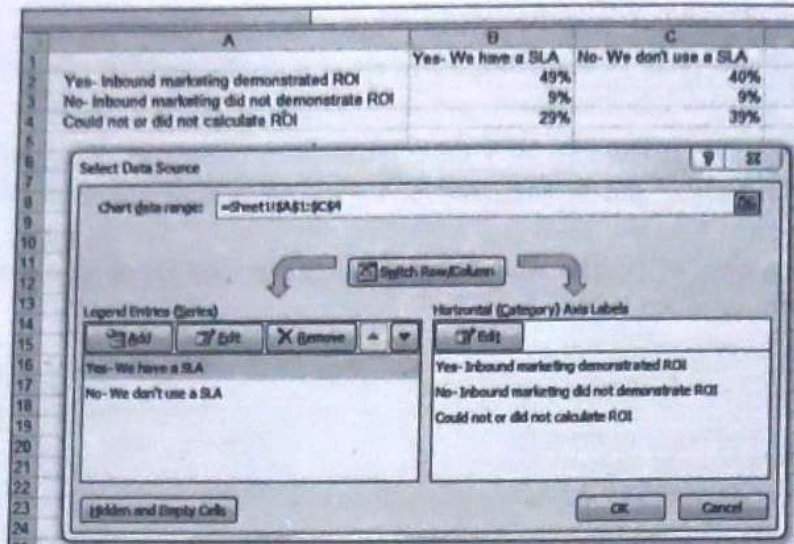
In Excel, you have plenty of choices for charts and graphs to create. (For help figuring out which type of chart/graph is best for visualising your data, check out our free ebook, *How to Use Data Visualization to Win Over Your Audience.*)

The data I'm working with will look best in a bar graph, so let's pursue making that one. To make a bar graph, highlight the data and include the titles of the X and Y axis. Go to the "Insert" tab, click under "Charts", click on "Column", and choose the graph you wish. In this example, I will be picking the first 2-D Column choice – just because I prefer it over the 3-D look.



2.7.3 Switch Axes, if Necessary

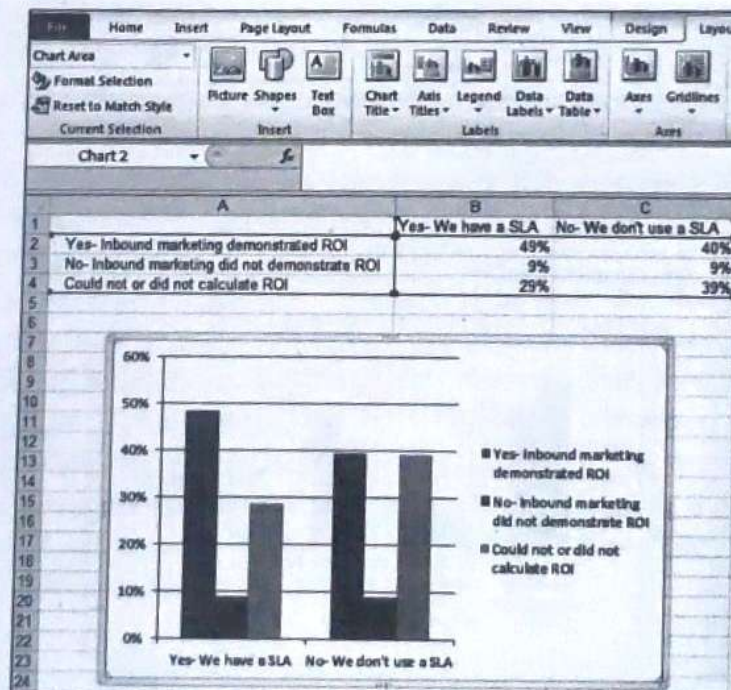
If you want to switch what appears on the X and Y axis, right-click on the bar graph, click "Select Data" and click "Switch Row/Column".



2.7.4 Adjust your Labels and Legends, if Desired

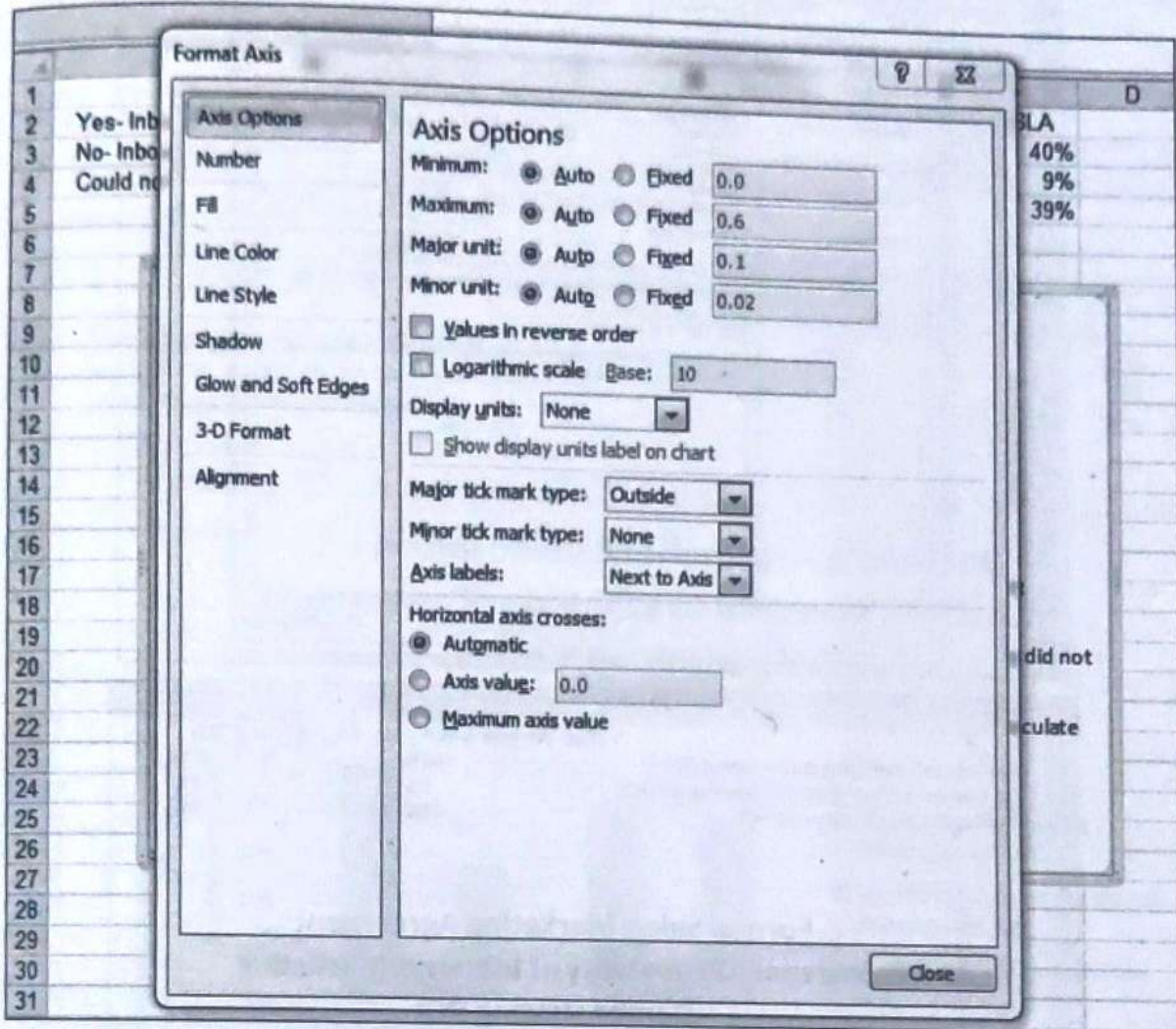
To change the layout of the labelling and legend, click on the bar graph, then click on the "Layout" tab. Here you can choose what layout you prefer for the chart title axis titles and legend.

In my example, I clicked on "Chart Title" and selected "Above Chart". To format the X axis title, I clicked on "Axis Titles" "Primary Horizontal Axis Title" and "Title Below Axis". To format the Y axis title, I clicked on "Axis Titles", "Primary Vertical Axis Title" and chose "Rotated Title". To change the placement of the legend, click on "Legend" on the "Layout" tab and choose your preferred location.



2.7.5 Change the Y axis Measurement Options, if Desired

To change the type of measurement shown on the Y axis, right-click on the Y axis percentages, and click on "Format Axis". Here you can decide if you want to display units located on the "Axis Options" tab, or if you want to change whether the Y axis shows percentages to 2 decimal places or to 0 decimal places.



The resulting graph would be changed to look like this:

Format Axis

Axis Options

- Number
- Fill
- Line Color
- Line Style
- Shadow
- Glow and Soft Edges
- 3-D Format
- Alignment

Number

Category: Decimal places:

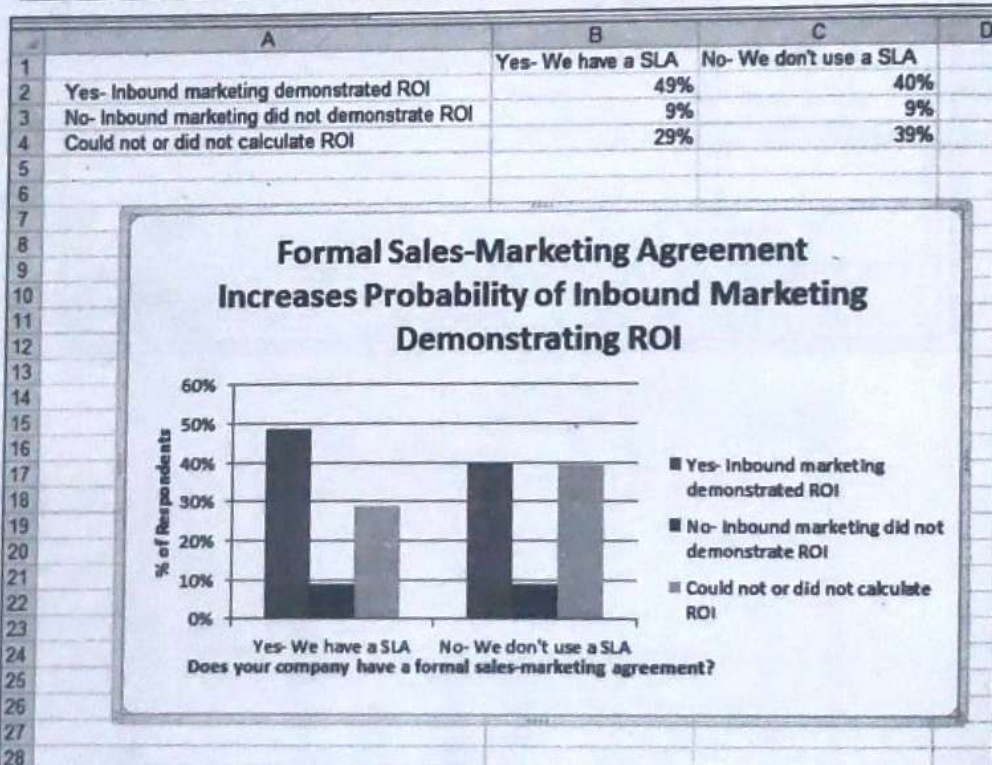
- General
- Number
- Currency
- Accounting
- Date
- Time
- Percentage
- Fraction
- Scientific
- Text
- Special
- Custom

Format Code: **Add**

To create a custom format, type in the Format Code box and click Add.

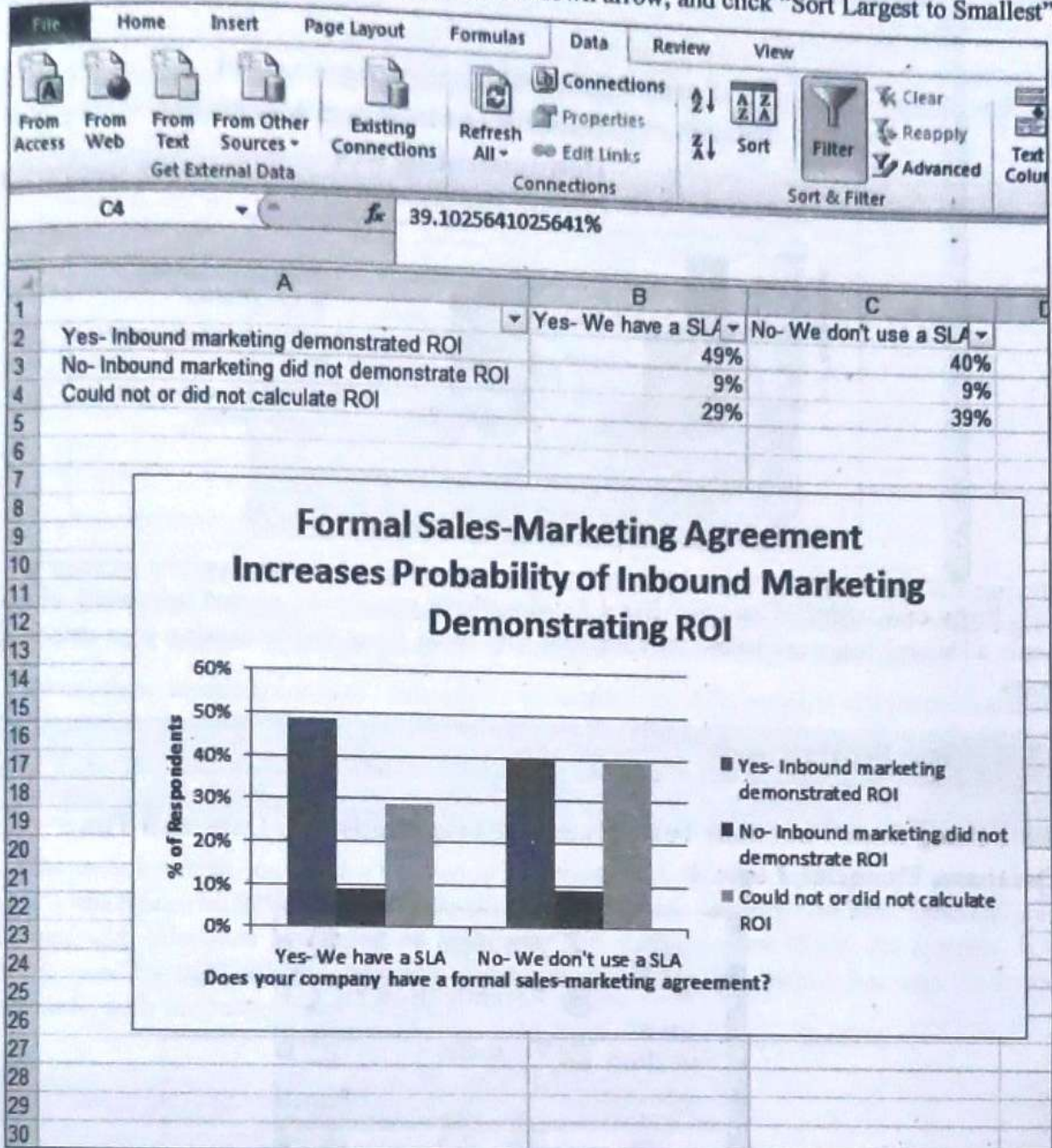
Linked to source
Percentage formats multiply the cell value by 100 and displays the result with a percent symbol.

Close

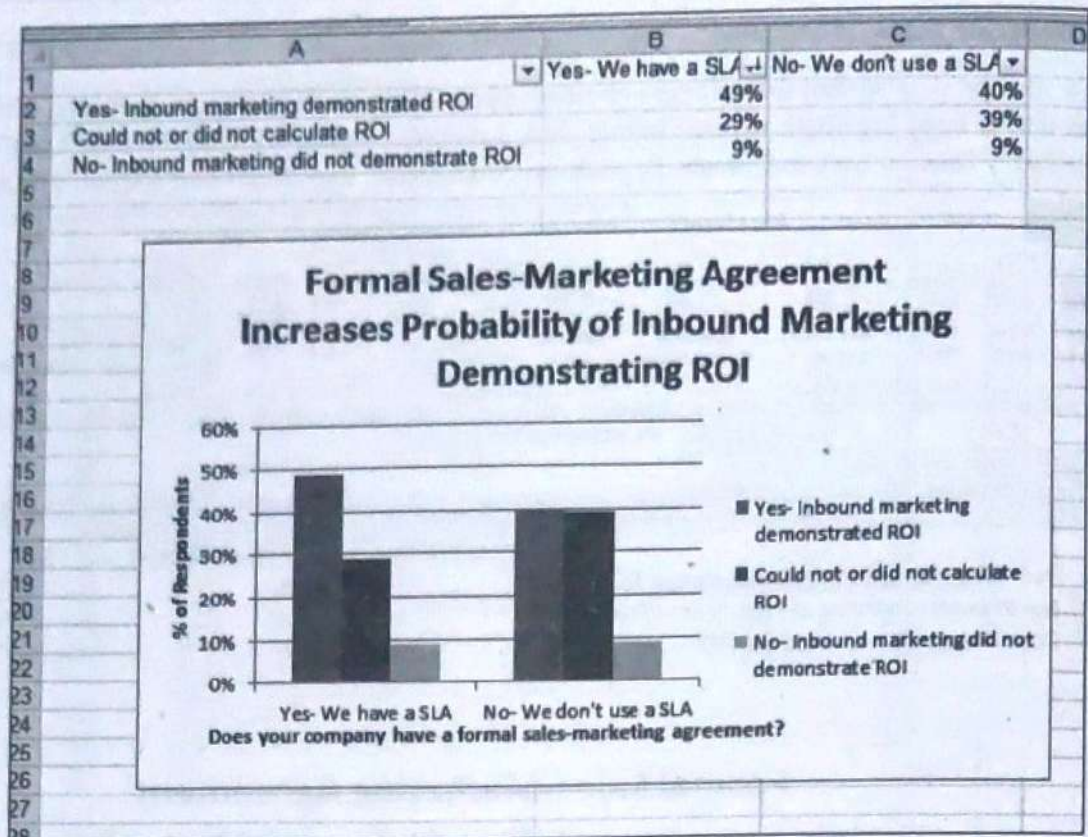


2.7.6 Reorder Data, if Desired

To sort the data so that the software choices appear in descending popularity order, click on the column that is most important to you (in this case, I picked Column B), click on the "Data" tab, and click "Filter". Then go back to Column B, click the down arrow, and click "Sort Largest to Smallest".



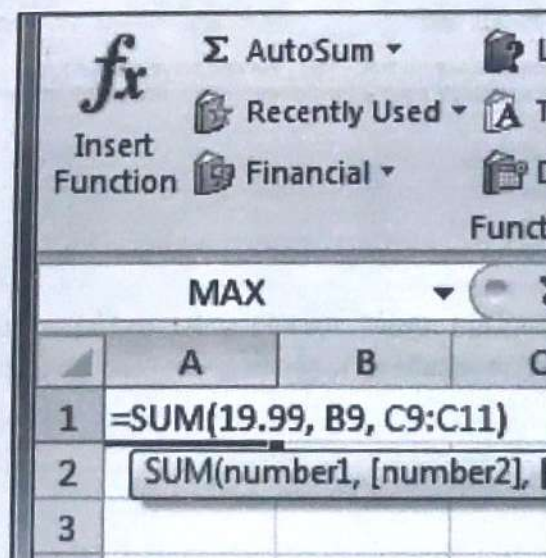
If you click on the downward arrows located at B1 and C1, you can choose to sort based on smallest to largest or largest to smallest, depending on your preference. Here, I sorted largest to smallest on B1.



Pretty easy, right? What other Excel functions have you always wanted help with? Check out some additional resources below for additional help using Excel and visualising your data in smart ways.

2.8 Basic Function

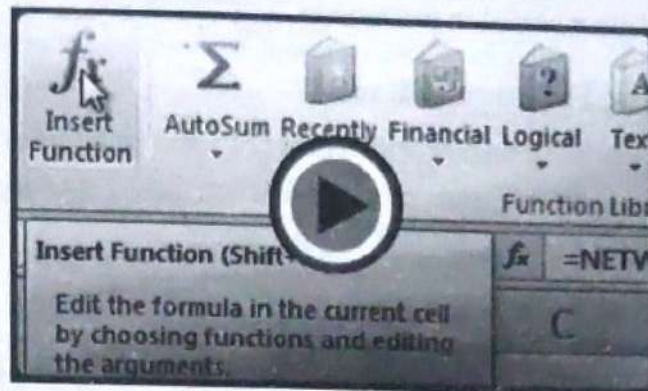
2.8.1 Using Basic Function: Text, Math and Trig, Statistical, Date and Time, Database, Financial, Logical



Figuring out formulas for calculations you want to make in Excel can be tedious and complicated. Fortunately, Excel has an entire library of functions – or predefined formulas – you can take advantage of. You may be familiar with common functions like sum, average, product, and count, but there are hundreds of functions in Excel, even for things like formatting text, referencing cells, calculating financial rates, and analysing statistics.

In this lesson, you'll learn the basics of inserting common functions into your worksheet by utilising the "AutoSum" and "Insert Functions" commands. You will also become familiar with how to search and find various functions, including exploring Excel's "Functions Library".

2.8.2 Video: Working with Basic Functions in Excel 2010

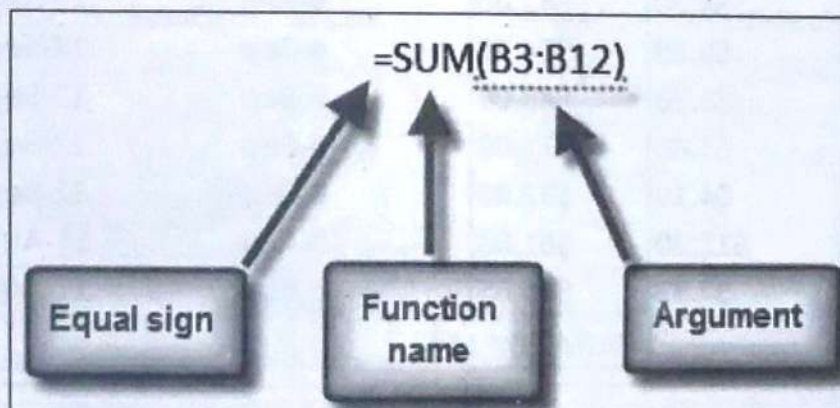


A function is a predefined formula that performs calculations using specific values in a particular order. One of the key benefits of functions is that they can save you time because you do not have to write the formula yourself. Excel has hundreds of functions to assist with your calculations.

To use these functions correctly, you need to understand the different parts of a function and how to create arguments in functions to calculate values and cell references.

2.9 The Parts of a Function

The order in which you insert a function is important. Each function has a specific order – called syntax – which must be followed in order for the function to work correctly. The basic syntax to create a formula with a function is to insert an equals sign (=), function name (SUM, for example, is the function name for addition), and argument. Arguments contain the information you want the formula to calculate, such as a range of cell references.



2.9.1 Working with Arguments

Arguments must be enclosed in parentheses. Individual values or cell references inside the parentheses are separated by either colons or commas.

- Colons create a reference to a range of cells.

For example, `=AVERAGE(E19:E23)` would calculate the average of the cell range E19 through E23.

- Commas separate individual values, cell references, and cell ranges in parentheses. If there is more than one argument, you must separate each argument by a comma.

For example, `=COUNT(C6:C14,C19:C23,C28)` will count all the cells in the three arguments that are included in parentheses.

2.9.2 To Create a Basic Function in Excel

1. Select the cell where the answer will appear (F15, for example).
2. Type the equals sign ("="), then enter the function name ("SUM", for example).

\$12.20	\$61.00	8-Aug	11-Aug
\$7.33	\$36.65	8-Aug	11-Aug
	=SUM		
	<ul style="list-style-type: none"> ☑ SUM ☒ SUMIF ☒ SUMIFS ☒ SUMPRODUCT ☒ SUMSQ ☒ SUMX2MY2 ☒ SUMX2PY2 ☒ SUMXMY2 	Adds all the numbers in a range of cells	
Unit Price		Ordered	Date Received
\$12.03		18-Sep	26-Sep
\$15.95		18-Sep	26-Sep
\$5.87		8-Aug	14-Aug
\$8.83		8-Aug	14-Aug
\$13.54	\$27.08	22-Jul	29-Jul

3. Enter the cells for the argument inside the parentheses.

Unit Price	Subtotal	Date Ordered	Date Received
\$5.86	\$58.60	12-Sep	17-Sep
\$40.26	\$80.52	12-Sep	17-Sep
\$4.20	\$42.00	6-Sep	12-Sep
\$6.19	\$74.28	6-Sep	12-Sep
\$3.20	\$48.00	6-Sep	12-Sep
\$3.40	\$17.00	6-Sep	12-Sep
\$4.10	\$32.80	6-Sep	12-Sep
\$12.20	\$61.00	8-Aug	11-Aug
\$7.33	\$36.65	8-Aug	11-Aug
	=SUM(F6:F14)		

4. Press "Enter", and the result will appear.

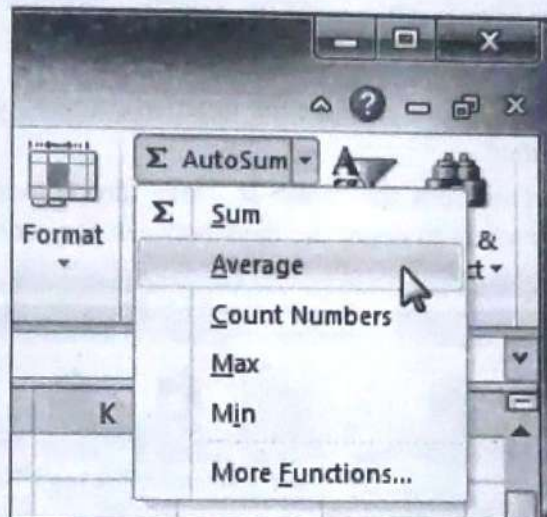
\$450.85

Excel will not always tell you if your function contains an error, so it's up to you to check all of your functions. To learn how to do this, read the "Double-Check Your Formulas" lesson from our a Excel Formulas tutorial.

2.9.3 Using AutoSum to Select Common Functions

The "AutoSum" command allows you to automatically return the results for a range of cells for common functions like "SUM" and "AVERAGE".

1. Select the cell where the answer will appear (E24, for example).
2. Click the "Home" tab.
3. In the "Editing" group, click the "AutoSum" drop-down arrow and select the function you want ("Average", for example).



4. A formula will appear in E24, the selected cell. If logically placed, AutoSum will select your cells for you. Otherwise, you will need to click the cells to choose the argument you want.

Unit Price	Subtotal	Date Ordered	Date Received
\$12.03	\$36.09	18-Sep	26-Sep
\$15.95	\$31.90	18-Sep	26-Sep
\$5.87	\$58.70	8-Aug	14-Aug
\$8.83	\$88.30	8-Aug	14-Aug
\$13.54	\$27.08	22-Jul	29-Jul
=AVERAGE(E19:E23)			
AVERAGE(number1, [number2], ...)			
Subtotal			

5. Press "Enter", and the result will appear.
- The "AutoSum" command can, also, be accessed from the "Formulas" tab.

You can also use the "Alt" + "=" keyboard shortcut instead of the "AutoSum" command. To use this shortcut, hold down the "Alt" key and then press the equals sign ("=").

2.10 Challenge!

1. Open an existing Excel 2010 workbook. If you want, you can use this example.
2. Create a function that contains more than one argument.
3. Use "AutoSum" to insert a function. If you are using the example, insert the "MAX" function in cell E15 to find the highest-priced supply.
4. Insert a function from the "Functions Library". If you are using the example, find the "PRODUCT" function (multiply) to calculate the "Unit Quantity" times the "Unit Price" in cells F19 through F23.
5. Use the "Insert Function" command to search and explore functions.

To insert a Function from the Function Library

1. Select the cell where the answer will appear (I6, for example).
2. Click the "Formulas" tab.
3. From the "Function Library" group, select the function category you want. In this example, we'll choose "Date & Time".
4. Select the desired function from the "Date & Time" drop-down menu. We'll choose the "NETWORKDAYS" function to count the days between the order date and receive date in our worksheet.

The screenshot shows the Excel interface with the 'Formulas' tab selected. The 'Function Library' group is open to 'Date & Time', and the 'NETWORKDAYS' function is highlighted. The tooltip for 'NETWORKDAYS' is visible, showing the syntax: NETWORKDAYS(start_date, end_date, holidays) and the description: Returns the number of whole workdays between two dates. The worksheet below shows a table with the following data:

	A	B	E	F
2	Office Supply Order Log	Jul-Sep 2010		
3				
4	OfficeMax			
5	Office Supply	Item Number	Unit Price	Subtotal
6	File Folders	EGC38290	\$5.86	\$58.6
7	Copy Paper	LBG43576	\$40.26	\$80.5
8	Paperclips	CAD789237	\$4.20	\$42.0
9	Binder Clips (Multi)	CAD256903		
10	Pens (Blue)	KLH78902		
11	Pens (Red)	KLH78904		
12	Highlighter Pens (Yellow)	STA73298		
13	Sticky Notes	JUG198430		

- The "Function Arguments" dialog box will appear. Insert the cursor in the first field, then enter or select the cell(s) you want (G6, for example).

Quantity Type	Unit Price	Subtotal	Date Ordered	Date Received	Delivery Time
10 boxes	\$5.86	\$58.60	12-Sep	17-Sep	NETWORKDAYS(G6)
2 cartons	\$40.26	\$80.52	12-Sep	17-Sep	

Function Arguments

NETWORKDAYS

Start_date: G6 = 40433

End_date: = any

Holidays: = any

=

Returns the number of whole workdays between two dates.

Start_date is a serial date number that represents the start date.

Formula result =

[Help on this function](#)

OK Cancel

- Insert the cursor in the next field, then enter or select the cell(s) you want (H6, for example).

Quantity Type	Unit Price	Subtotal	Date Ordered	Date Received	Delivery Time
10 boxes	\$5.86	\$58.60	12-Sep	17-Sep	NETWORKDAYS(G6,H6)
2 cartons	\$40.26	\$80.52	12-Sep	17-Sep	

Function Arguments

NETWORKDAYS

Start_date: G6 = 40433

End_date: H6 = 40438

Holidays: = any

= 5

Returns the number of whole workdays between two dates.

End_date is a serial date number that represents the end date.

Formula result = 5

[Help on this function](#)

OK Cancel

View formula result

- Click "OK", and the result will appear. Our results show that it took five days to receive the order.

Date Ordered	Date Received	
12-Sep	17-Sep	5

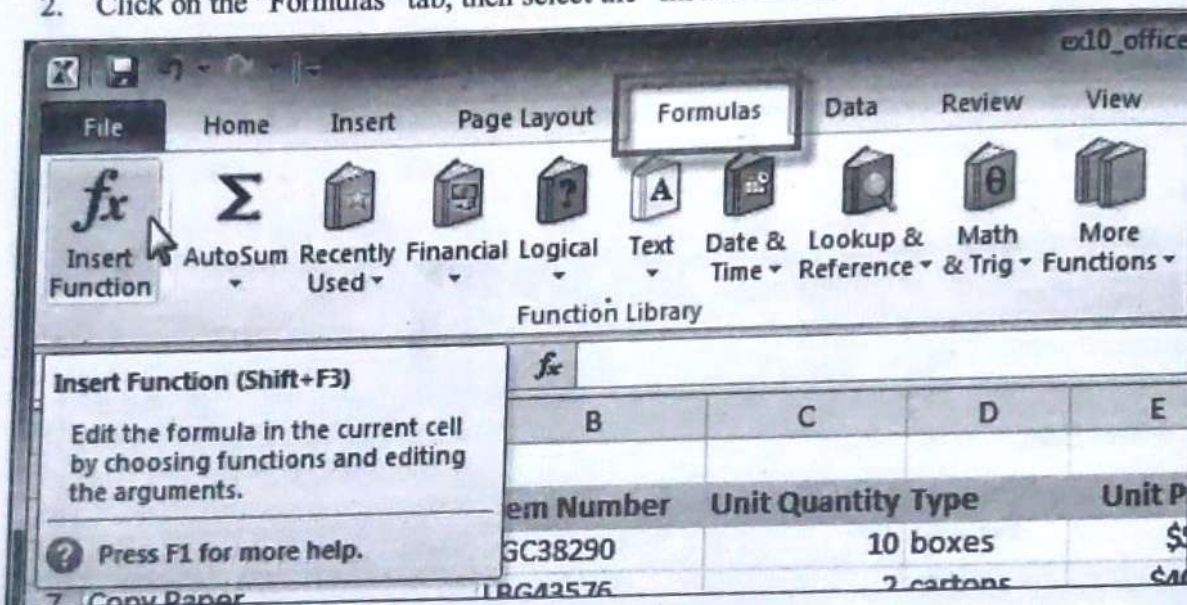
2.11 The Insert Function Command

The Insert function command is convenient because it allows you to search for a function by typing a description of what you're looking for or by selecting a category to peruse. The Insert function command can, also, be used to easily enter or select more than one argument for a function.

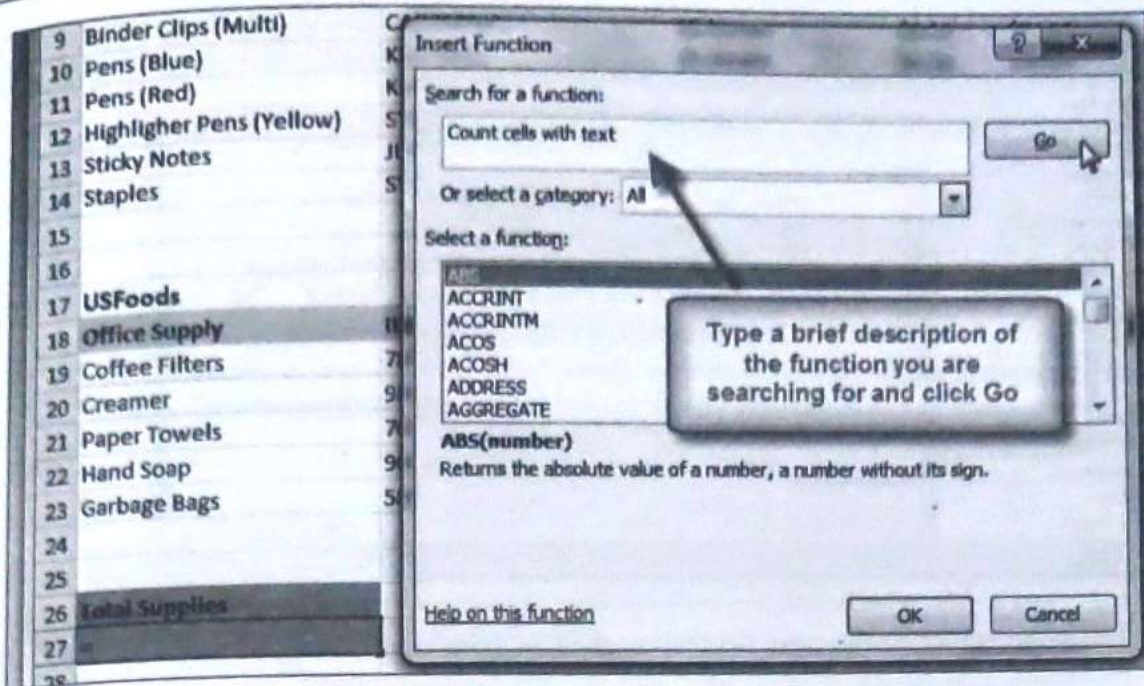
2.11.1 Using the Insert Function Command

In this example, we want to find a function that will count the total number of supplies listed in the Office Supply Order Log. The basic "COUNT" function only counts cells with numbers; we want to count the cells in the "Office Supply" column, which uses text. Therefore, we'll need to find a formula that counts cells with text.

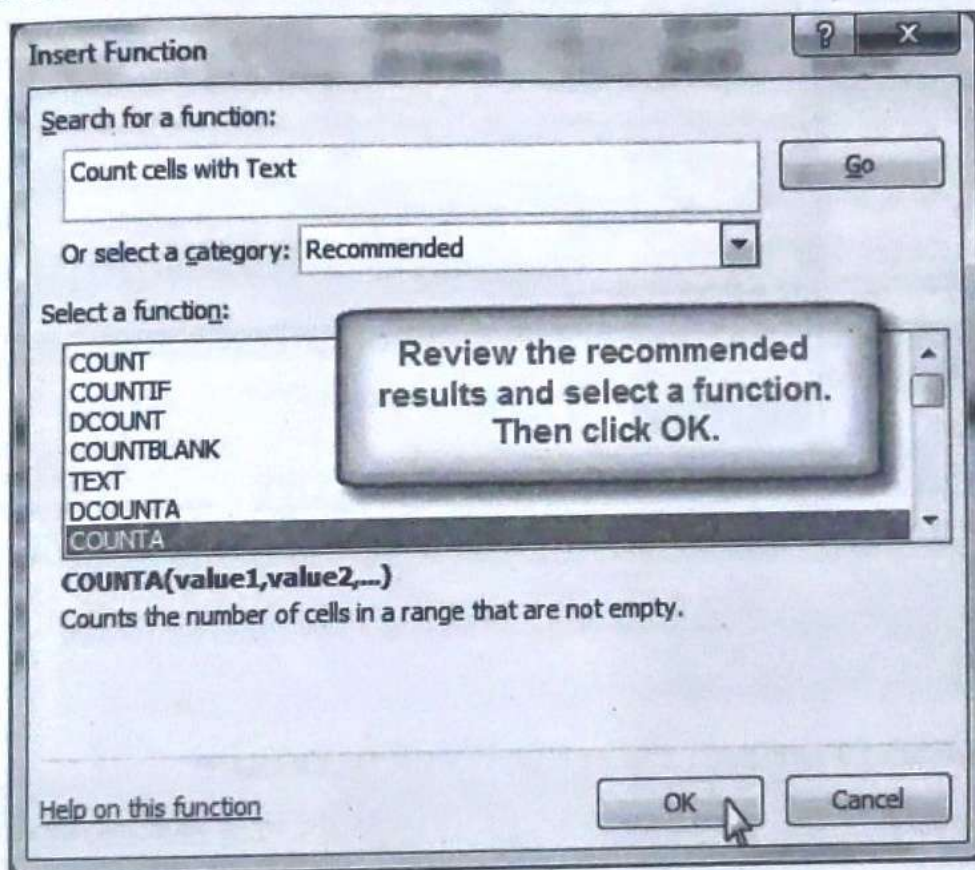
- Select the cell where the answer will appear (A27, for example).
- Click on the "Formulas" tab, then select the "Insert Function" command.



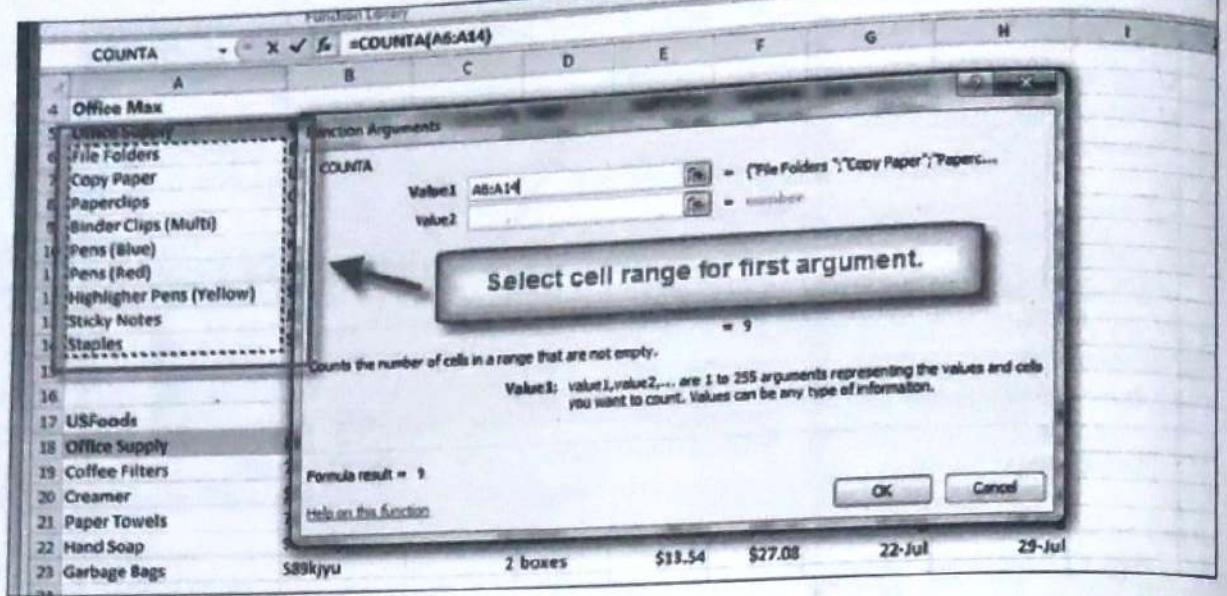
- The "Insert Function" dialog box will appear.
- Type a description of the function you are searching for, then click "Go" ("Count cells with text", for example). You can, also, search by selecting a category.



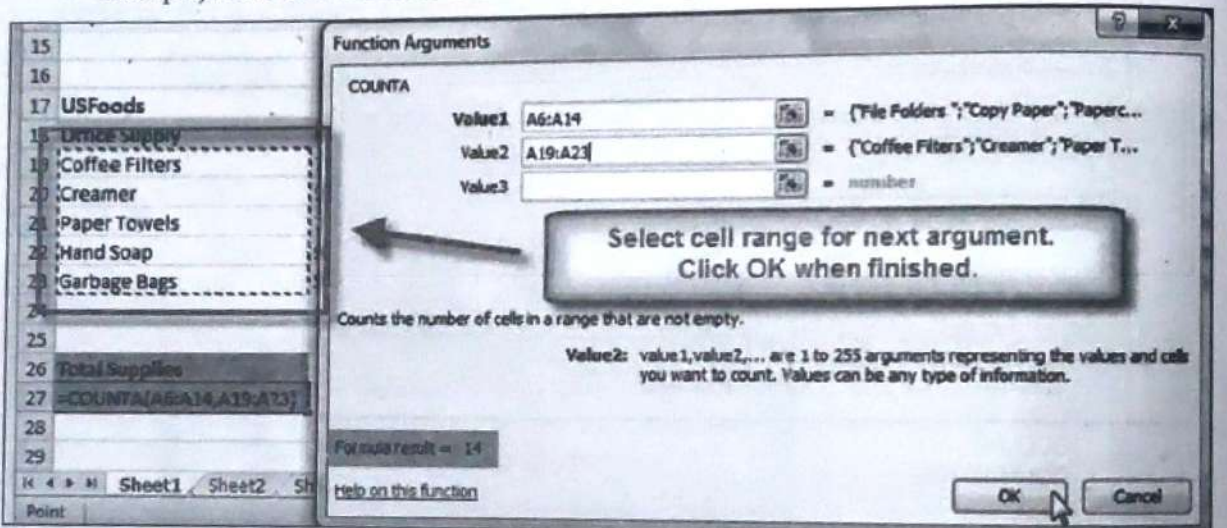
5. Review the results to find the function you want ("COUNTA", for example). Click "OK".



6. The "Function Arguments" dialog box will appear. Insert the cursor in the first field, then enter or select the cell(s) you want (A6:A14, for example).



7. Insert the cursor in the next field, then enter or select the cell(s) you want (A19:A23, for example). You can continue to add additional arguments if needed.



8. Click "OK", and the result will appear. Our results show that 14 total supplies were ordered from our log.

Total Supplies
14

2.11.2 Using Advance Functions: Use of VLOOKUP/HLOOKUP

If you're comfortable with basic functions, you may want to try a more advanced one like "VLOOKUP". You can check How to Use Excel's VLOOKUP Function for more information. If you want to learn even more about functions, check out an **Excel formulas** tutorial.

2.12 Data Analysis

2.12.1 Sorting Data

Types of Sorting

When sorting data, it's important to first decide if you want the sort to apply to the entire worksheet or just a cell range.

- Sort sheet organises all of the data in your worksheet by one column. Related information across each row is kept together when the sort is applied. In the example below, the Contact Name column (column A) has been sorted to display the names in alphabetical order.

	A	B	C	D
1	Customer Contact List			
2	CONTACT NAME	BILLING ADDRESS	PHONE	EMAIL ADDRESS
3	Bell, William	2201 Treasure Court	206-555-2303	wbell@bishopresearch.com
4	Dean, Hank	3034 Foggy Wharf	308-555-1050	hdean@venturebrewing.com
5	Figgis, Mallory	3520 Sleepy Hearth Dr	425-555-5370	malloryf@archerproperties.com
6	Finn, Jake	1407 Dusty Fawn Ln	605-555-6435	jake@adventureoutfitters.com
7	Kinkade, Chris	1028 Quiet Dale Rd	443-555-4942	chris.kinkade@placervilleins.com
8	Lawson, Miranda	5316 Colonial Pkwy	575-555-9255	mlawson@massairlines.com
9	Reyes, Felicia	8544 Lazy Bluff Ave	316-555-3256	felicia@everlypublishing.com
10	Sebastian, Lil	9060 Easy Evening Ln	207-555-7225	lil@knopeequestrian.com
11	Silva, Vivica	8595 Thunder Brook	360-555-4289	vivica@rileygardensupply.com
12	Stark, Katie	971 Cinder Butterfly St	603-555-2460	katie.stark@ariarealestate.com
13	Torrance, Jill	3160 Amber Gate Rd	605-555-4495	jtorrance@overlookinn.com
14	Yuen, Phillip	5108 Crystal Gate Blvd	913-555-5928	yuenp@corepharmaceuticals.com

- Sort range sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables. Sorting a range will not affect other content on the worksheet.



	A	B	C	D	E
1	Exercises	Set 1		Set 2	
2		Reps	Weight (lbs)	Reps	Weight (lbs)
3	Bench Press	14	65	12	75
4	Bench Press (Decline)	10	60	8	70
5	Triceps Extension	15	35	20	35
6	Average	13.9	50.5	12.5	54
7					
8		Running Log			
9		Date	Distance (miles)	Time (hrs:mins)	
10		26-Jul	2.8	0:45	
11		27-Jul	3	0:44	
12		28-Jul	2.75	0:42	
13		29-Jul	3.25	0:44	
14		30-Jul	3.25	0:45	
15		31-Jul	2.5	0:44	
16		1-Aug	3	0:38	
17		Total	20.55		

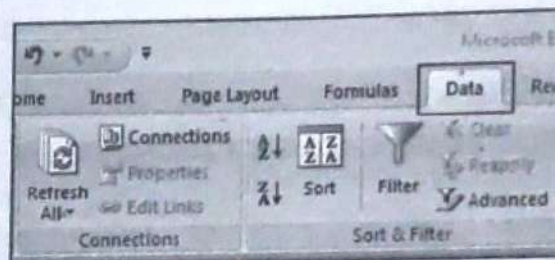
To Sort a Sheet

In our example, we'll sort a T-shirt order alphabetically by Last Name (column C).

1. Select a cell in the column you want to sort by. In our example, we select cell C2.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	105	Christiana	Chen	Medium	Check Bounced
3	105	Derek	MacDonald	Large	Cash
4	105	Esther	Yaron	Small	Pending
5	105	Melissa	White	Small	Debit Card
6	105	Nathan	Albee	Medium	Check
7	105	Sidney	Kelly	Medium	Check
8	110	Gabriel	Del Toro	Medium	Cash
9	110	Kris	Ackerman	Large	Money Order

2. Select the Data tab on the Ribbon, then click the Ascending command  to Sort A to Z, or the Descending command  to Sort Z to A. In our example, we'll click the Ascending command.



3. The worksheet will be sorted by the selected column. In our example, the worksheet is now sorted by the last name.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	110	Kris	Ackerman	Large	Money Order
3	105	Nathan	Albee	Medium	Check
4	220-B	Samantha	Bell	Medium	Check
5	110	Matt	Benson	Medium	Money Order
6	105	Christiana	Chen	Medium	Cash
7	110	Gabriel	Del Toro	Medium	Cash
8	220-A	Brigid	Ellison	Small	Cash
9	220-A	Juan	Flores	X-Large	Pending
10	220-B	Tyrese	Hanlon	X-Large	Debit Card

To Sort a Range

In our example, we'll select a separate table in our T-shirt order form to sort the number of T-shirts that were ordered on different dates.

1. Select the cell range you want to sort. In our example, we'll select cell range A13:B17

5R x 2C		Date	
A	B	C	D
1	Room #	First Name	Last Name
2	110	Kris	Ackerman
3	105	Nathan	Albee
4	220-B	Samantha	Bell
5	110	Matt	Benson
6	105	Christiana	Chen
7	110	Gabriel	Del Toro
8	220-A	Brigid	Ellison
9	220-A	Juan	Flores
10	220-B	Tyrese	Hanlon
11			
Total Orders By Date			
13	Date	Orders	
14	Friday, April 05, 2013	4	
15	Friday, April 12, 2013	7	
16	Friday, April 19, 2013	10	
17	Friday, April 26, 2013	6	

2.12.2 Filtering Data (Auto Filter, Advanced Filter)

Auto filter

Advanced filter

1. Enter the criteria shown below on the worksheet.

	A	B	C	D	E
1	Last Name	Sales	Country	Quarter	
2			USA	Qtr 4	
3					
4					
5	Last Name	Sales	Country	Quarter	
6	Smith	\$16,753.00	UK	Qtr 3	
7	Johnson	\$14,808.00	USA	Qtr 4	
8	Williams	\$10,644.00	UK	Qtr 2	
9	Jones	\$1,390.00	USA	Qtr 3	
10	Brown	\$4,865.00	USA	Qtr 4	
11	Williams	\$12,438.00	UK	Qtr 1	
12	Johnson	\$9,339.00	UK	Qtr 2	
13	Smith	\$18,919.00	USA	Qtr 3	
14	Jones	\$9,213.00	USA	Qtr 4	
15	Jones	\$7,433.00	UK	Qtr 1	
16	Brown	\$3,255.00	USA	Qtr 2	
17	Williams	\$14,867.00	USA	Qtr 3	
18	Williams	\$19,302.00	UK	Qtr 4	
19	Smith	\$9,698.00	USA	Qtr 1	

2. Click any single cell inside the data set
3. On the Data tab, in the Sort and Filter group, click Advanced.



4. Click in the Criteria range box and select the range A1-D2(below)
5. Click OK.



Notice the options to copy your filtered data set to another location and display unique records only (if your data set contains duplicates).

Result:

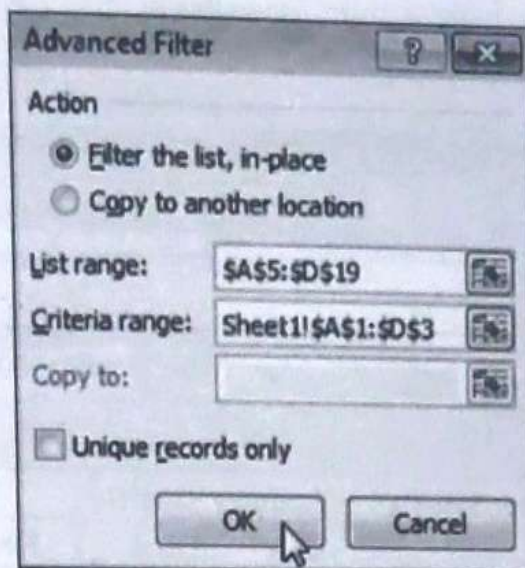
	A	B	C	D	E
1	Last Name	Sales	Country	Quarter	
2			USA	Qtr 4	
3					
4					
5	Last Name	Sales	Country	Quarter	
7	Johnson	\$14,808.00	USA	Qtr 4	
10	Brown	\$4,865.00	USA	Qtr 4	
14	Jones	\$9,213.00	USA	Qtr 4	
20					

No rocket science so far. We can achieve the same result with the normal filter. We need the Advanced Filter for Or Criteria.

Or Criteria

To display the sales in the USA in Qtr 4 or in the UK in Qtr 1, execute the following steps:

6. Enter the criteria shown below on the worksheet.
7. On the Data tab, in the Sort and Filter group, click Advanced, and adjust the Criteria range to range A1:D3 (blue).
8. Click OK.



Result:

	A	B	C	D
1	Last Name	Sales	Country	Quarter
2			USA	Qtr 4
3			UK	Qtr 1
4				
5	Last Name	Sales	Country	Quarter
7	Johnson	\$14,808.00	USA	Qtr 4
10	Brown	\$4,865.00	USA	Qtr 4
11	Williams	\$12,438.00	UK	Qtr 1
14	Jones	\$9,213.00	USA	Qtr 4
15	Jones	\$7,433.00	UK	Qtr 1
20				

Formula as Criteria

To display the sales in the USA in Qtr 4 greater than \$10,000 or in the UK in Qtr (?) execute the following steps:

9. Enter the criteria (+ formula) shown below on the worksheet.
10. On the Data tab, in the sort and Filter group, click Advanced, and adjust the Criteria range to range A1:E3 (blue).
11. Click OK.

Advanced Filter

Action

Filter the list, in-place

Copy to another location

List range:

Criteria range:

Copy to:

Unique records only

OK Cancel

Result:

	A	B	C	D	E	F
1	Last Name	Sales	Country	Quarter		
2			USA	Qtr 4	TRUE	
3			UK	Qtr 1		
4						
5	Last Name	Sales	Country	Quarter		
7	Johnson	\$14,808.00	USA	Qtr 4		
11	Williams	\$12,438.00	UK	Qtr 1		
15	Jones	\$7,433.00	UK	Qtr 1		
20						

2.12.3 Data Validation

Data Validation Example

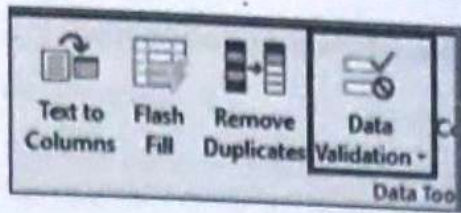
In this example, we restrict users to enter a whole number between 0 and 10.

	A	B	C	D
1				
2		How many glasses of alcohol do you drink per day?		
3				

Create Data Validation Rule

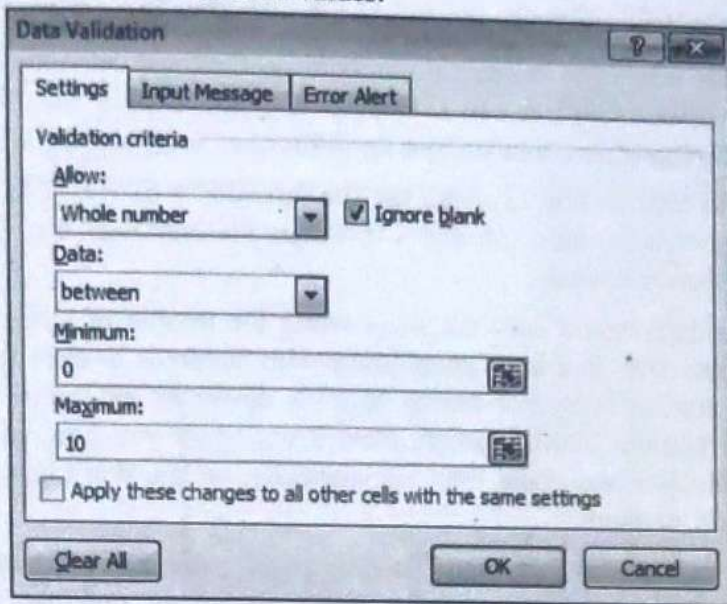
1. To create the data validation rule, execute the following steps:
2. Select cell C2.

On the Data tab, in the Data Tools group, click Data Validation.



On the setting tab:

3. In the Allow list, click Whole number.
4. In the Data list, click between.
5. Enter the Minimum and Maximum values.



3485

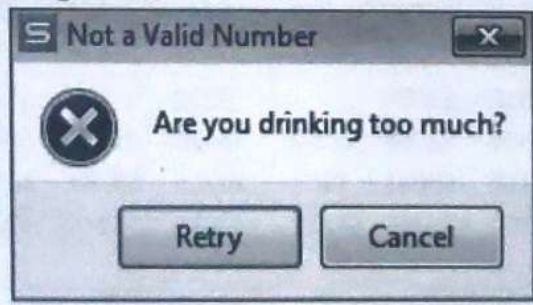


Data Validation Result

1. Select cell C2.

A	B	C	D
	How many glasses of alcohol do you drink per day?		
		Glasses of Alcohol Please enter a whole number between 0 and 10	

2. Try to enter a number higher than 10.



2.12.4 What-if Analysis (using data table/scenarios)

Creating Subtotals and Grand Totals

If you have a list of invoices in Excel, and you want that list to show a total for each month and for the year, most people would use the SUM function to total each month. But, if you try to do that for the year you will end up totalling both the invoices and the monthly totals, unless you move the monthly totals to a separate column. Another common approach is to write a formula that points to each monthly total and adds them up. The beauty of the SUBTOTAL function is that you can add up the whole column and yet it will ignore the other SUBTOTALS that it finds.

Here is an example of how it works.

Let's say that I want a subtotal in cell C4 that adds up the three cells above it. I would enter the formula "`=SUBTOTAL(9,C1:C3)`" in cell C4. As you would expect, the "C1:C3" designates the range of cells from C1 through C3. I'll talk about the 9 later.

Now, to put a grand total on line 11, I can use the formula "`=SUBTOTAL(9,C1:C10)`". Notice that the range doesn't exclude cells C4 and C9 where the subtotals are. The subtotal function automatically excludes these amounts.

In a small example like this, it may not seem worth the trouble of trying to remember how to enter the subtotal function. But, in a large spreadsheet with hundreds to even thousands of lines, you can save a lot of time and effort by not having to track down the individual ranges that would be needed to use the more familiar SUM function. Next, I will show you how, in many cases, you can have Excel insert the subtotals and grand total automatically, so you don't have to remember how to enter the subtotal function yourself.

Now, back to the mysterious "9" that I said I would explain. The subtotal function has 11 different options that can be chosen. Among other things, it can add, multiply, count, or average, the entries in a given range of cells. The 9 simply tells Excel to add or sum the cells in the range. For a complete list of options, search for SUBTOTAL FUNCTION in Excel's help.

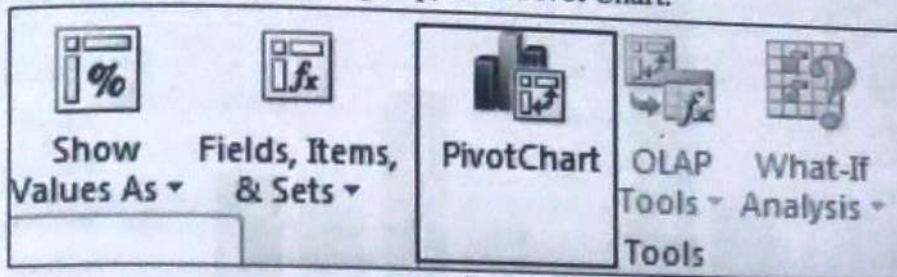
Pivot Table/chart

	A	B	C	D	E	F	G	H	I	J
1	Category	(All) ▾								
2										
3	Sum of Amount	Column ▾								
4	Row Labels ▾	Apple	Banana	Beans	Broccoli	Carrots	Mango	Orange	Grand Total	
5	Australia	20634	52721	14433	17953	8106	9186	8680	131713	
6	Canada	24867	33775		12407		3767	19929	94745	
7	France	80193	36094	680	5341	9104	7388	2256	141056	
8	Germany	9082	39686	29905	37197	21636	8775	8887	155168	
9	New Zealand	10332	40050		4390			12010	66782	
10	United Kingdom	17534	42908	5100	38436	41815	5600	21744	173137	
11	United States	28615	95061	7163	26715	56284	22363	30932	267133	
12	Grand Total	191257	340295	57281	142439	136945	57079	104438	1029734	
13										

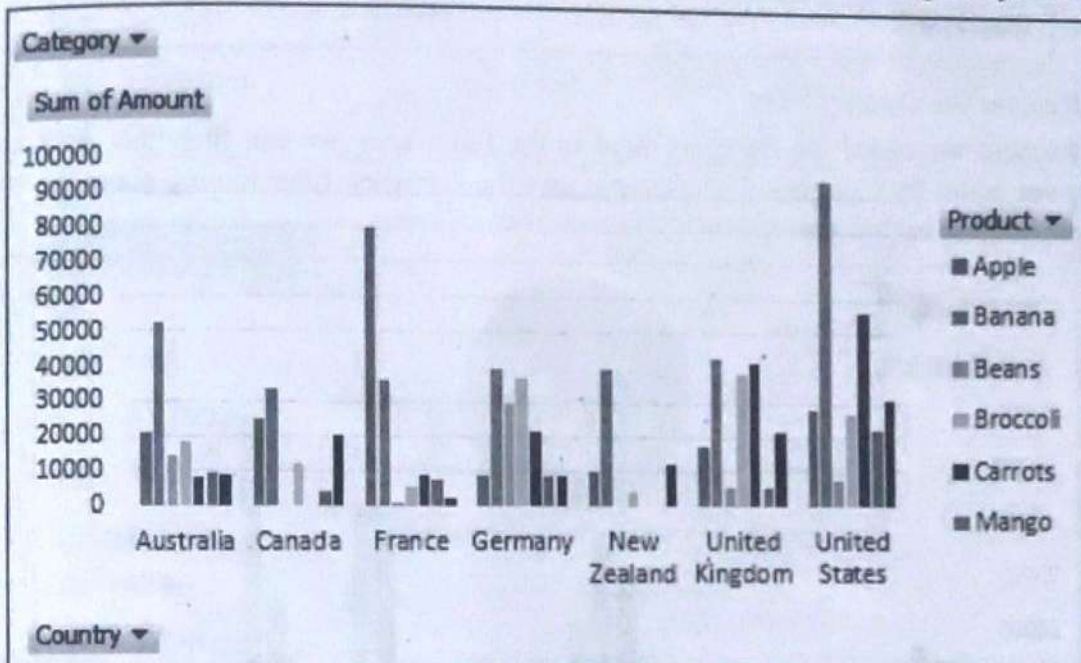
Insert Pivot Chart

To insert a pivot chart, execute the following steps”

1. Click on cell inside the pivot table.
2. On the Analyze tab, in the Tools group, click Pivot Chart.



Below you can find the pivot chart. This pivot chart will amaze and impress your boss.

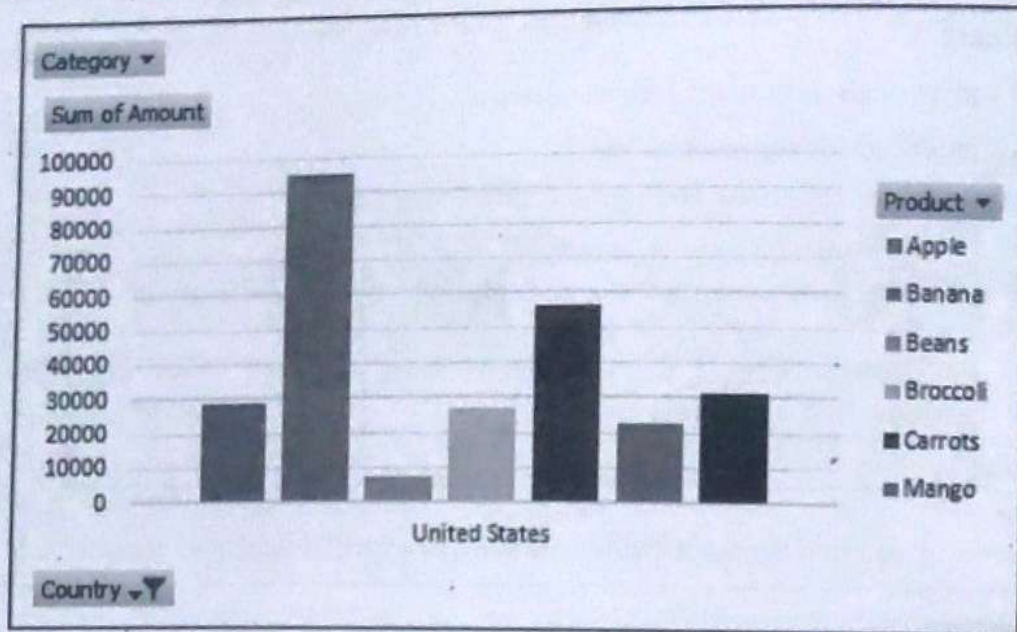


Note: Any changes you make to the pivot chart are immediately reflected in the pivot table and vice versa.

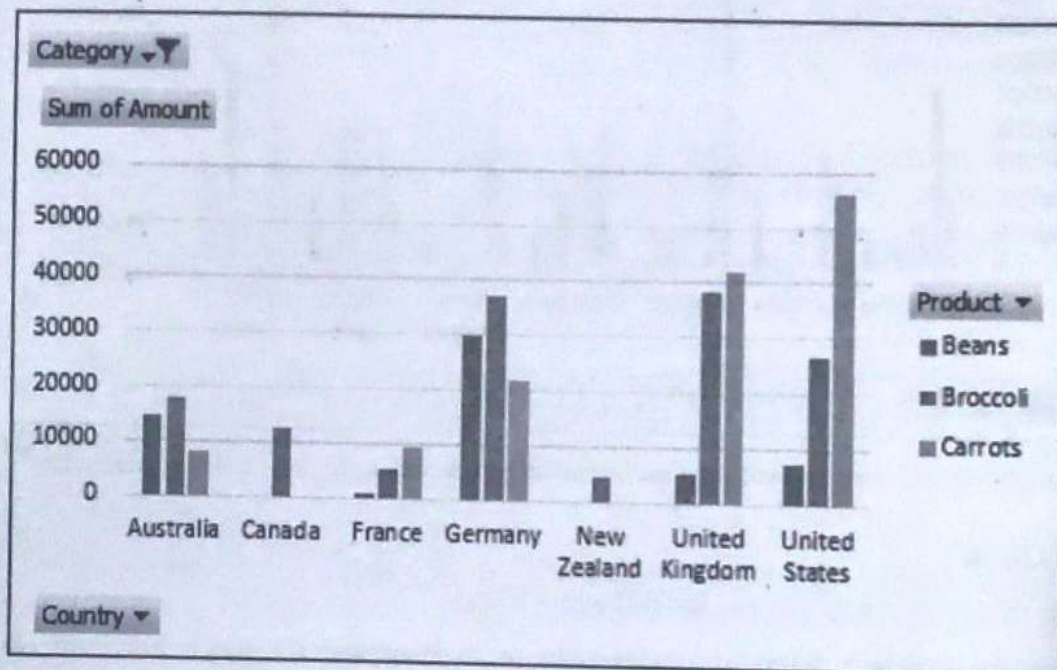
Filter Pivot Chart

To filter this pivot chart, execute the following steps:

1. Use the standard filters (triangles next to Product and Country). For example, use the Country filter to only show the total amount of each product exported to the United States.



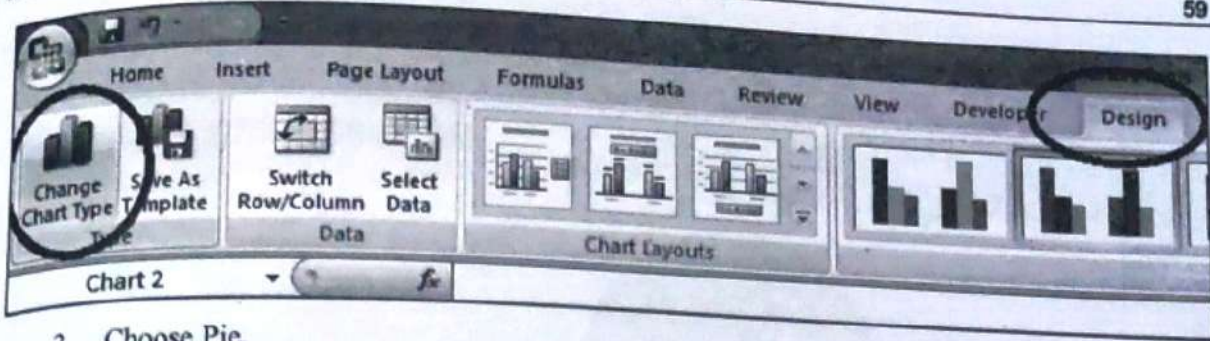
2. Remove the Country filter.
3. Because we added the Category field to the Filter area, we can filter this pivot chart (and pivot table) by Category. For example, use the Category filter to only show the vegetables exported to each country.



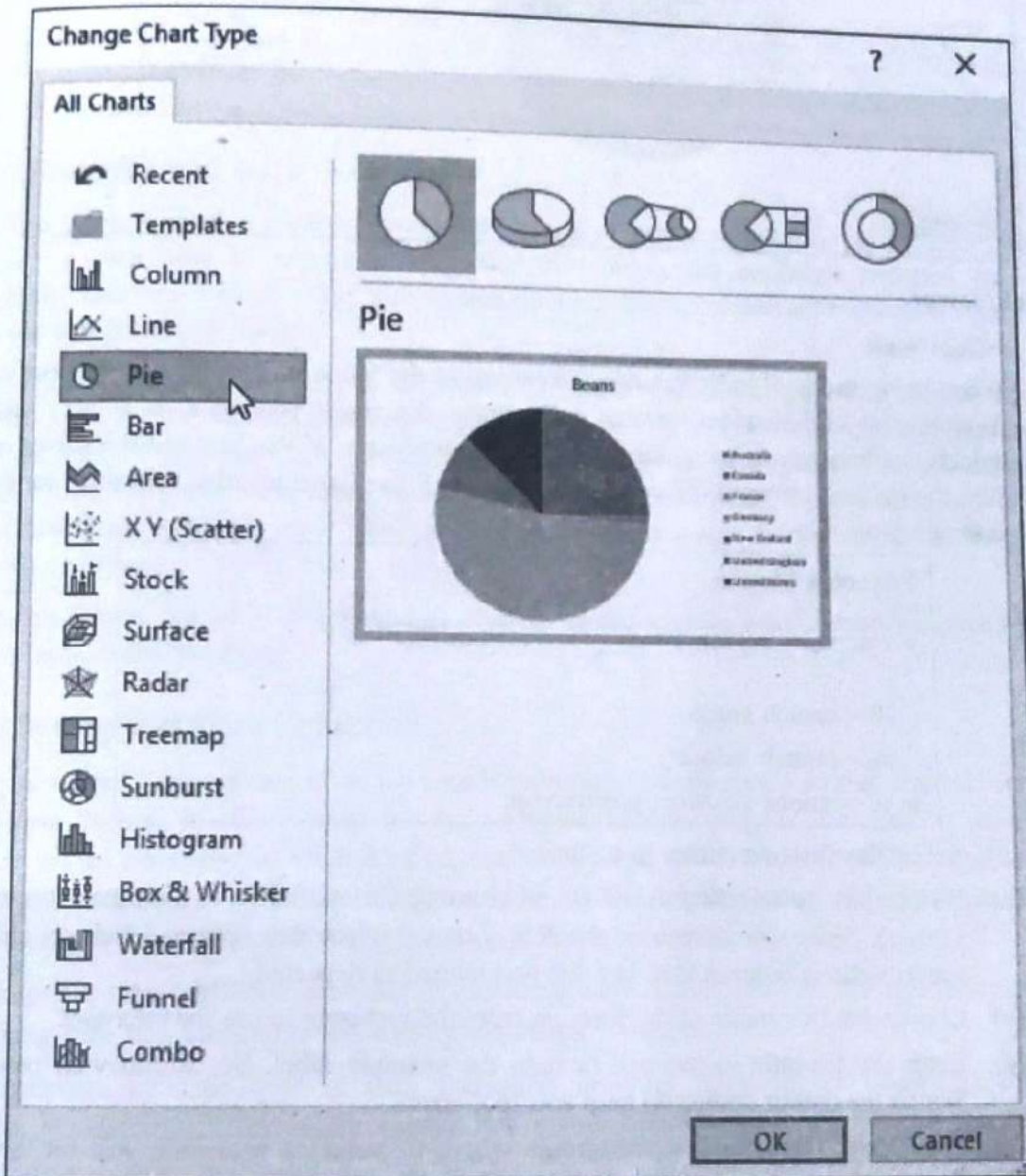
Change Pivot Chart Type

You can change to a different type of pivot chart at any time.

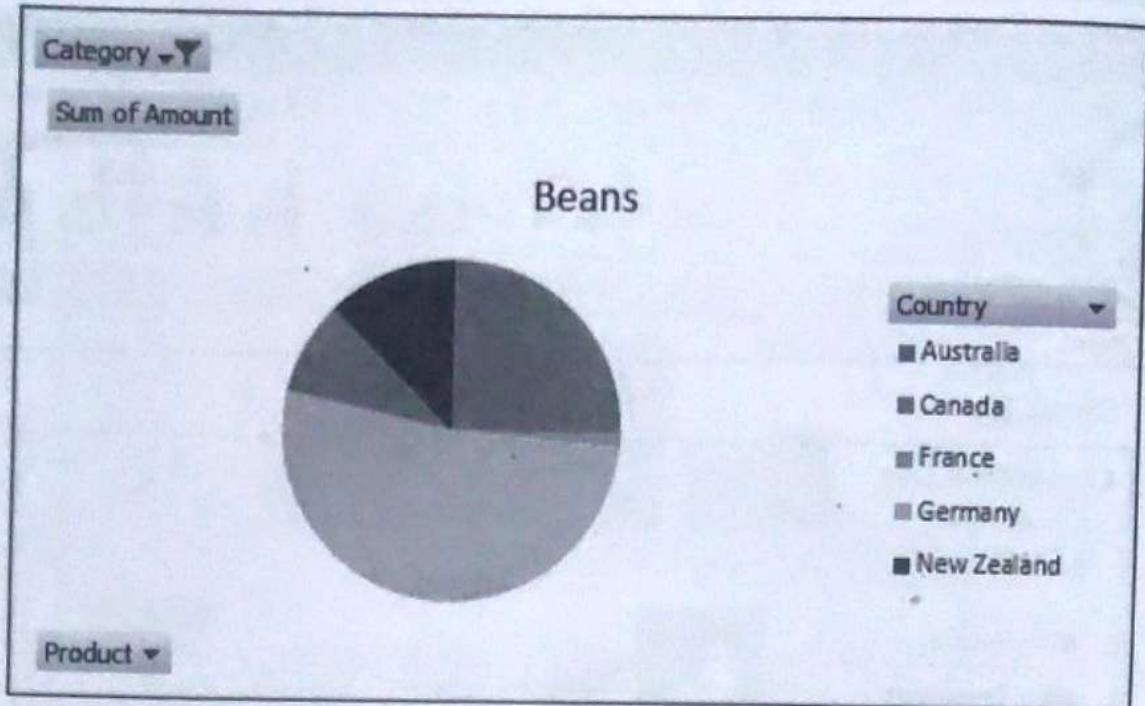
1. Select the chart.
2. On the design tab, in the Type group, click Change Chart Type.



3. Choose Pie.



4. Click OK.



Goal Seek/solver

- =Goal Seek

When using the goal seek function, Excel varies the value in a cell that you specify until a formula that is dependent on that cell returns the result you want. It is very useful for quickly solving any formula for a single unknown value. If you've used the solver on a TI-83+, the method is very similar. This example will use Excel to solve a formula for the ideal path of a projectile.

Projectile Motion

$$y - y_0 = (x - x_0) \tan \theta - \frac{g}{2v_0^2} (1 + \tan^2 \theta)(x - x_0)^2$$

θ – launch angle

v_0 – launch velocity

x_0, y_0 – launch position, positive up

- (a) Set up the variable names in column A.
- (b) Name cells by selecting A2:B10 and pressing Ctrl-shift-F3 (or the menu Insert, Name, Create). Since our names are in the left column, select that option. Click on one of the empty cells in column B to see if it was named as expected.
- (c) Copy/paste the image of the formula from the webpage to use for reference.
- (d) Enter the formula in the cell next to the example label. Be careful with parenthesis. Watch the colour coding to help you spot errors.
- (e) Use Tools, Goal Seek to determine where (x value) a projectile will hit the ground ($y = 0$) if it is shot from (0, 0) with a velocity of 75 ft/s. Note that if you have to run goal seek again, the values are not automatically calculated. Which answer you get depends upon the value of theta that you start with. (answers: 8.3 and 8.17 degrees)

	A	B	C	D
1	Trajectory Equation Solution			
2	y	0		
3	y0	0		
4	x	100		
5	x0	0		
6	theta	30		
7	g	32.2		
8	v0	75		
9				
10	eq	19.57206		
11				

Goal Seek

Set cell:

To value:

By changing cell:

OK Cancel

2.12.5 Research and Data

Meet Cane. Cane is a student enrolled in a research course. Having never done research before, he was not sure what to expect. Shortly into the course, the professor assigned the very first assignment. Students were to select a topic that interests them and present a question that they hoped to answer by conducting research.

Because Cane loves hunting, he decided to do some research to discover what the average age was that youth started hunting deer and bears. He hoped to see if there were any differences in how young the hunters were based on the element of how dangerous each species was. For example, Cane suspected that there would be more young hunters hunting deer than there would be hunting bears. While Cane knew what his topic was, and he knew what question he wanted to answer, he did not know where to begin.

In this lesson, we will learn what data analysis is and explore the different methods of collecting data and how to analyse them.

2.12.6 Methods of Data Collection

Data analysis is a method in which data is collected and organised so that one can derive helpful information from it. In other words, the main purpose of data analysis is to look at what the data is trying to tell us. For example, what does the data show or do? What does the data not show or do? For Cane, will his data show that there are more young hunters out hunting deer each year? Or, will it shock Cane and show that more young hunters are hunting bears?

There are many different methods of collecting data. Depending on the type of research one is conducting, they may use one or more of the following forms:

Observations: This type of data collection involves watching or observing something or someone. For example, Cane might observe how many people come to buy hunting licenses and note their age.

Interviews: This involves talking to people. When interviewing someone, there are usually questions asked so that the researcher can come to some sort of a conclusion. For Cane, he might ask

the Department of Natural Resources how many deer and bear tags have been fulfilled by young hunters.

Surveys: A survey is a series of questions. An example of survey questions might be:

1. Were you satisfied with your experience today?
2. Will you shop at our store again?

Using free presentation software to create or edit presentations doesn't have to mean cutting corners on features or using a clunky interface that doesn't work the way it should.

These free presentation software programs have just as much to offer as Microsoft PowerPoint, but you won't have to pay a dime for them.

Many similar features include easy to use slide design and transition effects, tabbed interfaces, spellcheck, free templates, and much more. You really can create exactly the presentation you want with these free programs.

You may, also, want to consider a free online presentation maker, which will allow you to work on your PowerPoint from anywhere. If you're only looking to view or present a slideshow, and not make any changes, consider using the free PowerPoint Viewer.

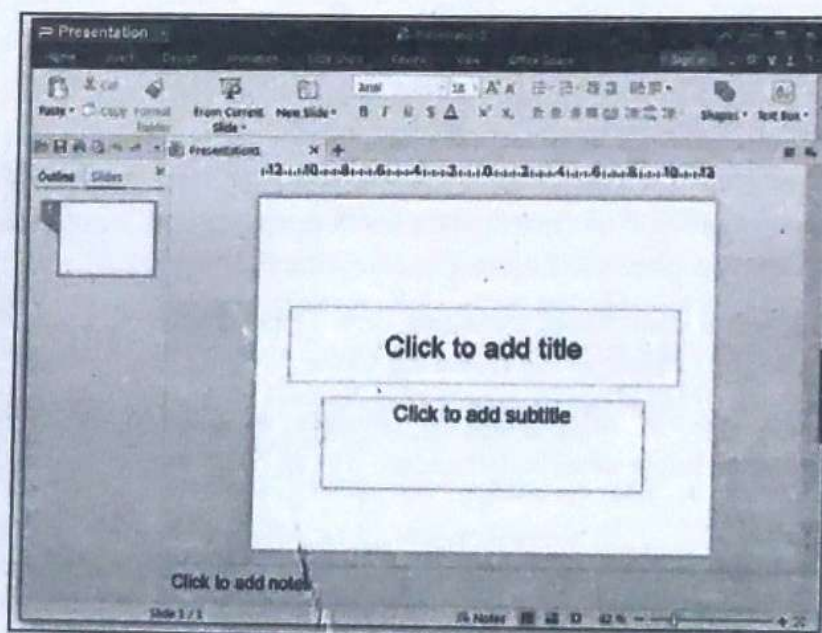
You can add more interest to your presentation with presentation templates and presentation backgrounds.

You may also want to consider downloading a free alternative to Microsoft Office, many of them include presentation creators as well as free word processors and free spreadsheet programs.

2.13 Presentation

Creating A Presentation With Minimum 20 Slides with a Script Presenting in Different Views

2.13.1 Kingsoft Presentation

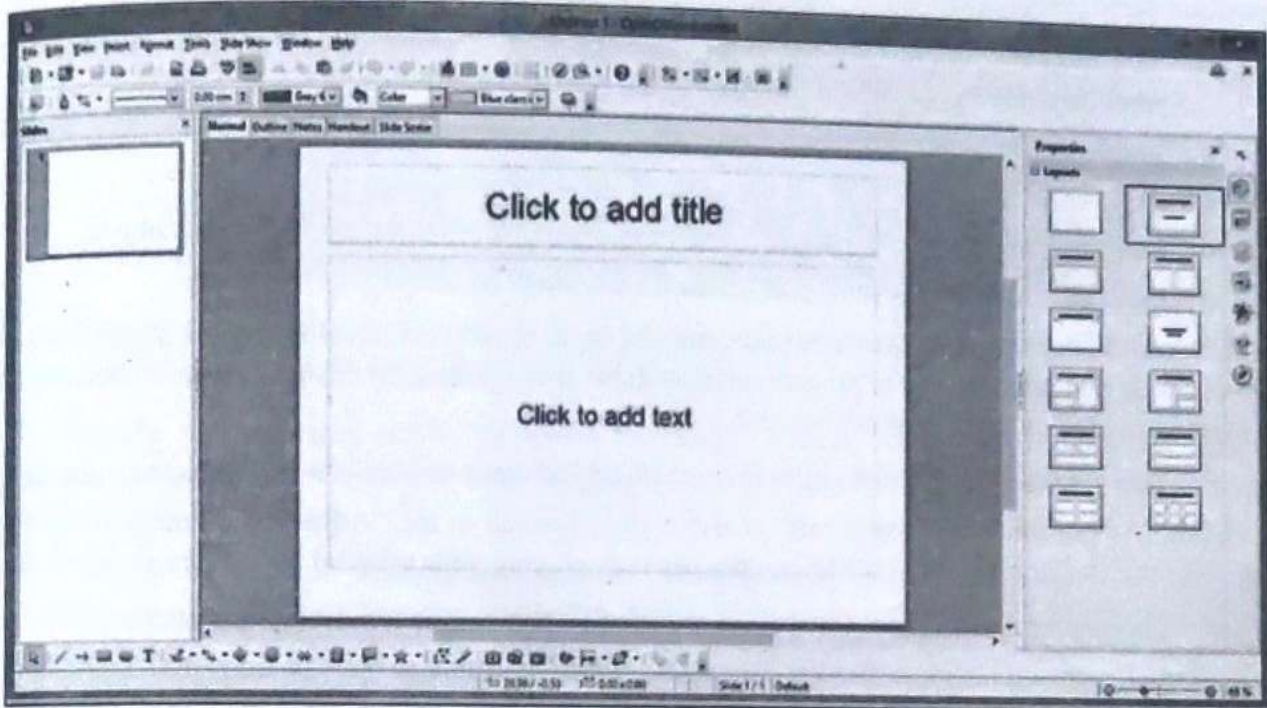


If you're looking for an easy to use presentation program but still with a lot of options, Kingsoft Presentation is a perfect fit. It's easy to get started and even beginners will find it easy to create a presentation.

It has a clean and organised layout with a tabbed interface and tons of presentation tools, all without being too cluttered or confusing to use.

Kingsoft Presentation can run a spellcheck across all the slides, works with Flash, supports saving to popular file types like PPT, and can export a slideshow to a PDF.

2.13.2 OpenOffice Impress



OpenOffice Impress is chock-full of all the features you need to build a great presentation. A simple wizard can walk you through setting up the initial backgrounds, slide design, and transition effects if you'd rather not start with a blank canvas.

There are extra features that include drawing tools, animation, text effects, and multiple monitor support.

There are free templates and extensions available as well as automatic spellcheck and support for macros.

Inserting Pictures, Videos, Creating Animation Effects on them

Animations can be used in Powerpoint to add a bit of flair to your presentations. You can animate both text or objects on a page as well as create transitions between pages. First you'll need to select the object that you want to animate, then select an animation from the "Animations" tab and modify the animation settings to your liking. Slide transitions are handled similarly from the "Transitions" tab. Powerpoint also supports the addition of animated images or videos to a slide via the "Insert" tab.

Open Powerpoint. These methods will also work with similar free software, like Google Slides or OpenOffice Impress, but the button locations and options may vary.

Click on the object you would like to animate. You click on text or images to animate.

- To select a whole text box, click on the border of the text box. Powerpoint automatically distinguishes text separated by a paragraph or bullet break.
- If your Powerpoint has no objects to animate, you will need to add some.

Go to the "Animations" tab. This is located in the top Menu bar and will display a variety of animation options and controls.

Select the animation you would like. These are split into four categories: entrances, exits, emphasis, and paths. The most recently selected animation will be set to that object and added to the animation pane.

- You can click through the animations to see a demonstration and view more animations by scrolling with the arrows on the right of the animations box.
- Entrance animations will change how an object enters the page.
- Exit animations will change how an object leaves the page.
- Emphasis animations will add movement or highlights to bring attention to an object.
- Paths determine a course of movement for an object on the page.

Click "Add Animation" to add extra animations to an object. Select an animation effect from the drop-down. If you attempt to add an animation without first clicking "Add Animation" it will replace the existing animation instead of adding to it.

- This step can be repeated multiple times to add as many animations to an object as you like.

Click "Animation pane" (optional). This button is located in the "Advanced Animation" section of the "Animation" toolbar and will bring up a panel displaying your selected animations on the right.

- This can be a useful tool for staying organised when working with multiple animations

Select an activation option for the animation. Select one of the options from the "Start" drop-down in the "Timing" section on the right of the Animations toolbar: "On mouse click", "After previous" or "With previous".

- "On Mouse Click" will hold the animation until you click the mouse.
- "After Previous" will automatically start the animation after any previous animation (or when the slide appears if there are no other animations).
- "With Previous" will play the animation at the same time as the previous animation on that slide.

2.13.3 Slide Transitions, Timed Presentations

SlideDog



SlideDog is a bit different than these other presentation programs because it's built for *presenting* files rather than *building* and presenting.

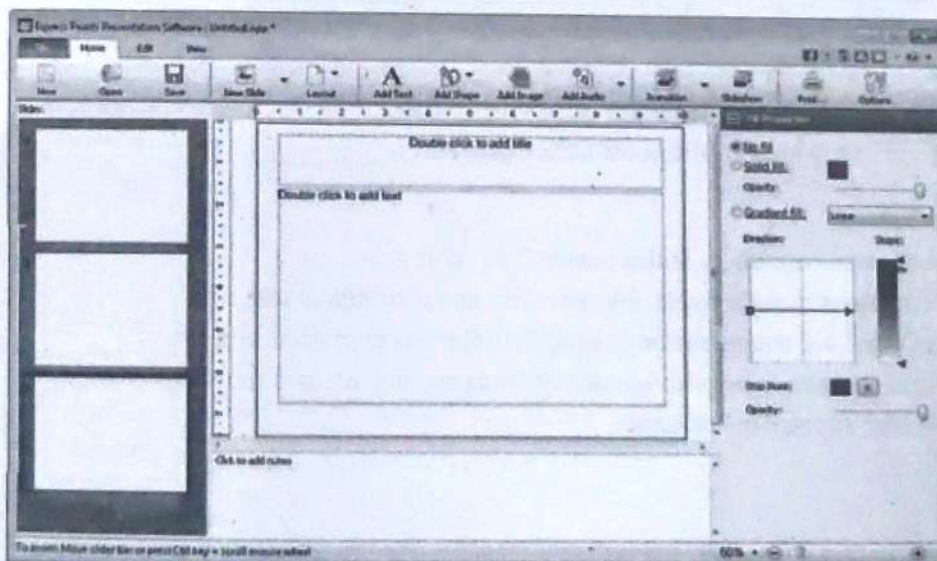
It works by creating a playlist of media like video, images, PDFs, and PowerPoint files. The presenter can easily add all of these files to a playlist and then use SlideDog to display it in front of an audience.

Tools are available to present files to people over a browser so they can access your presentation from anywhere, as well as a live chat and poll feature.

This is a great way to organise a presentation if you want something more than a simple presentation.

2.13.4 Rehearsal of Presentation

Express Points Presentation Software

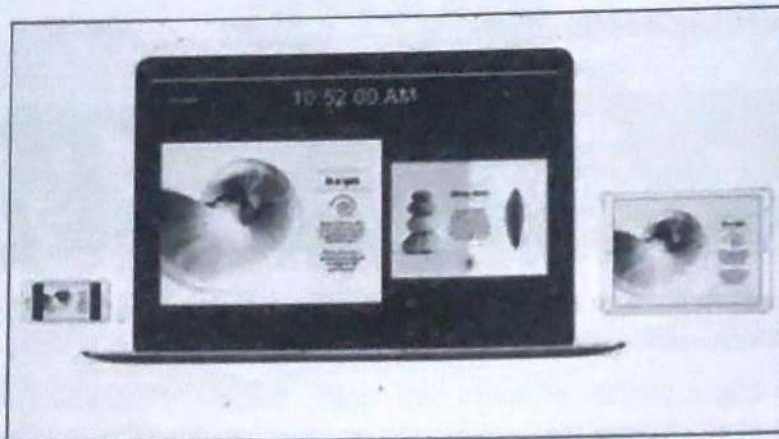


Express Points Presentation Software has nothing close to the exhaustive features that the above programs have, but it can still function well as a presentation program. Options and features are organised nicely and are easy to access while working.

Included features are templates, text formatting, master slides, transitions, image effects, and the ability to add audio.

You can insert audio from a microphone directly into a slide, open Microsoft PowerPoint's PPTX files, and autosave presentation files as often as every minute.

Apple Keynote



Apple Keynote is a free presentation software app for iOS and Mac users that allows for easy collaboration, so that the whole team can easily work together on creating that next presentation.

There are themes, slide transitions, object effects, text

2.14 Questions

Q.1. Fill in the blanks:

- _____ is an important tool for writing and sending a personalised letter.
- Microsoft Office Word can provide _____ and _____ option to save your work.
- Editing a file covers which basic areas.
- VLOOKUP stands for _____.
- Charts are used to display sequence of _____ data.
- Most of the data which is Microsoft Office program is _____.

Q.2. True or False:

- The master view consists of slides handout and note view.
- Logical functions include hyperlink operators and conditional test.
- Editing a Word file means making changes in the text contained in a file.
- Bookmark name has to be with special symbols and can contain numbers.
- A placeholder appears in our drive.

Q.3. Match the following:

Group A	Group B
1. Data save	(a) MS Excel
2. Solver	(b) Presentations
3. Goal seek	(c) Iteration tool
4. Word processing	(d) Save As
5. Inserting images	(e) Horizontal lookup
6. HLOOKUP	

Q.4. Write short notes:

1. Explain the saving of documents.
2. Explain the creating of documents.
3. Write the step of editing the documents.
4. Explain the use of SmartArt.
5. Explain the basic functions.
6. Write the step of creating a chart.
7. Explain the creating of slides.

Q.5. Long answers questions:

1. What is the use of mail tool? Write the step for using mail?
2. What is data analysis?
3. Write the step for creating presentation.
4. What is SmartArt?
5. Write the step of creating and saving documents.



Email, Internet and its Applications

Chapter Outline:

- 3.1 Introduction to E-Mail
- 3.2 Use of Outlook
- 3.3 Emailing Merged Documents
- 3.4 Introduction to Bulk Email Software
- 3.5 Internet
- 3.6 Concepts of Internet , Intranet and Extranet
- 3.7 Network Basics, Different Types of Networks
- 3.8 Study OF LAN, MAN, WAN
- 3.9 DNS Basics
- 3.10 Emergence of E-Commerce and M-Commerce
- 3.11 Models Based on Revenue Models
- 3.12 Electronics Funds Transfer
- 3.13 Electronic Data Interchange (EDI)
- 3.14 Data Interchange (EDI)
- 3.15 Questions

3.1 Introduction to Email

3.1.1 Writing Professional Email

1. **Begin with a Greeting:** Always open your email with a greeting, such as "Dear Lillian". If your relationship with the reader is formal, use their family name (e.g., "Dear Mrs. Price"). If the relationship is more casual, you can simply say, "Hi Kelly". If you don't know the name of the person you are writing to, use: "To whom it may concern" or "Dear Sir/Madam".

2. **Thank the Recipient:** If you are replying to a client's inquiry, you should begin with a line of thanks. For example, if someone has a question about your company, you can say, "Thank you for contacting ABC Company". If someone has replied to one of your emails, be sure to say, "Thank you for your prompt reply" or "Thanks for getting back to me". Thanking the reader puts him or her at ease, and it will make you appear more polite.
3. **State your Purpose:** If you are starting the email communication, it may be impossible to include a line of thanks. Instead, begin by stating your purpose. For example, "I am writing to enquire about ..." or "I am writing in reference to ...".

Make your purpose clear early-on in the email, and then move into the main text of your email. Remember, people want to read emails quickly, so keep your sentences short and clear. You'll also need to pay careful attention to grammar, spelling and punctuation so that you present a professional image of yourself and your company.

4. **Add your Closing Remarks:** Before you end your email, it's polite to thank your reader one more time and add some polite closing remarks. You might start with "Thank you for your patience and co-operation" or "Thank you for your consideration" and then follow-up with, "If you have any questions or concerns, don't hesitate to let me know" and "I look forward to hearing from you".
5. **End with a Closing:** The last step is to include an appropriate closing with your name. "Best regards", "Sincerely", and "Thank you" are all professional. Avoid closings such as "Best wishes" or "Cheers" unless you are good friends with the reader. Finally, before you hit the send button, review and spell check your email one more time to make sure it's truly perfect!

3.1.2 Creating Digitally Signed Documents

The digital equivalent of a handwritten signature or stamped seal, but offering far more inherent security, a digital signature is intended to solve the problem of tampering and impersonation in digital communications. Digital signatures can provide the added assurances of evidence to origin, identity and status of an electronic document, transaction or message, as well as acknowledging informed consent by the signer.

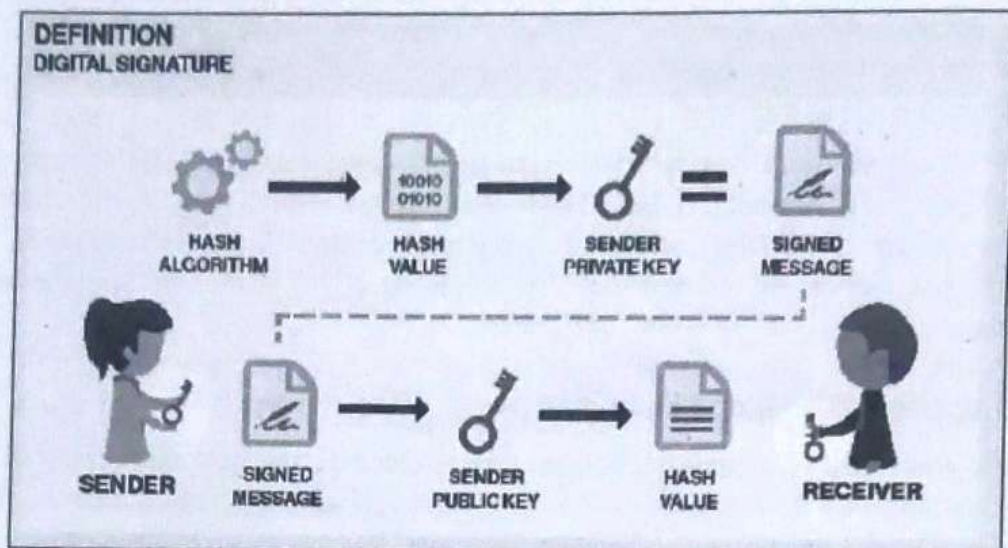
In many countries, including the United States, digital signatures have the same legal significance as the more traditional forms of signed documents. The United States Government Printing Office publishes electronic versions of the budget, public and private laws, and congressional bills with digital signatures.

How Digital Signatures Work

Digital signatures are based on public key cryptography, also known as asymmetric cryptography. Using a public key algorithm such as RSA, one can generate two keys that are mathematically linked: one private and one public. To create a digital signature, signing software (such as an email program) creates a one-way hash of the electronic data to be signed. The private key is then used to encrypt the hash. The encrypted hash – along with other information, such as the hashing algorithm – is the digital signature. The reason for encrypting the hash instead of the entire message or document is that a hash function can convert an arbitrary input into a fixed length value, which is usually much shorter. This saves time since hashing is much faster than signing.

The value of the hash is unique to the hashed data. Any change in the data, even changing or deleting a single character, results in a different value. This attribute enables others to validate the integrity of the data by using the signer's public key to decrypt the hash. If the decrypted hash matches a second computed hash of the same data, it proves that the data hasn't changed since it was signed. If the two hashes don't match, the data has either been tampered with in some way (integrity) or the signature was created with a private key that doesn't correspond to the public key presented by the signer (authentication).

A digital signature can be used with any kind of message – whether it is encrypted or not – simply so the receiver can be sure of the sender's identity and that the message arrived intact. Digital signatures make it difficult for the signer to deny having signed something (non-repudiation) – assuming their private key has not been compromised – as the digital signature is unique to both the document and the signer, and it binds them together. A digital certificate, an electronic document that contains the digital signature of the certificate-issuing authority, binds together a public key with an identity and can be used to verify a public key belongs to a particular person or entity.



3.2 Use of Outlook

Configuring Outlook, Creating And Managing Profile in Outlook, Sending and Receiving Emails through Outlook

Understand the difference between POP and IMAP email services. There are two ways that email can be delivered to your email client: POP (Post Office Protocol) and IMAP (Internet Message Access Protocol). POP is the older method of transferring email messages, and works by downloading new messages to your client and then deleting them from the server. IMAP was designed to allow you to check email from multiple devices, as messages and organisations are synced between all of the clients you use.

- There is really no practical reason to use POP if IMAP is available. IMAP is more stable, more secure, and allows you to check your email from your computer, phone, and laptop without losing any messages.
- Most email services allow you to use IMAP, though some may charge for it. Gmail, Yahoo!, Outlook.com (Hotmail), AOL, and most service providers allow for IMAP.

- Configure your service for IMAP (Gmail). Most email services allow you to access the IMAP functions without making any changes. The major exception to this is Gmail, where you will need to manually enable IMAP.
- Log onto the Gmail website and click the Gear button. Select "Settings" and then click the "Forwarding and POP/IMAP" tab. Select "Enable IMAP" and click "Save Changes".

Open Outlook. When you add an IMAP email service, you'll be able to check, organise, and manage your email in Outlook and on all of your other devices. Any changes you make in Outlook will be reflected in your other email clients. Click the "File" tab. In the "Info" section, click the "+Add Account" button.

Select "Manual setup or additional server types". This will allow you to enter any email account.

Note: If you're using Gmail or Hotmail (Outlook.com), you can enter your email address and password in the "E-Mail Account" section of the Add New Account window and skip the rest of this section. Outlook will take care of the rest of the configuration for you. You can also manually set them up if you prefer by reading on.

3.3 Emailing Merged Documents

If you have a message to send to many people via email that you want personalised for each recipient, use mail merge. You can create a batch of personalised email messages that are formatted identically and use the same text and graphics. Only specific sections of the email message vary and are personalised. Mail merge – unlike broadcasting a message to a group of people – makes each recipient of the message the sole recipient.

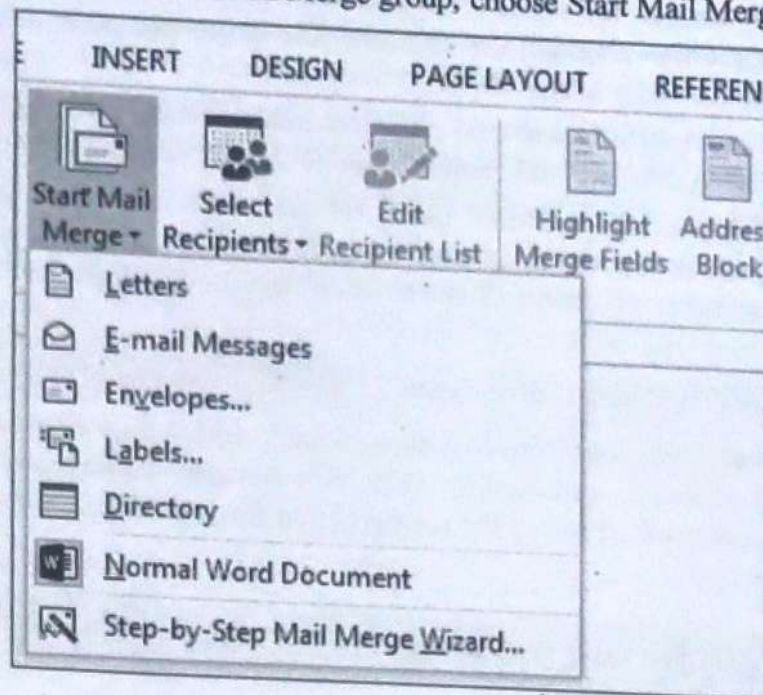
There are three documents involved in creating email messages using the mail merge process:

- **Your main document:** This document is your email message, it contains text and graphics (a logo or image, for example) that are identical for each version of the merged document.
- **Your mailing list:** This document contains the data that is used to populate information on the letter. Your mailing list has names, for example, and your main document is the email message that will be addressed to the names in your list.
- **Your merged document:** This document is a combination of the main document and the mailing list. Mail merge pulls the formation from the mailing list and puts it in your main document, resulting in a personalised, merged document for each person on the mailing list.

3.3.1 Prepare Your Main Document

Type the body of the email message you want to send to everyone in Word before you begin. If you're telling people about an upcoming event, for example, include the name, date, time, and location of the event. Those event details are important for everyone to know.

On the Mailings tab, in the Start Mail Merge group, choose Start Mail Merge > E-mail Messages.



3.3.2 Set up Your Mailing List

In order to send emails, a MAPI-compatible email program like Outlook or Gmail needs to be installed. If you're using Outlook MAPI, make sure your versions of Word and Outlook are the same.

The mailing list is your data source. It can be a directory of Outlook contacts, an Access database, or an Office address list. It contains the records that Word uses to pull information from to build your email messages.

3.3.3 Link Your Mailing List to Your Email Message

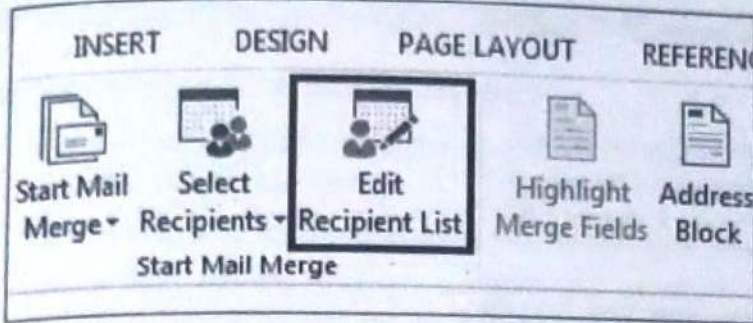
Now it's time to choose your recipients from a data source (an address list). Make sure your data source has a column for email addresses and that there's an email address for each person you're sending the email to.

- On the Mailings tab, in the Start Mail Merge group, choose Select Recipients, and then choose an option.
- Do one of the following:
- If you don't have a mailing list, choose Type a New List and create one; or
- If your mailing list is in an Excel spreadsheet, an Access database, or another type of data file, choose Use an Existing List. Then browse to your list and choose Open; or
- If you're using your Outlook contacts, choose Choose from Outlook Contacts.
- Choose File > Save as.
- In the File name box, type a file name, and then choose Save.

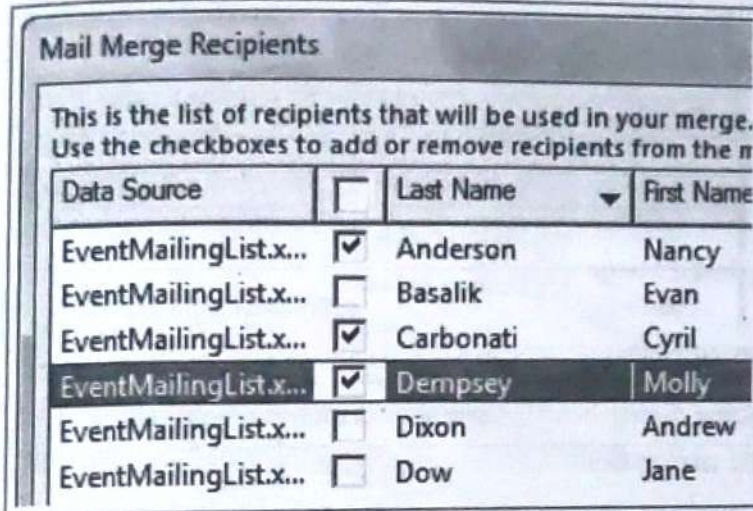
3.3.4 Edit your Mailing List

If you're sending email messages to everyone on your list, go to Step 4: Add personalised content to the email message. If you want to send emails only to certain people on your list you can narrow the list, use the steps under Edit your mailing list.

1. Choose Edit Recipient List.



2. Check the names of the people who you want should receive your email message.

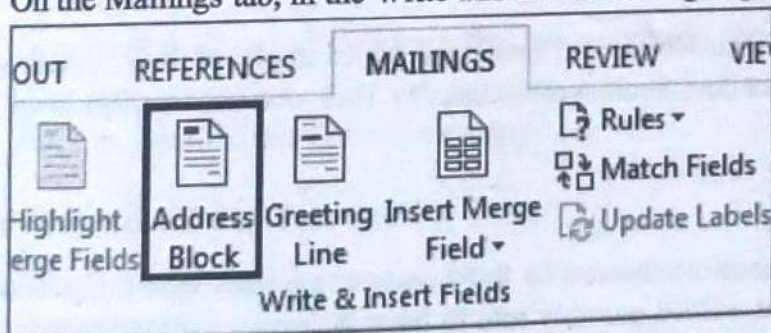


You also can sort or filter the list to make it easier to find names and addresses.

3.3.5 Add Personalised Content to the Email Message

Personalise each email message by adding a person's name and address. The best practice for adding these details is to insert merge fields in your main document.

1. On the Mailings tab, in the Write and Insert Fields group, choose Address Block.



2. In the Insert Address Block dialog box, choose a format for the recipient's name as it will appear in the email.

Specify address elements

Insert recipient's name in this format:

Joshua
 Joshua Randall Jr.
 Joshua Q. Randall Jr.
 Mr. Josh Randall Jr.
 Mr. Josh Q. Randall Jr.
 Mr. Joshua Randall Jr.

Insert company name

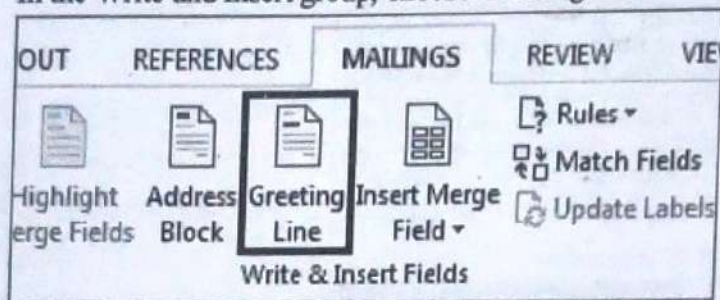
Insert postal address:

Never include the country/region in the address
 Always include the country/region in the address
 Only include the country/region if different than:

United States

Format address according to the destination country/re

3. Choose OK to insert the merge field.
4. In the Write and Insert group, choose Greeting Line.



5. In the Insert Greeting Line dialog box, choose the format you want to use.
6. Choose OK to insert the merge field.
7. Choose File > Save to preserve your email.

3.4 Introduction to Bulk Email Software

Bulk email software is software that is used to send emails in large quantities.

Bulk email software usually refers to stand-alone software, while there are bulk email sending web based services as well.

Computer worms that spread themselves via email are an example of bulk email software, sometimes referred to as a mass mailer. Such worms usually (but not necessarily) send spoofed "From" headers.

3.4.1 Types of Software

Most bulk email software programs are hosted by third party companies who sell access to their system. Customers pay per send or at a fixed monthly rate to have their own user account from which they can manage their contacts and send out email campaigns. Generally, the advantage of this type of program is the reliability of the third party vendor and their application. Some bulk email software programs are self-hosted. The customer buys a license or develops their own program and then hosts

the program. Generally, the advantage of this type of program is the lack of ongoing monthly fees to the owner/developer of the program. The disadvantage of using this option is that delivery rate is reduced as often users use one server to send bulk emails. There are various settings to tweak to avoid a server being labelled as spam.

3.5 Internet

3.5.1 Understanding Internet Technology

- It is the largest network in the world that connects hundreds of thousands of individual networks all over the world.
- The popular term for the internet is the “information highway”.
- Rather than moving through geographical space, it moves your ideas and information through cyberspace – the space of electronic movement of ideas and information.
- No one owns it.
- It has no formal management organisation.
- As it was originally developed by the Department of defense, the lack of centralisation made it less vulnerable to wartime or terrorist attacks.
- To access the internet, an existing network needs to pay a small registration fee and agree to certain standards based on the TCP/IP (Transmission Control Protocol/Internet Protocol) .

3.5.2 The Uses of the Internet

- Send email messages.
- Send (upload) or receive (download) files between computers.
- Participate in discussion groups, such as mailing lists and newsgroups.
- Surfing the web.

3.5.3 What is Web?

- The Web (World Wide Web) consists of information organised into webpages containing text and graphic images.
- It contains hypertext links, or highlighted keywords and images that lead to related information.
- A collection of linked webpages that has a common theme or focus is called a website.
- The main page that all of the pages on a particular website are organised around and link back to, is called the site’s home page.

3.5.4 How to Access the Internet?

- Many schools and businesses have direct access to the internet using special high-speed communication lines and equipment.
- Students and employees can access through the organisation’s local area networks (LAN) or through their own personal computers.
- Another way to access the internet is through Internet Service Provider (ISP).

3.5.5 Internet Service Provider (ISP)

- A commercial organisation with permanent connection to the internet that sells temporary connections to subscribers.
- Examples: Prodigy, America Online, Microsoft network, AT&T Networks.

3.5.6 How to Access the Web?

- Once you have your internet connection, then you need special software called a browser to access the Web.
- Web browsers are used to connect you to remote computers, open and transfer files, display text and images.
- Web browsers are specialised programs.
- Examples of Web browser: Netscape Navigator (Navigator) and Internet Explorer.

3.5.7 Client/Server Structure of the Web

- Web is a collection of files that reside on computers, called Web servers, that are located all over the world and are connected to each other through the internet.
- When you use your onternet connection to become part of the Web, your computer becomes a Web client in a worldwide client/server network.
- Each part of the address is a number ranging from 0 to 255, and each part is separated from the previous part by period.
- For example, 106.29.242.17

3.5.8 IP Addressing

- The combination of the four IP address parts provides 4.2 billion possible addresses ($256 \times 256 \times 256 \times 256$).
- This number seemed adequate until 1998.
- Members of various internet task forces are working to develop an alternate addressing system that will accommodate the projected growth.
- However, all of their working solutions require extensive hardware and software changes throughout the internet.

3.5.9 Domain Name Addressing

- Most web browsers do not use the IP address to locate websites and individual pages.
- They use domain name addressing.
- A domain name is a unique name associated with a specific IP address by a program that runs on an internet host computer.
- This program, which coordinates the IP addresses and domain names for all computers attached to it, is called DNS (Domain Name System) software.
- The host computer that runs this software is called a domain name server.

3.5.10 Uniform Resource Locators

- The IP address and the domain name each identify a particular computer on the internet.
- However, they do not indicate where a webpage's HTML document resides on that computer.
- To identify a webpage's exact location, Web browsers rely on Uniform Resource Locator (URL).
- URL is a four-part addressing scheme that tells the Web browser:
 - What transfer protocol to use for transporting the file
 - The domain name of the computer on which the file resides
 - The path name of the folder or directory on the computer on which the file resides
 - The name of the file
- HTTP
- The transfer protocol is the set of rules that the computers use to move files from one computer to another on the internet.
- The most common transfer protocol used on the internet is the Hypertext Transfer Protocol (HTTP).
- Two other protocols that you can use on the internet are the File Transfer Protocol (FTP) and the Telnet Protocol

3.5.11 How to Find Information on the Web?

- A number of search tools have been developed and are available to you on certain websites that provide search services to help you find information.
- Examples:

❖ Yahoo	→	www.yahoo.com
❖ Excite	→	www.excite.com
❖ Lycos	→	www.lycos.com
❖ AltaVista	→	www/alta-vista.com
❖ MSN WebSearch	→	www.search.msn.com
- You can find information by two basic means.
- Search by Topic and Search by keywords.
- Some search services offer both methods, others only one.
- Yahoo offers both.
- Search by Topic.
- You can navigate through topic lists.
- Search by keyword.
- You can navigate by entering a keyword or phrase into a search text box.

3.6 Concepts of Internet, Intranet and Extranet

3.6.1 Internet

This is the worldwide network of computers accessible to anyone who knows their internet Protocol (IP) address – the IP address is a unique set of numbers (such as 209.33.27.100) that defines the computer's location. Most will have accessed a computer using a name such as <http://www.hcidata.com>. Before this named computer can be accessed, the name needs to be resolved (translated) into an IP address. To do this, your browser (for example Netscape or Internet Explorer) will access a Domain Name Server (DNS) computer to look-up the name and return an IP address - or issue an error message to indicate that the name was not found. Once your browser has the IP address it can access the remote computer. The actual server (the computer that serves up the webpages) does not reside behind a firewall – if it did, it would be an Extranet. It may implement security at a directory level so that access is via a username and password, but otherwise all the information is accessible. To see typical security, have a look at a sample secure directory – the username is Dr and the password is Who (both username and password are case sensitive).

3.6.2 Intranet

This is a network that is not available to the world outside of the Intranet. If the Intranet network is connected to the internet, the Intranet will reside behind a firewall and, if it allows access from the internet, will be an Extranet. The firewall helps to control access between the Intranet and internet to permit access to the Intranet only to people who are members of the same company or organisation.

In its simplest form, an Intranet can be set up on a networked PC without any PC on the network having access via the Intranet network to the internet.

For example, consider an office with a few PCs and a few printers all networked together. The network would not be connected to the outside world. On one of the drives of one of the PCs there would be a directory of webpages that comprise the Intranet. Other PCs on the network could access this Intranet by pointing their browser (Netscape or Internet Explorer) to this directory – for example `U:\inet\index.htm`.

From then onwards they would navigate around the Intranet in the same way as they would get around the internet.

3.6.3 Extranet

An Extranet is actually an Intranet that is partially accessible to authorised outsiders. The actual server (the computer that serves up the webpages) will reside behind a firewall. The firewall helps to control access between the Intranet and internet permitting access to the Intranet only to people who are suitably authorised. The level of access can be set to different levels for individuals or groups of outside users. The access can be based on a username and password or an IP address (a unique set of numbers such as 209.33.27.100 that defines the computer that the user is on).

3.7 Network Basics, Different Types of Networks

There are several different types of computer networks. Computer networks can be characterised by their size as well as their purpose.

The size of a network can be expressed by the geographic area they occupy and the number of computers that are part of the network. Networks can cover anything from a handful of devices within a single room to millions of devices spread across the entire globe.

Some of the different networks based on size are:

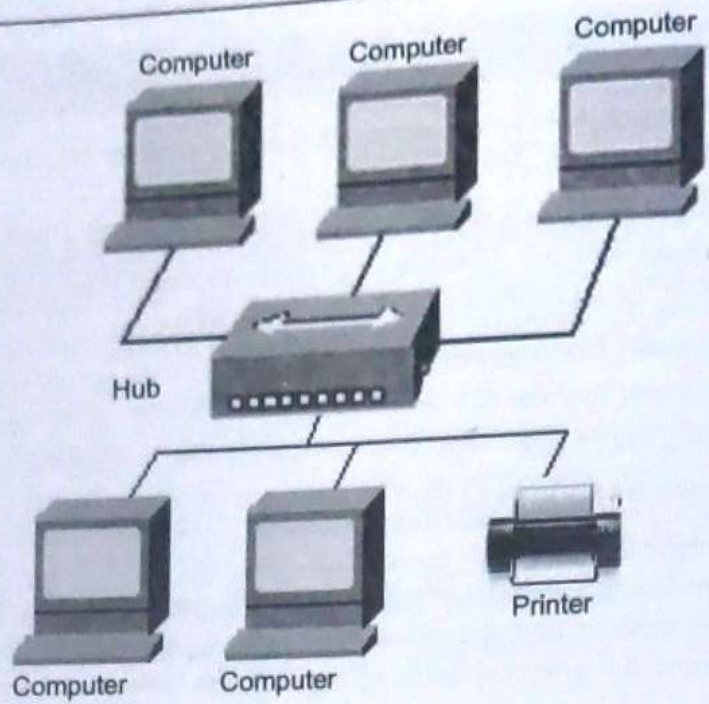
- Personal area network, or PAN
- Local area network, or LAN
- Metropolitan area network, or MAN
- Wide area network, or WAN

In terms of purpose, many networks can be considered general purpose, which means they are used for everything from sending files to a printer to accessing the internet. Some types of networks, however, serve a very particular purpose. Some of the different networks based on their main purpose are:

- Storage area network, or SAN
- Enterprise private network, or EPN
- Virtual private network, or VPN

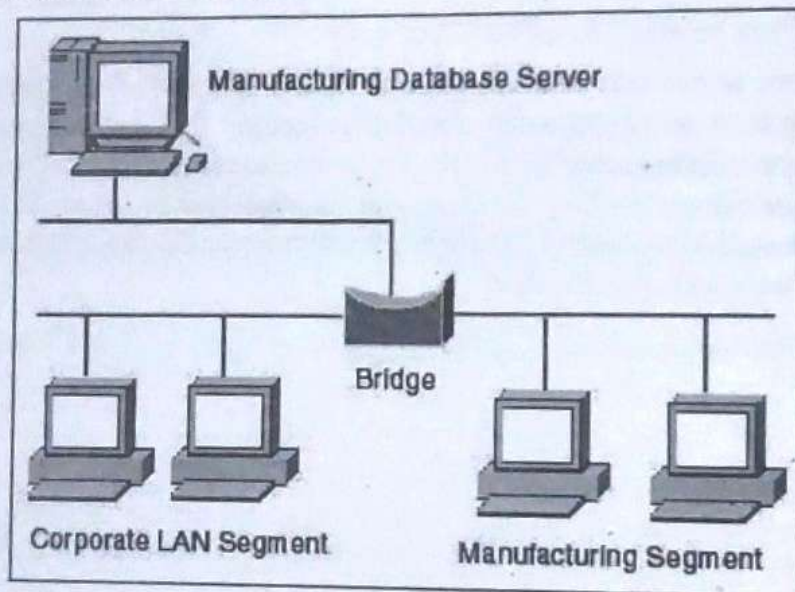
3.7.1 Hub

A simple network device that connects other devices to the network and sends packets to all the devices connected to it. A hub is basically a multiport repeater that connects multiple wires coming from different branches. Hubs cannot filter data, so data packets are sent to all connected devices. As they do not have intelligence to find out best path for data packets, it leads to inefficiencies and wastage. Hub cannot read MAC address, therefore it will transfer the data to all the connected devices and only correct device/s will copy the data.



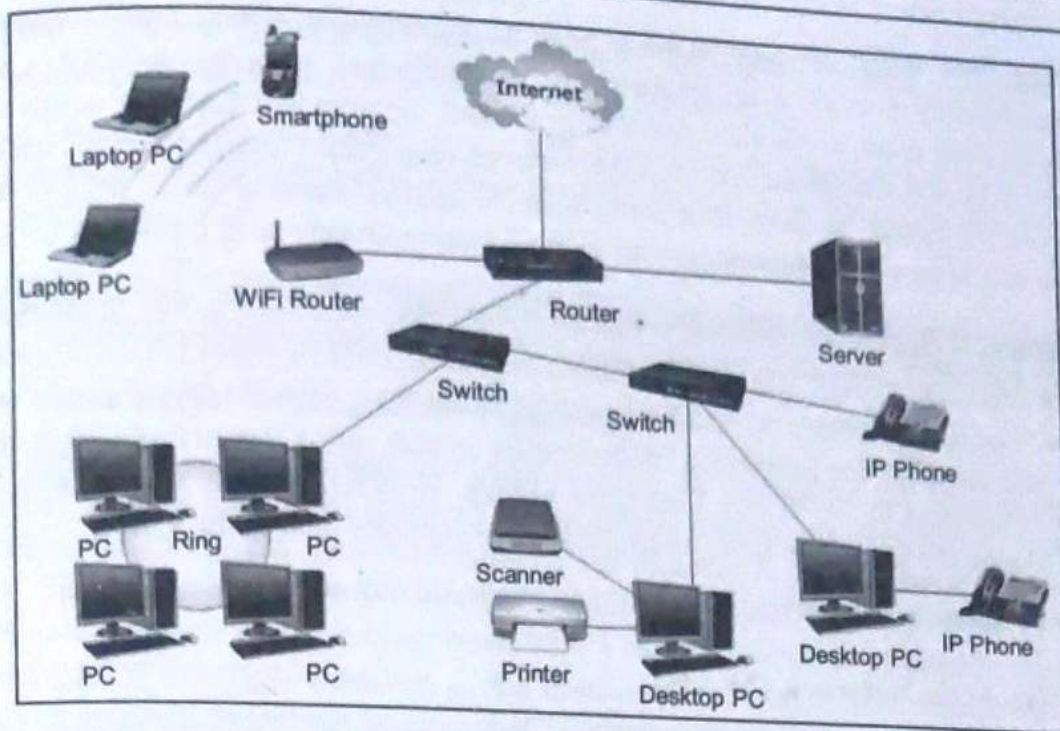
3.7.2 Bridge

Bridge is a communications processor that connects two Local Area Networks (LANs) working on the same protocol. A bridge is a repeater with add on functionality of filtering contents by reading the MAC address of source and destination.



3.7.3 Routers

A device that receives and analysis packets and then routes them towards their destination. In some cases, a router will send a packet to another router, in other cases, it will send it directly to its destination. Routers are required on internet to read IP addresses. If IP addresses is of our network then the packet is transferred to our network, else the packet is transferred to our network, else the packet is forwarded to next router on internet. Router is used to connect the networks.



3.7.4 IP addresses

Every device that communicates on the internet, whether it is a personal computer, a tablet, a smartphone, or anything else, is assigned a unique identifying number called an IP (Internet Protocol) address. Historically, the IP address standard used has been IPv4 (version 4), which has the format of four numbers between 0 to 255 separated by a period. E.g., let's say the domain Wikipedia.org has the IP address of 107.23.196.166. The IPv4 standard has limit of 4,29,49,67,296 (2^{32}) i.e. Little more than 4 billion possible addresses. However, IPv6 standard, which is currently being phased in, is formatted as eight groups of four hexadecimal digits separated by colon, such as 2001:0db8:85a3:0042:1000:8a2e:0370:7334. The IPv6 standard has a limit of 3.4×10^{38} possible addresses.

3.8 Study OF LAN, MAN, WAN

3.8.1 Local Area Network (LAN)

A Local Area Network (LAN) is a network that is restricted to smaller physical areas, e.g., a local office, school, or house. Approximately, all current LANs whether wired or wireless are based on Ethernet. On a 'Local Area Network' data transfer speeds are higher than WAN and MAN that can extend to a 10.0 Mbps (Ethernet network) and 1.0 Gbps (Gigabit Ethernet).

LAN networks can be implemented in multiple ways, for example, twisted pair cables and a wireless Wi-Fi with the IEEE 802.11 standard can be used for this purpose. One end of the twisted pair cable is plugged into switches using "RJ-45 connectors", whereas the other end is plugged to a computer or in another network. All new routers use the b/g/n IEEE 802.11 standards. The "b" and "g" operate in the 2.4 GHz spectrum, and "n" operates in 2.4 and 5.0 GHz which allows better performance and less interference.

Computers and servers (provides services to other computers like printing, file storage and sharing) can connect to each other via cables or wirelessly in a same LAN. Wireless access in

conjunction with wired network is made possible by Wireless Access Point (WAP). Devices with WAP functionality provide a bridge between computers and networks. A WAP is able to connect hundreds or even more of wireless users to a network. Servers in a LAN are mostly connected by a wire since it is still the fastest medium for network communication. But for workstations (Desktop, laptops, etc.) wireless medium is a more suitable choice, since at some point it is difficult and expensive to add new workstations into an existing system already having complex network wiring.

Token Ring and Fiber Distributed Data Interface (FDDI)

With Ethernet, "Token Ring" and "Fiber Distributed Data Interface (FDDI)" are also considered the major "Local Area Network" technologies. In Token Ring network all computers are connected in a ring or star topology for prevention of data collision and with a data transfer rates of either 4 or 16 megabits per second by IEEE 802.5 standard version. In FDDI for data transmission, optic fibre are used that extend the range of a LAN up to 200km and supports thousands of user.

New to networking? See this beginner's course at [Udemy.com](https://www.udemy.com/)

3.8.2 Wide Area Network (WAN)

Wide Area Network is a computer network that covers relatively larger geographical area such as a state, province or country. It provides a solution to companies or organisations operating from distant geographical locations who want to communicate with each other for sharing and managing central data or for general communication.

WAN is made up of two or more Local Area Networks (LANs) or Metropolitan Area Networks (MANs) that are interconnected with each other, thus users and computers in one location can communicate with users and computers in other locations.

In "Wide Area Network", computers are connected through public networks, such as the telephone systems, fiber optic cables, and satellite links or leased lines. The "Internet" is the largest WAN in a world. WANs are mostly private and are built for a particular organisation by "Internet Service Providers (ISPs)" which connects the LAN of the organisation to the internet. WANs are frequently built using expensive leased lines where with each end of the leased line a router is connected to extend the network capability across sites. For low cost solutions, WAP is also built using a "circuit switching" or "packet switching" methods.

3.8.3 Metropolitan Area Network (MAN)

A Metropolitan Area Network (MAN) is a network that connects two or more computers, communicating devices or networks in a single network that has geographic area larger than that covered by even a large "Local Area Network", but smaller than the region covered by a "Wide Area Network". MANs are mostly built for cities or towns to provide a high data connection and usually owned by a single large organisation.

A Metropolitan Area Networks bridges a number of "Local Area Networks" with a fiber optical links which act as a backbone, and provides services similar to what Internet Service Provider (ISP) provide to Wide Area Networks and the internet.

Major technologies used in MAN networks are "Asynchronous Transfer Mode (ATM)", "Fiber Distributed Data Interface (FDDI)" and "Switched Multi-megabit Data Service (SMDS, a connection-less service)". In most of the areas, these technologies are used to replace the simple "Ethernet" based

connections. MANs can bridge Local Area Networks without any cables by using microwave, radio wireless communication or infra-red laser which transmits data wirelessly.

"Distributed Queue Dual Bus (DQDB)" is the Metropolitan Area Network (MAN) IEEE 802.6 standard for data communication. Using DQDB, networks can extend up to 100km-160km and operate at speeds of 44 to 155Mbps.

3.9 DNS Basics

3.9.1 Domain Name Registration, Hosting Basics

People take things for granted particularly when it comes to domain names. Most people know what domain names are, but only a few know all of the details that are involved. These typically do not become evident until a domain name is required for a website. A domain name is essentially a website address. The entire web address is called as the Uniform Resource Locator or the URL. If you want to use a domain name, it should be registered with a registry. A top-level domain name (TLD) describes the end part of a domain extension or the domain name. The domain names should be at least two characters long and should not be more than 63 characters maximum, excluding the top-level domain. The characters can incorporate any combination of letters, hyphens or numbers.

3.9.2 Domain Name Registration

When a domain name is registered or recorded, it is controlled by an extensive database full of other domain names. This is called a registry. The registrars are the ones who make domain name registration and management viable. The individual registering a domain name is referred to as the registrant.

For the first time buyers, the process of Domain name registration could be a bit confusing. If you don't have any idea about the process, then you will find a number of terms that you need to worry about. However, we are here to help you out to tackle the problems that you might face. With the information given below, you will get some idea on how to register domain names. Perhaps you could even successfully find one with the "tips" provided while avoiding the inconvenience that can sometimes come during the process of registration.

3.9.3 Name Servers

Have you ever heard about name server? Name servers are concerned to a service that works on servers belonging to a web hosting company that hosts the account that the domain name will direct to. Each domain name on the internet has to point to an IP address. However, each IP address can have many domain names on it. Subscribing the name servers of the hosting company you have for the domain name you are registering allows the big DNS name servers on the internet know where to obtain the hosting account for the domain name in question. It would not be possible for any computer to find any webpage, without this service. This is all generally done very fast.

3.10 Emergence of E-Commerce and M-Commerce

3.10.1 Concept of E-Commerce and M-Commerce

Transacting or facilitating business on the internet is called e-commerce. E-commerce is short for "electronic commerce." Popular examples of e-commerce revolve around buying and selling online. But, the e-commerce universe contains other types of activities as well. Any form of business transaction conducted electronically is e-commerce. Here are some examples of e-commerce:

Online Shopping

Buying and selling goods on the internet is one of the most popular examples of e-commerce.

Sellers create storefronts that are the online equivalents of retail outlets. Buyers browse and purchase products with mouse clicks. Though Amazon.com is not the pioneer of online shopping, it is arguably the most famous online shopping destination.

Electronic Payments

When you are buying goods online, there needs to be a mechanism to pay online too. That is where payment processors and payment gateways come into the picture. Electronic payments reduce the inefficiency associated with writing and mailing checks. It also does away with many of the safety issues that arise due to payment made in currency notes.

Online Auctions

When you think online auction, you think eBay. Physical auctions predate online auctions, but the internet made auctions accessible to a large number of buyers and sellers. Online auctions are an efficient mechanism for price discovery. Many buyers find the auction shopping mechanism much interesting than regular storefront shopping.

Internet Banking

Today, it is possible for you to perform the entire gamut of banking operations without visiting a physical bank branch. Interfacing of websites with bank accounts, and by extension credit cards, was the biggest driver of e-commerce.

Online Ticketing

Air tickets, movie tickets, train tickets, play tickets, tickets to sporting events, and just about any kind of tickets can be booked online.

Online ticketing does away with the need to queue up at ticket counters.

3.10.2 Types of E-commerce

1. **Business-to-Business (B2B):** It is a form of electronic commerce in which products or services are sold from a firm to another firm. It is performed in much higher volumes than B2C. For Example: Intel is selling micro-processors to Dell or Reebok is selling shoes to Flipkart are the examples of B2B. Websites examples: shop2gether.com, Quill.com.
2. **Business-to-Consumer (B2C):** It is a form of electronic commerce in which products or services are sold from a firm directly to consumers. For Example: Dell is selling a laptop to

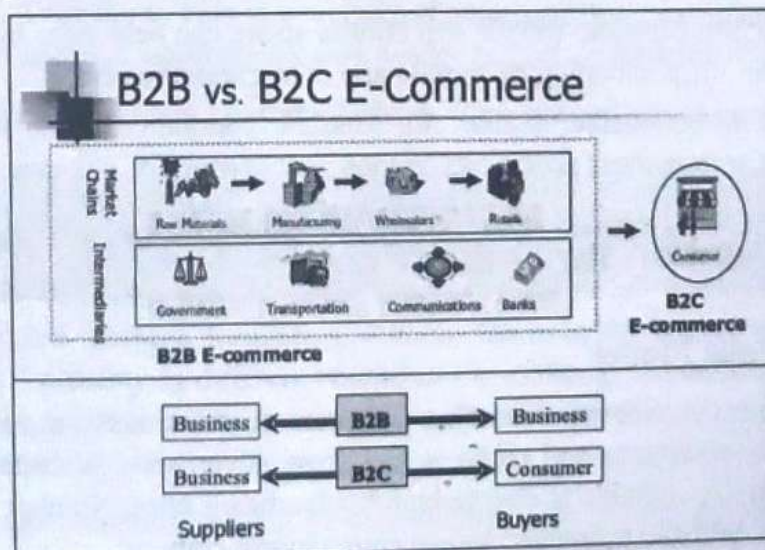
me or Flipkart is selling Reebok shoes to a customer are the examples of B2C. Website Examples: amazon.com, flipkart.com.

3. **Consumer-to-Business (C2B):** It is a form of electronic commerce in which products or services are sold from a consumer to a firm. For Example: I am selling a book to Manan Prakashan or a programmer is offering his freelance programming services to a company. Website examples: guru.com.
4. **Consumer-to-Consumer (C2C):** It is a form of electronic commerce in which products or services are sold from one consumer to another consumer with the help of online market such as the auction site eBay. For example: Smita is buying an iPad from Anita on eBay or I am selling a car to Mr. Ramzan on olx are the examples of C2C. Website examples: eBay.com, olx.in.
5. **Business-to-Government:** B2G model is a variant of B2B model. Such websites are used by governments to trade and exchange information with various business organisations. Such websites are accredited by the government and provide a medium to business to submit application forms to the government.
6. **Electronic Governance or E-governance:** E-governance is the application of information and communication technology (ICT) for delivering government services, exchange of information, communication transactions, integrations of various stand-alone systems and services between government-to-citizen (G2C), Government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) as well as back office processes and interactions within the entire government framework. Through e-governance, government services will be made available to citizens in a convenient, efficient and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens and business/interest group. In e-governance, there are no distinct boundaries.

3.10.3 Business models of e-commerce: models based on transaction party(B2B, B2C, B2G, C2B, C2C, E-Governance)

E-commerce can be classified based on the type of participants in the transaction:

- **Business-to-business (B2B):** B2B e-commerce transactions are those where both the transacting parties are businesses, e.g., manufacturers, traders, retailers, and the like.



- **Business-to-consumer (B2C):** When businesses sell electronically to end consumers, it is called B2C e-commerce.
- **Consumer-to-consumer (C2C):** Some of the earliest transactions in the global economic system involved barter – a type of C2C transaction. But, C2C transactions were virtually non-existent in recent times, until the advent of e-commerce. Auction sites are a good example of C2C e-commerce.

3.10.4 Benefits of E-commerce

The primary benefits of e-commerce revolve around the fact that it eliminates limitations of time and geographical distance. In the process, e-commerce usually streamlines operations and lowers costs.

3.10.5 What is M-commerce?

M-commerce (stands for mobile commerce) is the buying and selling of goods and services (*) through wireless handheld devices (**) such as cellular telephone and personal digital assistants (PDAs). In other words, it's a complete online shopping experience, but with all the convenience of being on a cellphone or tablet. Known as next-generation e-commerce, m-commerce enables users to access the internet without needing to find a place to plug in. The emerging technology behind m-commerce, which is based on the Wireless Application Protocol (WAP), has made far greater strides in Europe, where mobile devices equipped with web-ready micro-browsers are much more common than in the US.

(*),(**):

- **Wireless handheld device:** The emerging technology behind m-commerce is based on the Wireless Application Protocol (WAP). Handheld devices that can be used wireless are: cellular telephone, personal digital assistants (PDAs), tablet, phablet, etc.
- **Goods and Services applicable so far:** Mobile Money Transfer, Mobile ATM, Mobile ticketing, Mobile vouchers, coupons and loyalty cards, Content purchase and delivery, Location-based services, Information services, Mobile banking, Mobile brokerage, Auctions, Mobile browsing, Mobile purchase, In-application mobile phone payments, Mobile marketing and advertising.
- SimiCart is the best Magento mobile app builder so we can help store owners and customers feel comfortable when shopping by mobile app in m-commerce era.
- **M-commerce:** M-commerce is short for "mobile commerce." The rapid penetration of mobile devices with internet access has opened new avenues of e-commerce for retailers.

3.11 Models Based on Revenue Models

3.11.1 Business Revenue Model

Advertising Revenue: A website that offers its users contents, services, and/or products also provides a forum for advertisements and receives fees from advertisers. Websites, those are able to attract the greatest viewership are able to charge higher advertising rates. Number of people visiting a website is known as Hits. Website examples: Yahoo.com, Google.com

Subscription Revenue: A website that offers its users contents or services charges a subscription fee for access to same or all of its offerings. They may charge monthly/annual subscription fee. The contents offered by such site, must be a high value-added, premium offering that neither is readily available elsewhere nor easily replicated. Examples: Consumerrepots.org, Dalalstreet.com

Transaction Fee Revenue: A company receives a fee for executing a transaction. For example, eBay provides an online auction marketplace and receives a small transaction fee from the seller if the seller is successful in selling the item. Website examples: eBay, sharekhan.com

Sales Revenue: Companies derive revenue by selling goods, information or services to customers. The percentage of people visiting the site and buy something is known as conversion rate. Website examples: Amazon. Flipkart.

Affiliate Revenue: Sites that steer business to an "affiliate" receive a referral fee or percentage of the revenue from any resulting sales. Website example: Mypoints.

3.12 Electronics Funds Transfer

Electronic Fund Transfer is popularly known EFT and represents the way business can receive direct deposits of all payments from the financial institution to the company's bank account. Once the user signs up, money comes to his directly and sooner than ever before. EFT is fast, safe and means that the money will be confirmed in user's bank account quicker than if he had to wait for the mail, deposit the cheque and wait for the funds to become available. EFT moves money between accounts faster and paperless way.

Automated Teller Machines (ATM's): Consumers can do their banking without assistance of a human being. You can get cash or make deposits or pay bills or transfer funds from one account to another electronically. These machines are used with Card and PIN (Personal Identification Number).

Point-of-sale (POS) Transactions: Debit or EFT cards can be used when shopping to allow the transfer of funds from consumer's account to the merchant's. To pay for a purchase, the consumer presents a card instead of cash. Money is taken out of the consumer's account and put into the merchant's account electronically.

Preauthorised Transfers: This is a method of automatically depositing to or withdrawing funds from an individual's account, when the account holder authorises the bank or a third party to do so.

Phone Transfer: Consumers can transfer funds from one account to another by mobile phone.

3.13 Electronic Data Interchange (EDI)

EDI (Electronic Data Interchange) is the transfer of data from one computer system directly to another by standardised message formatting, without the need for human intervention. EDI permits multiple companies – possibly in different countries – to exchange documents electronically, Data can be exchanged through serial links and peer-to-peer networks, though most exchanges currently rely on the internet for connectivity.

An EDI messages contains a string of data elements, each of which represents a singular fact, such as a price, product model number, and so on, separated by delimiter. The entire string is called a data segment. One or more data segments framed by a header and trailer form a transaction set, which

is the EDI unit of transmission (equivalent to a message). A transaction set often consists of what would usually be contained in a typical business document or form.

When sending an EDI document, both parties or trading partners must adhere to the same set of rules. These standards define where and how the information from the document will be found. Translation software processes the information differently for sent and received messages and performs a complete audit of each step to ensure information is sent or received in EDI format. When the translator on the receiving computer reads a document, it knows where to find the buy's company name, order number, purchase items and price, for example. This information is then sent to the receiver's order entry system without necessitating manual order entry.

EDI applies to documents such as purchase orders, invoices, shipping notices and commission sales reports, as well as other important or classified information. For example, an insurance company can verify that an applicant has a driver's licence through an EDI exchange.

EDI is primarily used by large companies to have a uniform processing system, enabling efficiency. Cost, speed, accuracy and efficiency are the major benefits of EDI. The system is expensive to implement and usually requires help from a consultant that specialises in the field.

Using EDI systems eliminates the need – and therefore cost – to print, file, store, post and retrieve paper documents. The goal is to get rid of paper and have everyone working with the same invoice so that information is processed and read easily.

Automating paper based tasks improves data quality, and transactions are exchanged within seconds or minutes instead of days or weeks. EDI frees up staff time to work on more important tasks. Business-critical data is sent on time and tracked in real-time by automating the transfer of data among applications across a supply chain.

Different EDI standards address the needs of specific industries or regions or other specifications. ANSI(American National Standard Institute) standards are used in the U.S. And EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport) standards are used outside U.S.

Advantages:

Direct Advantages

- **Cost-cutting:** On stationary and staff.
- **Elimination of Errors:** Because there is no data entry of an order.
- Less time is required for placing an order.
- **Fast Response** of order processing and status of order.
- **Accurate Invoicing:** No data entry of invoice at both the end. Invoice can be matched with order automatically.
- **EDI Payment:** Payment can be matched with relevant invoices.

Indirect Advantages:

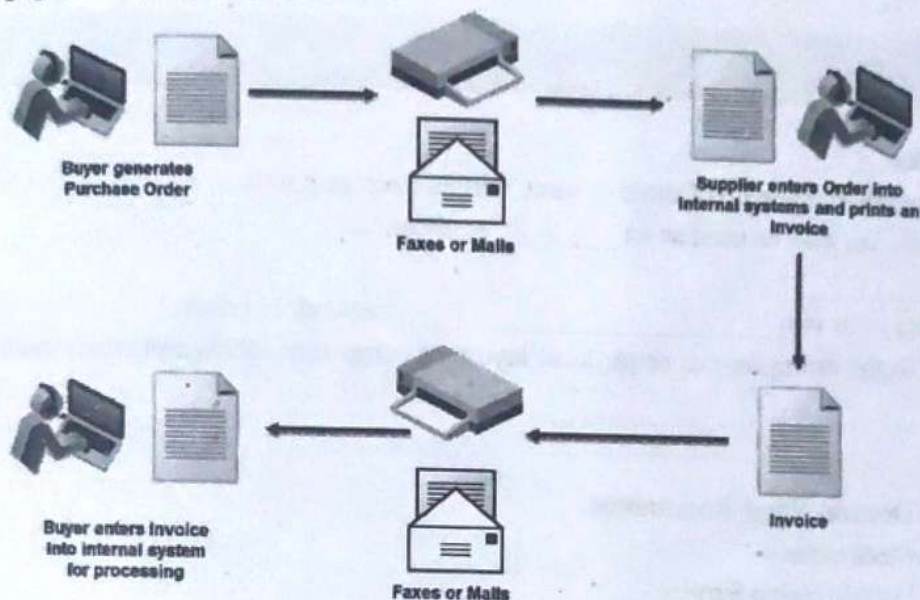
- Better cash flow
- Reduced stock holding

3.14 Data Interchange

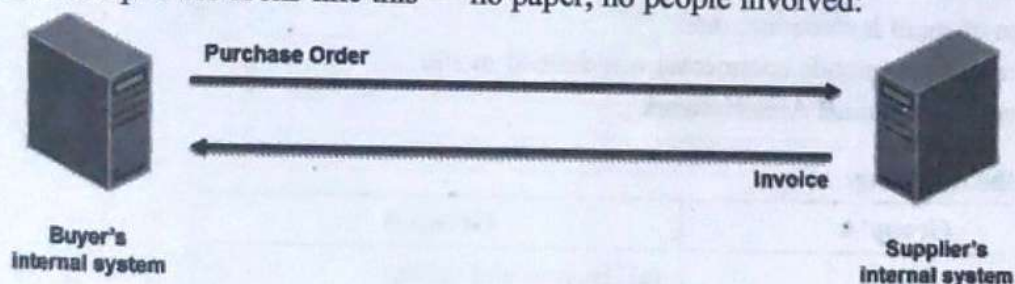
By moving from a paper based exchange of business document to one that is electronic, businesses enjoy major benefits such as reduced cost, increased processing speed, reduced errors and improved relationships with business partners. Learn more about the benefits of EDI here.

Each term in the definition is significant:

- Computer-to-computer:** EDI replaces postal mail, fax and email. While email is also an electronic approach, the documents exchanged via email must still be handled by people and also introduces errors. Instead, EDI documents can flow straight through to the appropriate application on the receiver's computer (e.g., the Order Management System) and processing can begin immediately. A typical manual process looks like this, with lots of paper and people involvement:



The EDI process looks like this — no paper, no people involved:



- Business documents:** These are any of the documents that are typically exchanged between businesses. The most common documents exchanged via EDI are purchase orders, invoices and advance ship notices. But, there are many, many others such as bill of lading, customs documents, inventory documents, shipping status documents and payment documents.
- Standard format:** Because EDI documents must be processed by computers rather than humans, a standard format must be used so that the computer will be able to read and understand the documents. A standard format describes what each piece of information is and in what format (e.g., integer, decimal, mmddyy). Without a standard format, each company would send documents using its company specific format and, much as an English

speaking person probably doesn't understand Japanese, the receiver's computer system doesn't understand the company-specific format of the sender's format.

- ❖ There are several EDI standards in use today, including ANSI, EDIFACT, TRADACOMS and ebXML. And, for each standard there are many different versions, e.g., ANSI 5010 or EDIFACT version D12, Release A. When two businesses decide to exchange EDI documents, they must agree on the specific EDI standard and version.
- ❖ Businesses typically use an EDI translator – either as in-house software or via an EDI service provider – to translate the EDI format so the data can be used by their internal applications, and thus enable straight through processing of documents.

Business partners: The exchange of EDI documents is typically between two different companies, referred to as business partners or trading partners. For example, Company A may buy goods from Company B. Company A sends orders to Company B. Company A and Company B are business partners.

3.15 Questions

Q.1. Fill in the blanks:

1. A _____ network is made up of three or more wireless access points.
2. Microsoft outlook can also be used as an _____ application.
3. DNS stands for _____.
4. Wireless bridging joins two _____ network together.
5. _____ refer to the arrangements or physical layout of computers cables and others components on the network.

Q.2. True or False:

1. DNR stands for Domain Name Registration.
2. Communications technique.
3. DNS stands for Double Name Service.
4. LAN stands for Local Area Network.
5. Full form of email is electronic mail.
6. The m-commerce (mobile commerce) was defined in 2007.
7. MAN stands for Manual Area Network.

Q.3. Match the following:

Group A	Group B
1. Revenue model	(a) Buying and selling
2. Domain name	(b) Affiliate marketing Registration
3. E-commerce	(c) Domain name registrar
4. M-commerce transactions	(d) Online mobile transactions

Q.4. Write short notes:

1. Different types of business model
2. Benefits of EDI
3. Routers
4. Domain name registration

5. Domain name hosting
6. M-commerce
7. E-commerce
8. LAN
9. MAN Email Internet and its Application

Q.5. Answer the following:

1. Explain the different types of revenue and models of e-commerce.
2. What is the use of internet?
3. Write the steps of outlook.
4. Explain the email and the steps of email.



E-Security Systems

Chapter Outline:

- 4.1 Threats to Computer Systems and Control Measures
- 4.2 IT Risk
- 4.3 Information System Security
- 4.4 Security on the Internet
- 4.5 E-business Risk Managements
- 4.6 Understanding and Defining Enterprise Wide Security Framework
- 4.7 Information Security Environments in India with Respect to Realtime Application in Business
- 4.8 Threat Hunting Software
- 4.9 Questions

4.1 Threats to Computer Systems and Control Measures

- Threats can cause harm to the computer system and the network.

4.1.1 Types of Threats

1. Virus
2. Spam
3. Physical Threats
4. Hacking
5. Phishing

Explain the following:

1. Virus

Advantages:

1. A computer virus attaches itself to the program.
2. In more technical terms, a computer virus is nothing but the type of malicious code or program written to modify the way a computer operates and that which is designed to spread from one computer to another.
3. Virus can copy itself to other computers.

Disadvantages:

1. Even they can steal some information.
2. They slow down your computer.
3. They can crash our computer or delete our file.
4. Some of the applications won't start.

Measures to be taken to prevent virus:

1. Certified and secured protection should be used or purchased.
2. Scanning the system should be done regularly.
3. Beware of downloading applications from sites, and also from the attachments of the emails.

2. Spam

Advantages:

1. Spammers hack personal account and send false links under the appearance of a user or trusted contact such as friend and family.
2. Spam not only wastes people's time with unwanted email, but it also needs lot of network bandwidth.

Disadvantages:

1. Spam also takes lot of memory.
2. Spam even wastes lots of bandwidth.
3. Spam severely damages an internet company's reputation.

Measures to be taken to avoid spam:

1. Never disclose your email address on any website.
2. We should avoid opening spam email and spam messages.
3. Use a disposable email address.

3. Physical Threats

1. Physical threats is that which can be fire, vandalism, earthquake, flood, etc.
2. Physical threats cause damage to physical parts of computers or any hardware.

4. Hacking

Advantages:

1. Hacking refers to the practice of modifying computers software and hardware which is performed by a hacker to achieve a goal.

2. Hacking is nothing but to identify the weak point in computers system or network.
3. Hacking is done to explain the weakness of computers system by gaining access of it.

Disadvantages:

1. Hacking is to steal ones secret by breaking security by means of free internet, free call, etc.
2. Hacking tool is used by hacker to steal information and password.
3. Hacking can violate people's privacy.

Measures to be taken to prevents hacking:

1. Websites should secure their sites with digital SSL certification.
2. Strong encryption technology should be initiated.

5. Phishing

1. Some link in the email will ask us to enter more information like our full name, address, phone number, social security numbers, and credit card numbers.
2. Phishing is a way to steal our personal information.
3. It is performed by sending out email which comes from duplicate copies of websites such as eBay, PayPal or other banking institutions.

Measures to be taken prevent phishing:

1. Improve of the security our computers.
2. We should check the source of information from a incoming mail.
3. We should identify a phishing email.
4. We should check the data information in phishing.

4.1.2 Threat Management

Write a short note on Threat Management

1. The benefit of a threat management product is its capability to decrease difficult
2. Threat managements which are usually brought as obscure services or system application provide interruption finding spam and give the information.
3. Threat management is an initial step towards safety management.
4. The use for security of threat management

4.2 IT Risk

4.2.1 Introduction

Information technology risk is any risk to information technology. Information is a valuable and important asset, the rise of knowledge economy and the digital revolution has led to organisations becoming increasingly dependent on information processing and especially IT.

4.2.2 Measuring IT Risk

Explain the term Measuring IT Risk

It is useful to introduction related IT risk

- **Information security event:** The possible occurrence of a systems service, or network state indicating a possible breach of information security policy or failure of safeguards, or a previously unknown situation that may security relevant.
- **Information security incident:**
 1. They give security of business information.
 2. An actual or potentially adverse effect on the security or performance of a system.
- **Impact:**

The following are explained:

 1. Consequences can be expressed quantitatively.
 2. Consequences can range from positive to negative.
 3. There can be more than one consequences from one event.

4.2.3 Risk Mitigation and Management

Risk Mitigation

Risk mitigation is the planning and developing of the process; and options and actions to enhance opportunities and reduce threat to the projects objective.

Risk Managements

1. IT is the risk managements it application of risk managements, method of information technology in order to manager IT risk.
2. Risk managements' plan increasingly includes companies process for identifying and controlling threat to its digital assets.
3. Risk management is considered as the component of wide enterprise risk managements system.
4. Risk management is nothing but the process of identifying, controlling and accessing threat to an organisation's capital and earning.

4.3 Information System Security

- Information system security is the process to protect the data and information from the information system.
- The information system deals with:
 1. The elements of security
 2. Security program
 3. Security controls

Explain the following:

1. **Security Program:** The very first achievement of management program and security is the data information.
2. **Security Management Responsibilities:**

Write security managements' responsibilities.

- (a) The risk managements for the business are safety of risk is necessities.
- (b) Determining the objective, scope, polices, etc.

3. Security Controls:

There are two types of security.

- (a) Physical control
- (b) Technical logical control

Following are explained:

(a) Physical control

- (i) Monitoring for interruption
- (ii) Environmental control
- (iii) Protecting the boundary of the facility
- (iv) Controlling a single individual access into the capability and different departments.

(b) Technical logical control

Logical controls, also called technical controls, are used to provide access to your organisation's data in a manner that conforms to management policies. This includes the enforcement of the principles of least privilege and separation of duties. This article looks at both preventive logical controls, in both hardware and software.

4.4 Security on the Internet

Write short note on Security on the Internet

1. Its main purpose is to set up rules and procedures to use beside attack over the internet.
2. Various methods have been used to defend the transmission of data together with encryption and from the ground up manufacturing.

4.4.1 Network Security Risk

Explain Network Security Risk:

Network security involves the permission of access to information in a network which is managed by the administration.

4.4.2 Website Security Risk

Explain Website Security Risk

1. Most of the small organisations or business' feel that they do not stand as a valued target to attackers.
2. All online websites face a range of security risks and threat which is supposed to be understood and assessed.

Types of Security Threats:

- They have more security in the information technology they seek co-operation.
- Security can be break in four way

1. Denial of Service [DoS] attacks which causes service to be unavailable.
2. Changes website system in order to modify what users see.
3. Intercepting private and susceptible information.
4. Database access and stealing or fraud of provides or susceptible data.

4.4.3 Website Hacking

Write short note on Website Hacking

1. Hacking is a kind of electronic graffiti and as some other forms of damage.
2. Website hacking is assault on the website and which can change the location and webpage.
3. Hacking is very different it is use by computers or any electronic material.

4.4.4 Security and Email

1. An email service supplier implements email safety to protect an email service.
2. Email service is recognised as the co-operative measure that is used to protect the access and information of an email account or resource.

4.5 E-business Risk Managements

- E-business security is very important.
- Risk managements play an important role in protecting organisations and its ability to perform our business mission, not just its assets.

4.5.1 Firewall Concept

1. Firewall system is network security which monitors and controls the incoming and outgoing network traffic.
2. Firewall is the technology which emerged in 1980s.

4.5.2 Components of Firewall

1. **Network Policy:**
 - (a) In network policy, there are two levels, higher level and lower level.
 - (b) The higher level is defined as those services that will be allowed or explicitly allowed from restricted network.
2. **Application Gateway:**
 - (a) Application gateway runs on the firewall software between two networks.
 - (b) It provides synchronisation between multiple streams for exchange of data.

4.5.3 Benefits of Firewall

1. Firewall provides good security for computers.
2. Firewall monitors outbound data traffic.
3. Firewall allows users to actively implement policy by creating particular rules.

4.6 Understanding and Defining Enterprise Wide Security Framework

Defining enterprise wide security framework:

1. They may make some department or individuals feel safe, but they do little to protect the enterprise as a whole.
2. The fastest growth and changes are done in the information system.
3. Once issued policy documents give top down influence for everyone in the company from the business united, to departments, to individual employees.
4. The first step is an enterprise wide information system security policy that is always enforced even as a business needs changes.

4.6.1 PPT Methodology

Write short note on PPT Methodology

- Some of the elements are depending upon the other.
- Issues get greater coverage when the elements are combined.
- Using the mixture of these three polices security process is made.
 1. Policy
 2. People
 3. Technology

Following are explained:

1. Policy:

- (a) This policy is the second element to security of PPT mode.
- (b) Policy includes the security of statements and security of policy.

2. People:

- (a) The people elements are various responsibilities to another people of the organisation.
- (b) People are most important elements in the organisation.

3. Technology:

- (a) Technology is the most important element.
- (b) With the help of technology, PPT can give security and support the process.
- (c) The technology is the operating system, the database and technology are the application and tool.

4.6.2 Understanding the Security Framework

1. The several elements are used as four pillars of the program.
2. The use of technology, strategy and usage of business initiative and process and threat.
3. The securing the organization documents and policy the control of the environment.

4.7 Information Security Environments in India with Respect to Real-time Application in Business

In India, for information security, Government of India has created a number of laws.

4.7.1 Types of Real-time System

Explain different types of Real-time System

There are three types of real-time system

1. Deterministic System
2. Soft Real-time System
3. Hard Real-time System

Following are explained:

1. Deterministic System:

- (a) This system has pre-allocation time for every task.
- (b) Each task gets executed only during those time slots.
- (c) The timing behaviour is within a created range.

2. Soft Real-time System:

- (a) The soft real-time system comes from non-real time system.
- (b) That is some rare miss if deadlines are allowed.
- (c) E.g., the control of application.

3. Hard Real-time System:

- (a) All deadlines should be met in time.
- (b) Hard real-time system does not miss a single deadline.

4.7.2 EDI Transaction

Explain EDI Transaction

Advantages:

1. Due to less paper work and manual work, there are less chances of error.
2. Lower maintenance and resource cost.
3. Information can be transmitted from one computer to another.

4.7.3 E-cash

Write short note on E-cash

1. The user must have e-cash software with him and an e-cash bank account from which electronic cash can be withdrawn or deposited.
2. E-cash means electronic cash. E-cash is physically not present, but it is logically present over the internet.

3. The electronic cash can work in the same way as electronic fund transfers are made among the bank.

Advantages of E-cash:

1. Transfer of fund can be immediately carried out by using debit card and online bill payments.
2. Users will have high privacy while doing online shopping.

Disadvantages of E-cash:

1. A power failure is one of the reasons for loss of record.
2. Use of debit card by unauthorised person will lead to loss of money.

4.7.4 Security Requirements for Safe E-payments

1. **Non-repudiation:** Protection against customer denying the order placed and against merchants denying the payments made.
2. **Authentication:** It is the method to verify the buyers or customer identity before payments are authorised.
3. **Privacy:** Exchange of goods and services and money take place in privacy.

4.7.5 Security Measures in International and Cross-border Financial Transactions

1. While allowing cross-border financial transactions, some measures should be take.
2. Cross-border financial transaction is the financial arrangement which is done across a country's border.

4.8 Threat Hunting Software

There are many companies which created software for hunting the threats. Some of them are as follows:

1. Extra hop network
2. Cyber eason
3. Carbon black
4. Sqrrl

This is in contrast to traditional threat management measures such as firewall intrusion detection system.

4.9 Questions

Q.1. Fill in the blanks:

1. EDI stands for _____.
2. PPT is stands _____.
3. Computer virus is nothing but the type of _____.
4. Application gateway is also called as _____.
5. _____ is the process to protect the information.

Q.2. True or False:

1. Electronic cash should have a political value.
2. EDI is an e-commerce data interchange.
3. Hacking is nothing but to identify the weak points in the computers system.
4. Firewall is the technology which has emerged in 1950s.
5. PPT stands for people policy technology.
6. Threat management is an initial step towards safety management.

Q.3. Match the pairs:

Group A	Group B
1. PPT	(a) Application gateway
2. E-cash	(b) Electronic cash
3. Threat	(c) People Policy Technology
4. Firewall	(d) Warehousing
5. EDI	(e) Virus

Q.4. Write short notes:

1. Write short note real-time applications.
2. Write short note on PPT.
3. Write short note enterprise security framework.
4. Write short note E-cash.
5. Write short note threat managements.
6. Write short note on website hacking and it issues.
7. Write short note on hunting software.

Q.5. Answer the following:

1. Explain the different types of real-time system?
2. Write short note on risk mitigation and risk management?
3. Explain the security and email?
4. What are the IT risk?
5. What are the e-business risk managements issues?

