LAB MANUAL
FOR
PERSONAL COMPUTER LAB

PERSONAL COMPUTER LAB MANUAL

PROGRAM NO. 1

Aim:- **To study Microsoft word**

* What is a Microsoft -word?

Word is a word - processor, which is marketed by a company named Microsoft Word 97 is the most full - featured word processing program is used today. Word is one of the most popular word processing software in the world. It is normally sold as part of total office automation software called Microsoft Office.

* A word processor therefore is a computer - based program that is:

1. Is used to type text
2. Corrects spellings and grammatical errors
3. Allow to preview the complete text before it can be printed
4. Gives a variety of character styles and size to choose form

* Saving a Text

With the document open, choose file, save from the menu or press Ctrl + S tool bar.

* Setting Tabs Using The Ruler

Click the tab button on the left end of the ruler to tackle through the five tab choices.
Click the ruler to set the tab stops - all the default tab stops to the left of the new tabs are deleted.
Drag the tab - stop marker on the ruler to change the tab position.
Drag the tab - stop marker off the ruler to remove the tab stop.

* Aligning text vertically

Click the page that contains text you want to align.
Choose File > Page Setup > Layout and choose Top, Center, Justified, or Bottom from Vertically Alignment drop - down list.

.   Formatting a text

_B_   _I_   <u>U</u>

The simplest way to change the way your text looks is to use Bold, Italics, Underline button on the formatting tool bar. To apply these, just click the button you want your text to be formatted into.

Left Alignment   : Text is placed with first letter of every line matching the left side of page.

Justify   : Both left and right side smooth.

Right Alignment :   Text is placed with last letter of every line matching the right side of the page.

·   **Changing the case of text**

Text case refers to whether the characters are capital letters. All lower case letters, or combination of two.

Sentence case   : Converts selection to small letters but for the first letter of every Sentences.

Lower case   : Converts selection to small letters.

Upper case   : Converts selection to capital letter.

Title case word   : Converts selection to small letters but for the first letter of every line.

Toggle case   : Reverses selection from capital to small and vice – a-versa.

·   **To Setup the page**

From the File Menu, choose page setup.
Select the paper size and print orientation.
To adjust margins, click the margin tab.
Click OK when you have finish setting options.

Printing

You can print any office application and choose print option that fits the application.

· ### To Print

From the file menu, choose print or press Ctrl + P. If necessary choose different options in the print. Modify the number of copies as you want.
Click all to print entire document or enter starting and ending page numbers.
Click OK to begin printing.

· ### To Find Text

You can locate a spot in to edit, by searching a word.   From the edit menu choose find or press Ctrl + F. In the find and replace, type text in the find.   Click find next the text in found and highlighted on the screen. To find the next word, find next again. When you will find the text you want, close the find and replace dialogue box.

* ## CUT, COPY AND PASTE

Cut: Start by selecting the text which is to be cut. Select CUT from the
EDIT Menu.
Copy: Start by selecting the text which is to be copied. Select COPY from
EDIT Menu.
Paste: Select the position of the copied text. Select PASTE from EDIT
Menu.

. Checking spelling and grammar using tool bar
Click the spelling and grammar button on standard tool bar.
Accept or ignore any suggested correction.
Click next sentence to resume checking.
Click Add to add the word to the dictionary.
Click Change All or Ignore All to change or ignore all occur
current document.
Click the Check Grammar check box to turn off Grammar checking.

Preview: An option that allows you to see or preview the document before it
can be printed .
**   Select Print Preview from the file menu.

Header : The extra information typed on the bottom margin of every
page in the document.
** Select Header from the view menu.

Footer : The extra information typed on the bottom margin of every
page in the document.
** Select Footer from the view menu.

Creating and Entering Records in a Mail Merge

1. Choose Tools > Mail Merge from the menu bar.
2. Choose Create and select a type of main document.
3. Indicate whether you want to use the active window as the main document or to create a new document.
4. Choose Get Data, and then choose Create Data Source.
5. Review the list of suggested file names in the Create Data Source dialogue box; delete file name that you don't want.
6. Move the insertion point to the position where you want data from data source to appear.
7. Click Insert Merge File and select file names from the insert merge file at the desired position.
8. Save the main document.

KEY BOARD SHORTCUTS

Ctrl +N   :   Create a new document   Ctrl +O   :   Open a document
Ctrl +w   :   Close document   Alt +F4   :   Quit word
Ctrl +z   :   Undo an action   Ctrl +y   :   Redo an action
Ctrl +Shift +p: Change font size   Ctrl +]   :   Increase font size by 1
Ctrl + [:   Decrease font size by 1   Ctrl +b   :   Apply bold formatting
Ctrl +u   :   Apply underline   Ctrl + I   :   Apply italic formatting
Ctrl +shift +d   :   Double underline   Ctrl +p   :   Print document
Ctrl +1   :   Single space line   Ctrl+2   :   Double space line
Ctrl +5   :   Set 1.5-line spacing   Ctrl +e   :   Center a paragraph
Ctrl +j   :   Justify a paragraph   Ctrl +l   :   Left align a paragraph
Ctrl +r   :   Right align a paragraph.

PROGRAM NO. 2

Aim:- *To study Microsoft excel*

WHAT IS MICROSOFT EXCEL?

Ms-excel is a windows based application package, which is also the member of ms-office family. It can be used to automate accounting, scientific calculation related tasks such as calculations and analysis of data. Ms-excel is easily customizable. It provides a very comfortable environment and assists the user in several ways. When excel starts, worksheet opens automatically. The major elements of the excel screens are toolbars, worksheet and status bar.

What is menu bar?

Menu bar contains several menus which can be invoked by simply clicking on them by a mouse or by using the short cut key combinations from the keyboard .These menus provide access to different commands of excel. Menu bar displays the list of all these menu groups. The menus in excel are

Name	shortcut key	purpose
File	alt +f	commands related to file/folder
Edit	alt +e	command related to word processing & text editing
View	alt +v	commands related to page setting & Layout
Insert	alt +i	commands related to insertion of Various types of items
Format	alt +o	commands for text formatting of Cells, rows and columns
Tools	alt +t	contains tools like auto & spell check
Data	alt +d	has data processing commands

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Windows management	alt +w	commands for documents window
Help	alt +h	various commands related to excel help

Important Excel functions

Function	what it does	EXAMPLES
sum (n1, n2)	Calculates the total of all values in Parenthesis	=sum(s2;s3) displays the total of all the numbers in cells s2 through s3
Average (n1,n2)	Calculates the avg. Of a group of values	=avg.(t2:t5) display avg. of all no. In cell t2 through t5.
Count (v1,v2)	Counts the no. Of cells that contain numeric values	=count(w1,w2) if every cell in this range contains a value
Max (n1,n2) Min (n1,n2)	Finds highest and lowest value in the list	=max(a1,a2)displays highest numeric value in list
Today (n1,n2)	Displays today's date in the cell	=today () calculate the no. Of days
Percentage	Calculates percentage of a group of values	=c2*100/d2 displays the percentage of all the no. In cell c2 through d2.

➢ <u>Deleting a worksheet</u>

1. Point to the tab of the worksheet you want to delete and right click.
2. Choose delete from the shortcut menu.
3. Excel displays a confirmation dialog box before permanently deleting the worksheet. Click ok to delete the worksheet.

➢ <u>Printing a worksheet range of data</u>

1. Select one or more ranges to print. The selected ranges do not have to be continues, but they must be on the same sheet.

2. After you make your selection, pull down the file menu and choose print options.
3. In the print dialog box, choose selections from the print area.
4. Click the print preview button to confirm that the current selection is what you want to print. Adjust any other formatting options in the print preview window.
5. Click the print button.

What is a workbook and worksheet?

A workbook is a multi page excel document. Each page in the workbook is called a wok sheet, and the active worksheet is displayed in the document window. At the left end of the horizontal scroll bar are sheet tabs and navigation buttons .Use the sheet tabs to move to another worksheet and the navigation buttons to scroll through the sheet tabs.

What are worksheet components?

Each worksheet is divided into columns, rows and cells separated by gridlines. The first column a, and the letter A appear in the column heading. The horizontal rows are numbered. Each worksheet has 256 columns (a through iv) and 65536 rows.

Insert a worksheet?

To insert a worksheet, go to insert menu and choose worksheet

Delete a worksheet?

To delete a worksheet, click on the work sheet name tab, go to edit menu and choose delete worksheet.

Printing a document?

To print the document, click the print button on the standard toolbar or choose print option from the file menu. A print dialog box will be displayed. Set the different items on the box, as per the print requirement and press ok.

Moving a cell pointer?

To move the pointer one cell to the right, left, up or down use the keyboard arrow keys.

Data transfers between worksheet?

To move or copy data from one worksheet to other, cut or copy the selection and then click the sheet tab for the sheet that you want to paste into. Click in the appropriate cell and press enter to paste.

Creating graphs and charts

Excel has powerful graphics and charting features. These are very useful in presentation, in decision making and in analyzing the data.

1. Open the salary worksheet.

2. Select the cells a8 till a13.

3. Hold down ctrl and select he cells h8 till h13.

4. Now we have two ranges of cells, which are required for the pie chart- the names and the net pay of the employees.

5. Click on the chart wizard on the formatting toolbar. The chart wizard appears.

6. In the chart wizard, under the standard types tab, choose pie as chart type.

7. In the sub-type section select the second figure-pie with a 3-d visual effect.

8. Click next. The next step of the chart wizard appears.

9. Click the finish button. The chart appears as an object in the salary worksheet.

10. Click the save button on the standard toolbar to save the worksheet and the chart.

PROGRAM NO. 3

Aim:- ***To use mail merge to create form letters:***

Step 1: Open or create the main document

1. Do one of the following:

   o Open an existing letter.

   o Create a new letter.

2. On the Tools menu, click Mail Merge.

3. Under Main document, click Create, and then click Form Letters.

4. Click Active Window.

   The active document becomes the main document.

Step 2: Open or create the data source

1. In the Mail Merge Helper dialog box, do one of the following:

   o Create a new data source. Use this method if you haven't already stored the names, addresses, and other data in a data source, and want to store the data in a Word table.

   Data source:

   A file that contains the text and graphics that vary with each version of a mail-merge document ¾ for example, a list of names and addresses for a form letter you want to send to a list of clients ¾ or in any report in which you want to use information from a database.

   o Use data in an existing data source. Under Data source, click Get Data, and then click Open Data Source. Select a Microsoft Word document, or a worksheet, database, or other list, and then click Open. Click Edit Main Document.

   o Use addresses from an electronic address book. Under Data source, click Get Data, and then click Use Address Book. Select an address book, and then click OK. Click Edit Main Document.

Step 3: Edit the main document and insert merge fields

1. In the main document, type the text that you want to appear in every form letter.

2. Insert merge fields where you want to merge names, addresses, and other data from the data source. To insert a merge field, click in the main document, click Insert Merge Field on the Mail Merge toolbar, and then click the field name you want.

Merge fields	Result after the data is merged
«Title» «First Name» «Last Name»	Mr. Paul Martin
«Company»	Astro Mountain Bike
«Address1»	987 1st St.
«City», «State» «Postal Code»	Kent, WA 55588

3. After you complete the main document and insert all of the merge fields, click Save   As on the File menu. Name the document, and then click Save.

Step 4: Merge the data into the main document

1. On the Tools menu, click Mail Merge.

2. If you want to specify the order in which data is merged, or to merge only part of the data, then you can sort and select data records to merge.

3. If you want to see how the merged data will appear, then you can preview the merged documents.

4. In the Mail Merge Helper dialog box, click Merge under Merge the data with the document.

5. If you want to check the data source for errors before you merge, click Check Errors. Choose an option, and then click OK.

6. Do one of the following:

    *   Send the merged letters directly to a printer. In the Merge to box, click Printer, and then click Merge.

    *   Store the merged letters in a new document, so you can review, edit, and print them later.

    *   Distribute the merged letters to e-mail addresses or fax numbers.

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We can summarize the above steps for Creating and Entering Records in a Mail Merge as:

1. Choose Tools> Mail Merge from the menu bar.

2. Choose Create and select a type of main document.

3. Indicate whether you want to use the active window as the main document or to create a new document.

4. Choose Get Data, and then choose Create Data Source.

5. Review the list of suggested-filed names in the Create Data Source dialog box; delete field names that you don't want.

6. Move the insertion point to the position where you want data from the data source to appear. Click Insert Merge Field and select field names from the insert merge fields at the desired position.

PROGRAM NO. 4

Aim:- To study Microsoft PowerPoint

WHAT IS POWER POINT?

Power point is a complete presentation graphics package. It has the powerful features like power point wizards, toolbars and power point views to create good slides. It has all the tools required to produce a professional looking presentation, such as text handling, outlining, and drawing graphics, clipart and so on. Speaker supports and aids help you to create truly effective presentations. It has wizard, auto layouts, and a complete set of easy to use tools assuring you to have everything you need to share your knowledge with others.

❖   **Menus of power point**

Menu bar has several menus which can be invoked by simply clicking on them, by using a mouse or by using a hot key combination from the keyboard. These menus provide access to different commands of power point. These commands are grouped together in menus. Menu bar displays the list of all these menu groups.

Name	Shortcut key	Purpose
File	Alt +f	They are related to file/folder management
Edit	Alt +e	They are related to text &and word editing
View	Alt +v	They are related to page setting and layout
Insert	Alt +i	They are related to insertion of various types of items
Format	Alt +f	They text format cells, rows and column
Tools	Alt +t	They contain tools such as spell & auto checker
Slide show	Alt +d	They have slide show related commands
Windows	Alt +w	Commands for document management
Help	Alt +h	Various commands related to power point help

What is presentation?

Power point is a good way to communicate ideas simply and effectively. For complex topics that are rich with details, such as a scientific paper or an annual report. Each presentation consists of one more pages or slides, which can contain text, bulleted lists, graphics, charts and other data types.

❖ Insert a new slide

To insert a new slide, you can perform any of the following tasks.

1. Insert a slide, go to **insert menu** and choose slide.
2. Choose a new slide button from standard tool bar.
3. From the power point startup screen, choose **blank presentation**.
4. If power point is already open, pull down the file menu. Choose new, select blank presentation from the general tab, and click **ok**.
5. Click the **new** button on the standard toolbar.

❖ Delete a new slide

To delete a slide, make that slides current slide and choose **duplicate slide** from the edit menu. Slide will be deleted immediately.

❖ Duplicate a slide

To duplicate a slide make that slide current slide and choose duplicate slide from the **edit menu**.

❖ Creating master slide

If you want to have certain common items on all the pages without adding them individually to the slides one by one, create a master slide. The items contained in master slide will automatically become the items for all the slides.

What are presentation graphics?

Presentation graphics is an application software available for designing charts. You can perform any of the following tasks.

1. Design characters.
2. Arrange the matter in readable form.
3. Add pictures in the charts.
4. Change the appearance of the alphabets on the charts.
5. Print these charts.

❖ To display slide setup

Ina new presentation, the slides by default have a width of 10inches, height of 7.5 inches and landscape orientation. These settings can be changed using the page setup commands. The procedure for changing the slide setup is follows:

1. Click on the main menu option.
2. Click on the page setup command, the page setup dialogue box with the default settings appear on the screen.
3. Click on the slides sized for dropdown arrow.
4. Click on letter paper (8.5*11 in).
5. Click on the portrait radio button.
6. Click on the ok button to change slide settings for every slide in your presentation. The slides will now be 10inches in height, have a width of 7.5inches and the orientation will be portrait.

❖ Saving a presentation

To save a presentation on disk, click the save button on the standard or choose save option or save as option from the file menu. Option save is to save the file with current name and save as the command to save file with some other name.

❖ **To display a slide show**

A presentation can be displayed on the screen by running a slide show. The slides can be advanced manually or automatically. The procedure for running the slide show is:

1. Click on the slide button. At the bottom of the slide to begin the slide show.
2. Select slide show from the view menu to display a dialog box.
3. One slide is displayed at a time each slide fills the entire screen.
4. Click on the left mouse button or press enter or press page down to move one slide forward.
5. When we reach the last slide in the presentation, power point brings us back to the slide view, or any other view that we are in.
6. Click on file menu option
7. Click on close command to close the presentation.
8. Click on exit command to exit from the power point.

❖ **Printing a presentation**

1. Choose file menu print to open the print dialog box.
2. In the print range area, choose the slides to be printed.
3. In the print what drop − down list, select whether to print slides, handouts, notes pages, or an outline.
4. Set other print options.
5. Click ok begin printing.

❖ **Adding a clip art to a slide**

1. Choose insert<picture >clipart or double- click a clip art placeholder to open the insert clip art dialog box.
2. Select the picture you want to insert and click insert menu.

PROGRAM NO. 5

Aim:- To study Microsoft Access

Database

A Database is a collection of related items grouped together under a single heading. E.g. student details, Bank Account, Employee Details etc. Database can be said to be a collection of files containing records of similar nature. Each record contains all the data relating to one subject in the file.

Using Microsoft access we can manage all your information from a single database file. Within the file, divide the data into separate storage containers called tables; view, add, and update table data by using online forms; find and retrieve just the data we want by using queries and analyze or print data in a specific layout by using reports. Allow users to view or an intranet by creating data access pages.

- To store data, create one table for each type of information that you track. To bring the data from multiple tables together in a query, form, report, or data access page, define relationships between the tables.
- To find and retrieve just the data that meets conditions that WE specify, including data from multiple tables, create a query. A query can also update or delete multiple records at the same time, and perform predefined or custom calculations on the data.
- To easily view, enter, and change data directly in a table, create a form. When we open a form, Microsoft Access retrieves the data from one or more tables, and displays it on the screen with the layout choosen in the Form Wizard, or a layout that is created from scratch.
- To analyze data or present it a certain way in print, create a report. For example, you might print one report that groups data and calculates totals, and another report with different data formatted for printing mailing labels.
- To work with all the objects in a Microsoft Access database a Database window is used.

Tables

A table is an effective way to store your data. Properly organized and well-designed tables increase productivity. Tables are the primary objects used to store data. Tables are often built to store information of particular object. In today's scenario it is becoming more common to type data directly into the database table.

Creating a Table

You can create a table using 'Design View', or 'Table Wizard' to create an initial table, which you can modify later if needed. The 'Table Wizard' provides options for selecting fields, field property, and a table title. You have three option to create table:

a) Create table in Design View.
b) Create table by using wizard.
c) Create table by entering data.

Using Design View

1. Select 'Tables' tab From the Database view, click 'New' and then choose 'Design View' from the 'New Table' dialog box, and click OK.

2. Enter a field name in the first row of the Field Name Column.

3. Press Enter or Tab to move to the Data Type Field.

4. Enter a data type for this field. Access will scroll using the first letter of the data type, or you can also use the drop down list provided to you.

5. Alter the Field Properties section of the table design grid as needed.

6. Add a comment in the description column for your better understanding.

Using Table Wizard

1. Open the 'New Table' Dialog box by using one of the followings:

Select the 'Tables' option from the Insert menu.
Select the 'Tables' tab and then click on 'New' button in the Database window.
Select the 'New' Object toolbar button and choose the Table option.

2. Select table type from the 'New Table' Dialog box.

3. Select table and field from the list of sample tables and sample fields.

4. Give title of the table and create relationship if exist.

Datasheet View to Make a Table

1. Launch MS Access and start a new blank database. Access now launches a blank table for use.

2. Enter data for the first field in the first row.

3. Right click on the first column header (labeled Field 1) and choose Rename from the shortcut menu. This allows you to change the column header, change it to Employee ID for this field.

4. Enter come name data for each of the next three fields, editing the field names to Last Name, First Name, and Middle Name respectively.

5. Move to the next column, Enter yes.

6. Move to the next column to enter date.

7. Click on the Save icon in the toolbar.

8. Click the view button to switch to Design View.

Table and Field Properties

After you have entered the field names, data types and an optional description, you may want to further refine the data design and have more control over the way data is stored, formatted and validated. You can specify all these characteristics of a field in the Field Properties Pane in the Design view.

The properties of a field are the characteristics that define the field. Two properties are required for every field: field name and data type. Many other properties, such as field size, format, caption, and default value, are defined in the Field Properties section of the table's Design View.

As you specify more property entries, you are generally restricting the amount or type of data that can be entered in the field, which increases data entry accuracy. The available field properties vary depending on the data type of the selected field.

The Caption property, however, allows you to override a technical or sample field name (for example, Project Description) with an easy-to-read caption entry (that is, Project Description) when the field name is displayed on datasheets, forms, and reports.

Forms

Properly organized and well-designed forms increase productivity. Forms are the primary objects used to enter and edit data. Forms are often built to match a source document (for example, an employment application or a medical history form) to facilitate fast and accurate data entry. Now, however, it is becoming more common to type data directly into the database rather than first recording it on paper. When data is viewed in many ways, forms provide a great degree of flexibility for viewing and entering data. Though a datasheet also allow you to view many records at a time, the number of fields that can be seen is limited. Forms, on other hand can help you rearrange fields and view many more on a single screen. Form design considerations, such as clearly labeled fields and appropriate formatting, are important. Other considerations include how the user tabs from field to field, and what type of control is used to display the data.

Types of Forms

1. Columnar Forms.
2. Tabular Forms.
3. Main/Subforms.

Columnar Forms

The fields are arranged as columns and resemble a manual data entry form.

Tabular Forms

The fields are arranged as columns and the records are entered in rows. Thus, it resembles a datasheet.

Main/Sub form

This type of form is normally used to depict one to many relationships. The main form displays the main record and sub form displays the records from the related table in Datasheet view.

Creating a Form with a wizard

In the database window, click Forms under Objects.
1. Click the new button on the database on the Database window toolbar.
2. In the New Form dialog box, click the wizard that you want to use. A description of the wizard appears in the left side of the dialog box.
3. Click the name of the table or other record source that includes the data you want to base your form on.
4. Click OK.

5. If you clicked Form Wizard, Chart Wizard, or Pivot Table Wizard in step 3, follow the directions in the wizard dialog boxes. If you clicked Auto Form: Columnar, Auto Form: Tabular, or Auto Form: Datasheet, Microsoft Access automatically creates your form.

Reports

A report is an effective way to present your data in a printed format. A report is a flexible way of viewing and printing summary information. It enables you to display information of the required level of detail. The information can be viewed or printed in any format. Subtotals, statistical evaluations, pictures and graphs can be inserted in a report. Because you have control over the size and appearance of everything on a report, you can display the information the way you want to see it.

Create a Report with a wizard

1. Launch Access and open the database in which you want to build a report.

2. Locate the New button on the Database view toolbar. Click that button to start new report.

3. Choose Report Wizard from the list box. Pull down the combo box at the bottom of the dialog box to choose the query or any other object for the report basis.

4. Click OK to start the actual wizard process. Specify the field what you want to be part of your report.

5. The next dialog box enables you to specify what fields to group on, if any.

6. You can specify the sort in the next dialog box. In the next dialog box you can choose the layout of the report.

7. Give the name to the report which describes the outline of the report and then click Finish button to accomplish your task and to see the preview of your report. A report preview is a screen view of how your report will look on the web or from a printer.

Open a Report

1. In the database window, click Reports under Objects.

2. Click the Report you want to open.

3. On the Database window toolbar, click the Design button to open the report in Design view, or click the Preview button to open the report in Print Preview.

PROGRAM NO. 6

Aim:- *To study History of Computer*

What is a computer?

The word computer comes from the word 'compute' which means to calculate. So a computer is normally considered to be a calculating device that can perform arithmetic operations at enormous speed. The original objective for inventing a computer was to create a fast calculating machine. But more than 80% work done by computers today is of non-mathematical or non-numeric nature. Hence a computer may be defined as a device that operates upon information or data. In short, a computer is an electronic device which is used for information processing. It accepts data, give it to the memory, processes it, give the result to the user.

* Evolution of computer::

Necessity is the mother of invention. The saying holds true for computers also because computers were invented as a result of man's search for fast & accurate calculating devices. Earliest device that qualifies a digital computer is the 'ABACUS' invented around 600 B.C. Another manual calculating device was JOHN NAPIER's bone or cardboard multiplications calculator. It was designed in early 17th century & its upgraded
versions were in use even around 1890.

Others were:

1. THE MARK 1 COMPUTER (1937-44)
2. THE ANTANASOFF- BERRY COMPUTER (1939-42)
3. THE ENIAC (1943-46)
4. THE EDVAC (1946-52)
5. THE EDSAC (1947-49)
6. MANCHESTER MARK 1 (1948)
7. THE UNIVAC 1 (1951)

The computer generations:

The term was introduced to distinguish between varying hardware technologies.
There are totally five computer generations known till today::

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1. FIRST GENERATION (1942-55)

   Some early computers like EDVAC, ENIAC, EDSAC, etc constitute it. These Machines & other of their time were made possible by invention of "vacuum tube" which was a fragile glass device that could control & amplify electronics signals. These vacuum tube computers are referred to as first generation computers.

2. SECOND GENERATION (1955-64)

   The transistor, a smaller & more reliable successor to the vacuum tubes, was invented in 1947. However, the computers that used transistors were not produced in quantity until over a decade later. The second generation emerged with the transistors being the brain of the computer.

3. THIRD GENERATION (1964-75)

   Advances in electronics technology continued & the advent of "microelectronics" technology made it possible to integrate large no. of circuit elements into very small surface (< 5 mm sq.) of silicon known as "chips". This new technology was called "integrated circuits" (IC's). The third generation was based on IC technology & computers the computers which were designed with the use of IC's were called 3rd generation computers.

4. FOURTH GENERATION (1975 ONWARDS)

   The fourth generation computer, which we have now, has LSI chips as its brain. It is LSI technology which has led to the development of very small but extremely powerful computers. It was the start of a social revolution. a whole computer circuit was soon available on a single chip , the size of a postage stamp. Overnight computers became incredibly compact. They became inexpensive to make & suddenly it became possible for anyone & everyone to own a computer.

5. FIFTH GENERATION (YET TO COME)

   Scientists are now at work on fifth generation computers – a promise, but not yet a reality. They aim to bring us machines with genuine I.Q., the ability to reason logically, & with real knowledge of the world. Thus, unlike the last 4 generations which naturally followed its predecessor, the fifth generation will be totally different, totally novel, totally new.

PERSONAL COMPUTER LAB MANUAL

*   Characteristics of computers::

1. **Speed**

   A computer is a very fast device. The amount of work performed by a human in an entire year can be done by a computer in a few seconds .

2. **Accuracy**

   The accuracy of a computer is consistently high and the degree of accuracy of a particular computer depends upon its design. But for a particular computer, each and every calculation is performed with the same accuracy. Errors occur only due to human errors or technological weaknesses.

3. **Diligence**

   Unlike human beings, a computer is free from monotony, tiredness, lack of concentration ,etc, & hence can work for hours together without creating any error & without grumbling.

4. **Versatility**

   A computer is capable of performing almost any task can be reduced to series of logical steps. It can do any kind of work at any time.

5. **Power of remembering**

   A computer can store & recall any amount of information because of secondary storage capability. Even after many years an information can be recalled as it is when stored.

6. **No I.Q.**

   It processes no intelligence of itself. It is not a magical device . It can perform tasks that a human being can. The only difference is that is done with unthinkable speed and accuracy. It cannot take its own decision.

7. **No feelings**

   Computers are devoid of emotions. It has no heart & soul.

Classification of computers::

Computers can be classified according to the type of electronics inside them according to their size .

A. FIRST CLASSIFICATION

Computers can be divided into three types according to their electronics:

1. **Analog computers**
   An analog computer operates on inputs of continuously varying electrical voltage.

2. **Digital computers**
   Digital computers are widely used in commercial & control systems. The current use of the word 'computer' mostly refers to binary electronic digital computer.

3. **Hybrid computers**
   Desirable features of analog & digital machines can be combined to create a Hybrid computing system which is partly analog.

B. SECOND CLASSIFICATION

Computers can also be classified according to their size as:

1. Microcomputers
   The microcomputer is the smallest computer available. Inside it the arithmetic & control unit are combined on a single chip called "microprocessor". Micros contain two types of memory RAM (random access memory), ROM (read only memory). E.g. Compaq, Dell, IBM.

2. Minicomputers
   Minicomputers are more powerful than micros & can support several users at once. They have larger RAM & back storage capacity &can process data more quickly. Mainly used in business & commerce. E.g. IBM, Digital, Sun.

3. Mainframes
   The earliest computers were called mainframes due to their large size. They are of large size & have a very high capacity of main store. E.g. IBM, Digital.

4. Supercomputers
   Complex scientific applications like whether forecasting require a large amount of data to be manipulated within a very short time. Large super computers used for complex tasks requiring a lots of communicational power. E.g. CRAYXMP-416, SX2, Param.

PERSONAL COMPUTER LAB MANUAL

*   What is P. C.?

Personal computers (P C's) are microcomputers designed to be operated by one user processing very little , if any , programming knowledge.

Personal computer makes enormous computing power available to people all walks of life. Consequently, both the numbers of users & the variety of applications are

*   Main operations of a P.C.:

1.   Inputting : Process of entering data & instruction into the computer
2.   Storing : Process of saving data or instruction in the computer
3.   Processing : Performing arithmetic or logical operations
4.   Outputting : Process of producing user information or result for the user
5.   Controlling : Directing the manner & sequence in which all of the above operations are performed

*   Basic organization of a P.C.

1.   **INPUT UNIT:**
It accepts the list of instructions & data from outside world. It converts these instructions in computer acceptable form. It supplies the converted instructions & data to the computer system for further processing.

2.   **OUTPUT UNIT:**
It accepts the result produced by the computer which are in coded form & hence cannot be easily understood by us. It converts these coded results to human acceptable form. It supplies the converted result to the outside world.

3.   **STORAGE UNIT:**
It holds all the data to be processed and instructions required for processing and also the results of processing.

4.   **ARITHEMATIC LOGIC UNIT (ALU):**
Actual execution of the instructions takes place

PERSONAL COMPUTER LAB MANUAL

5. **CONTROL UNIT (CU):**

It acts as central nervous system for the components of computer system. It manages & coordinates the entire computer system.

6. **CENTRAL PROCESSING UNIT (CPU):**

It is the brain of a computer system. All major calculations & comparisons are made inside the computer.

*   Different parts of the computer::

1.   Mother board
2.   Processor
3.   Monitor
4.   Keyboard
5.   Mouse
6.   UPS
7.   Printer
8.   Scanner
9.   LAN Card
10.   MODEM
11.   RAM
12.   ROM
13.   HDD
14.   FDD
15.   Cabinet with SMPS
16.   Speaker

PROGRAM NO. 7

Aim:- *To study Floppy Disk Drive(F.D.D)*

THEORY:-

FLOPPY DISKS::

They are the main storage device for a personal compute. To use the floppy disk in a computer, a Floppy Disk Drive (FDD) and an Interface to connect the computer with the disk drive is required. These storage devices are also called as "EXTERNAL STORAGE DEVICES ". These are available in 3.5 inch & 5.25 inch in size. 5.25 inch drive is very common with PC & XT class machines. But they are slowly getting replaced with 3.5 inch drive. Now-a-days most common drives are 1.44 MB – 3.5 inch disk drive. 200 MB floppy disk drive is also used now-a-days in the big industries.

Parts of a Floppy Disk Drive::

1.   Read / Write Head
2.   Head Actuator / Stepper Motor
3.   Spindle Motor
4.   Circuit Board
5.   Cable Connector
6.   Face Plate

3.5"Floppy diskette

Below we have represented a picture of the now commonly used 3.5" floppy diskettes. The below representation is what the back of a floppy diskette looks like. As you can see there are four main visible parts:
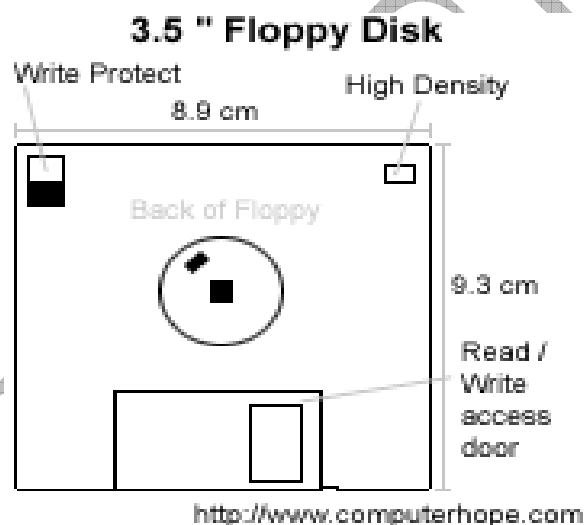
First the top left of the back of the floppy there is a small tab. This tab enables the floppy disk to be switched from write protected and un-write protected. Move the tab to the top position creating a hole makes the disk write protected. This means that nothing can be written, erased or deleted from the diskette. Moving the tab to the bottom position allows the disk to be un-write protected. Which means the diskette can be written too, erased and or have information deleted

from the diskette. Some diskettes which are generally cheaper diskettes will be missing this tab. To write information to the diskette you will have to place a piece of scotch tab over the whole.

Second the top right hand of the back of the floppy you will notice a small whole. This tells the computer if the diskette within the computer is a High Density diskette.

Third you will notice the circular metal disk in the middle of the floppy diskette. This is used to rotate the magnetic medium within the floppy disk casing.

Fourth you will see a metal door which can be moved left and then will snap back to its original position. This door is used to allow the read/write head within the floppy drive to have the capability of accessing the magnetic medium within the casing. Once the diskette is removed this door will snap back into position helping to prevent anything from getting on the magnetic medium and destroying it.

3.5 " Floppy Disk

Write Protect

8.9 cm

High Density

Back of Floppy

9.3 cm

Read /
Write
access
door

http://www.computerhope.com

5 1/4" FLOPPY DISKETTE

Below is a representation of a 5 1/4" floppy commonly used in 1980's and is generally no longer used today. The 5 1/4" floppy diskette was really floppy (flimsy) when compared to the 3.5" floppy diskette.

As you can notice in the above illustration the 5 1/4" floppy does not have many involved components. First you will notice the Write protection tab which would be present if the diskette allowed information to be written to it. Placing a piece of tape over the hole or if the hole was not present this would make the diskette write protected.

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PERSONAL COMPUTER LAB MANUAL

Second you should notice the large hole in the center of the floppy diskette. This hole allowed the platter within the floppy to be rotated allowing the information to be read from the write access hole.

Third you should notice the Index hole this hole was the computers way of knowing where the starting point of the sector was on the diskette by physically having a hole punched in the film disc within the plastic casing.

Finally you should notice the write access hole. This is the location which information would be read from as the disc within would rotate. However because there was no protection like that found on the 3.5" floppy diskette the 5 1/4" floppy diskette was generally protected by placing it within a protective sleeve.
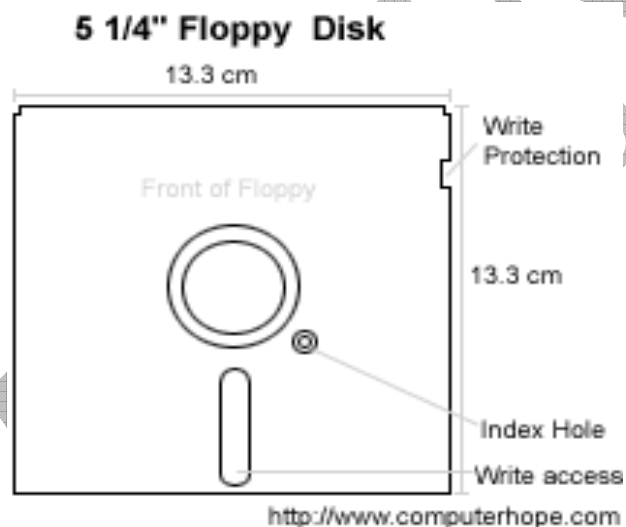
FLOPPY CABLE

In the below illustration we have represented what a floppy cable may look like. The following cable allows a desktop computer to have two floppy drives connected to one controller like the IDE / EIDE controller. Because floppy drives generally do not have a master / slave jumper the drivers are defined by cable select as shown below. In addition to the one connector found before and after the twist there may also be an additional two connectors which connect to the 5.25" floppy disk drive.

http://www.computerhope.com
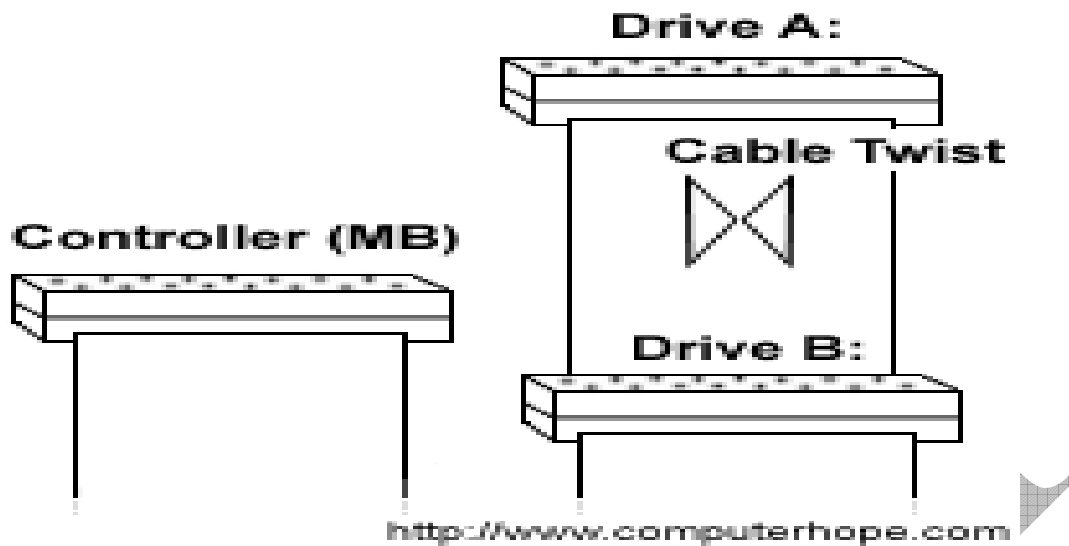
A standard floppy drive connector contains 34-pin wholes we have listed the pins and the description of each pin below.

PIN 1   Ground
PIN 2   Unused
PIN 3   Ground
PIN 4   Unused
PIN 5   Ground
PIN 6   Unused
PIN 7   Ground
PIN 8   Index
PIN 9   Ground
PIN 10   Motor Enable A
PIN 11   Ground
PIN 12   Drive Select B
PIN 13   Ground
PIN 14   Drive Select A
PIN 15   Ground
PIN 16   Motor Enable B
PIN 17   Ground
PIN 18   Direction (Stepper Motor)
PIN 19   Ground

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PIN 20   Step Pulse
PIN 21   Ground
PIN 22   Write Data
PIN 23   Ground
PIN 24   Write Enable
PIN 25   Ground
PIN 26   Track 0
PIN 27   Ground
PIN 28   Write Protect
PIN 29   Ground
PIN 30   Read Data
PIN 31   Ground
PIN 32   Select Head 1
PIN 33   Ground
PIN 34   Ground

FLOPPY DRIVE ABCs

Originally created in 1967 by IBM. The floppy reference is derived from the floppy media that is encased within the protective casing. This media is a magnetic medium and is written to much like the method used by hard disk drives. Floppy drives have been found in computers for several years and are commonly still being used today. The next generation of floppy drives will more then likely be the LS-120 diskette drives which are already being included in many computers now.

Floppy Disk Interfacing and Configuration

The floppy disk controller is the piece of hardware responsible for interfacing the floppy disk drives in your PC to the rest of the system. It manages the flow of information over the interface and communicates data read from the floppies to the system processor and memory, and vice-versa.

PROGRAM NO. 8

PERSONAL COMPUTER LAB MANUAL

*Aim:- To study Motherboard.*

THEORY

MOTHERBOARD:-

The **motherboard** is the main circuit board inside the PC which holds the memory and expansion slots and connects directly or indirectly to every part of the PC. It's made up of a chipset (known as the "glue logic"), some code in ROM and the various interconnections or buses. PC designs today use many different buses to link their various components. Wide, high-speed buses are difficult and expensive to produce: the signals travel at such a rate that even distances of just a few centimeters cause timing problems, while the metal tracks on the circuit board act as miniature radio antennae, transmitting electromagnetic noise that introduces interference with signals elsewhere in the system. For
these reasons, PC design engineers try to keep the fastest buses confined to the smallest area
of the motherboard and use slower, more robust buses, for other parts.

All motherboards include a small block of Read Only Memory (ROM) which is separate from the main system memory used for loading and running software. The ROM contains the PC's Basic Input / Output System (BIOS). This offers two advantages:
 1.   The code and data in the ROM BIOS need not be reloaded each time the computer is started
 2.   They cannot be corrupted by wayward applications that write into the wrong part of memory. A Flash up gradable BIOS may be updated via a floppy diskette to ensure future compatibility with new chips, add-on cards etc.

Parts of motherboard are::
1.   Chipsets
2.   Processor slot
3.   I/O processor slot
4.   IDE slots
5.   COM ports
6.   Power slots
7.   PCI slots
8.   RAM slots
9.   Power sockets
10.   COM slots
11.   DIMM(Dual In Memory Module)
12.   Co-processor sockets for CPU, PCB etc.
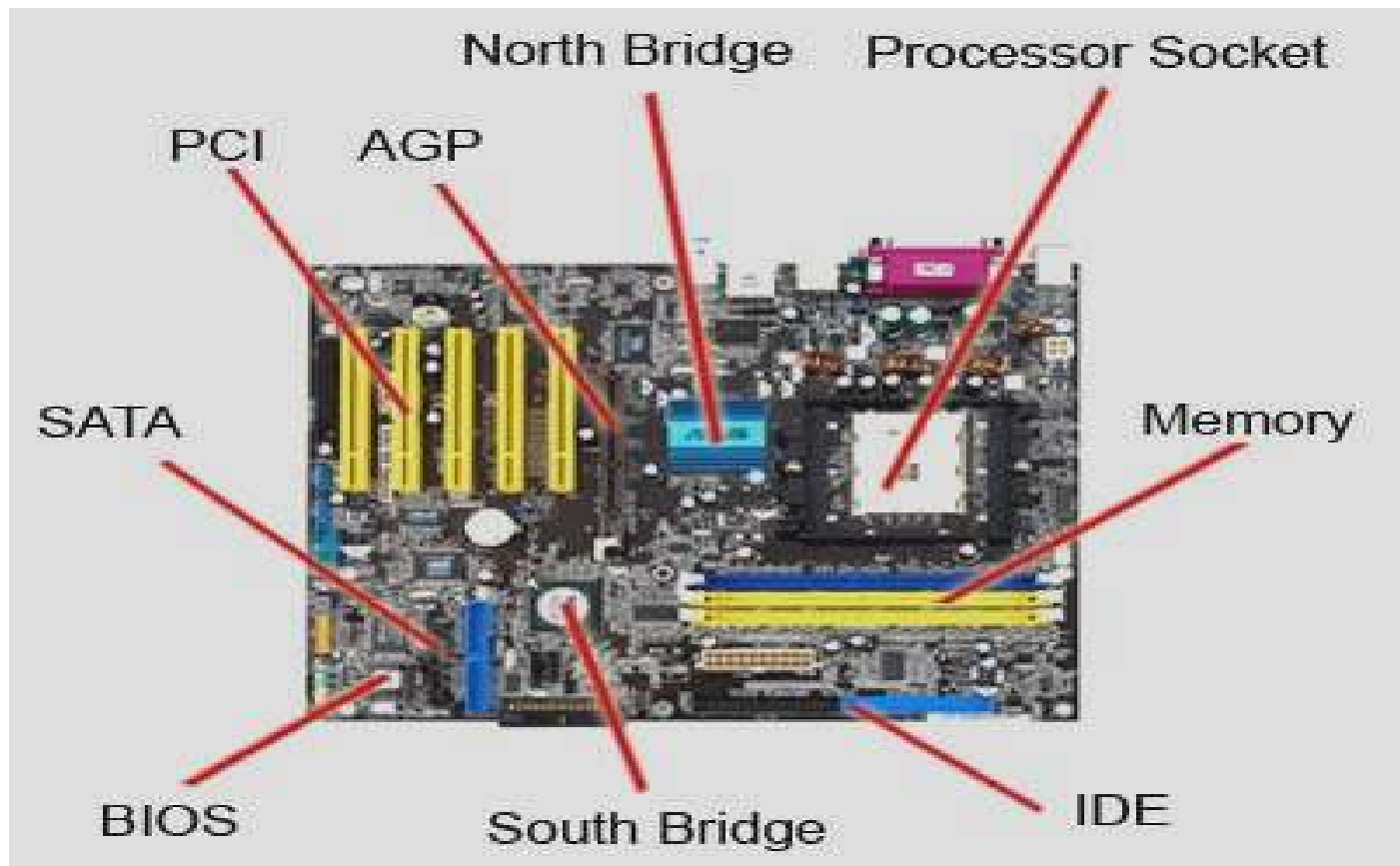
Most important part of a mother board :: Chipset

A chipset or "PCIset" is a group of microcircuits that orchestrate the flow of data to and from key components of a PC. This includes the CPU itself, the main memory, the secondary cache and any devices situated on the ISA and PCI buses. The chipset also controls data flow to and from hard disks, and other devices connected to the IDE channels. While new microprocessor technologies and speed improvements tend to receive all the attention, chipset innovations are, in fact, equally important.

Although there have always been other chipset manufacturers - such as SIS, VIA and Opti - for many years "Triton" chipsets were by far the most popular. Indeed, the introduction of the Intel Triton chipset caused something of a revolution in the motherboard market, with just about every manufacturer using it in preference to anything else. Much of this was down to the ability of the Triton to get the best out of both the Pentium and the PCI bus, together with its built-in master EIDE support, enhanced ISA bridge and ability to handle new memory technologies like EDO and SDRAM. However, the new PCI chipsets" potential performance improvements will only be realised when used in conjunction with BIOSes capable of taking full advantage of the new technologies on offer.

During the late 1990s things became far more competitive, with Acer Laboratories (ALI), SIS and VIA Technologies all developing chipsets designed to operate with Intel, AMD and Cyrix processors. 1998 was a particularly important year in chipset development, with what had become an unacceptable bottleneck - the PC's 66MHz system bus - to finally being overcome. Interestingly, it was not Intel but rival chipmakers that made the first move, pushing Socket 7 chipsets to 100MHz. Intel responded with its 440BX, one of many chipsets to use the ubiquitous Northbridge/Southbridge architecture. It was not long before Intel's hold on the chipset market loosened further still, and again, the company had no-one but itself to blame. In 1999, its single-minded commitment to Direct Rambus DRAM (DRDRAM) left it in the embarrassing position of not having a chipset that supported the 133MHz system bus speed its latest range of processors were capable of. This was another situation it's rivals were able to exploit, and in so doing gain market share.

Form factor

Early PCs used the AT form factor and 12in wide motherboards. The sheer size of an AT motherboard caused problems for upgrading PCs and did not allow use of the increasingly popular slimline desktop cases. These problems were largely addressed by the smaller version of the full AT form factor, the Baby AT, introduced in 1989. Whilst this remains a common form factor, there have been several improvements since. All designs are open standards and as such don't require certification. A consequence is that there can be some quite wide variation in design detail between different manufacturers' motherboards.

ATX – type of mother board

Designed and released in 1995 Intel ATX is a new motherboard form factor with a physical design like the traditional board (30.5 cm X 19 cm) shifted 90 degrees for a better placing of the units. The I/O connectors COM1, COM2 and LPT, keyboard, mouse and USB are mounted directly on the motherboard. The ATX board requires specifically designed chassis with an I/O access opening measuring 1¾ by 6¼ inch.

The ATX motherboard includes advanced control facilities, where the BIOS program continually checks the CPU temperature and voltages, the cooling fans RPM, etc. If over heating occurs, the PC will shut down automatically. The PC can also be turned on by for example modem signals, since the power supply is controlled by the main board. The on/off button will turn the PC "down" without turning it completely off. The computer will also not be able to be turned off while the computer boots up, if however the computer freezes as it is turning on to turn the computer off you must press and hold the power button for 5 seconds and it will turn off.

PROGRAM NO. 9

PERSONAL COMPUTER LAB MANUAL

Aim: - To study Microsoft Access

A hard disk is made up of a collection of disk known as PLATTERS. Platters are coated with the material that allows data to be recorded magnetically. The disk rotates at the very high speed. The typical speed is 3600 RPM. Hard disk of capacities are 40,80,120 GB are available currently. They are installed inside the computer and excess data more quickly than a floppy disk can.

Installing an IDE (Intelligent Device Electronics)

It can be installed in following ways :
1.   Connect the IDE cable to the drive and drive controller.
2.   Make sure that the IDE cable is properly connected which can be checked by checking that the red strip is aligned with PIN 1 on each connector.

HARD DISK DRIVE ORGANISATION::

A Hard disk consists of electronic circuits and electromechanical sub systems.
The electromechanical sub systems in a hard disk are:
1.   READ / WRITE HEAD.
2.   DISK PLOTTER.
3.   SPINDLE.
4.   Positioning of mechanism.
5.   A circulation system.
6.   Air filter.

Hard Disk Interfaces and Configuration
The interface that the hard disk uses to connect to the rest of the PC is in some ways as important as the characteristics of the hard disk itself. The interface is the communication channel over which all the data flows that is read from or written to the hard disk. The interface can be a major limiting factor in system performance. The choice of interface also has an essential impact on system configuration, compatibility, up gradability and other factors.

Over time, several different standards have evolved to control how hard disks are connected to the other major system components used in the PC. These have tended to build upon one another,

and often use confusing and overlapping terminology. The result has been a great deal of confusion surrounding the entire subject. Each time a new variant or enhancement of an interface is introduced, the interface becomes just a

bit more confusing, particularly for those trying to use older hardware, or to mix newer and older devices.

Hard Disk Drives

The hard disk drive in your system is the "data center" of the PC. It is here that all of your programs and data are stored between the occasions that you use the computer. Your hard disk (or disks) are the most important of the various types of permanent storage used in PCs (the others being floppy disks and other storage media such as CD-ROMs, tapes, removable drives, etc.) The hard disk differs from the others primarily in three ways: size (usually larger), speed (usually faster) and permanence (usually fixed in the PC and not removable).
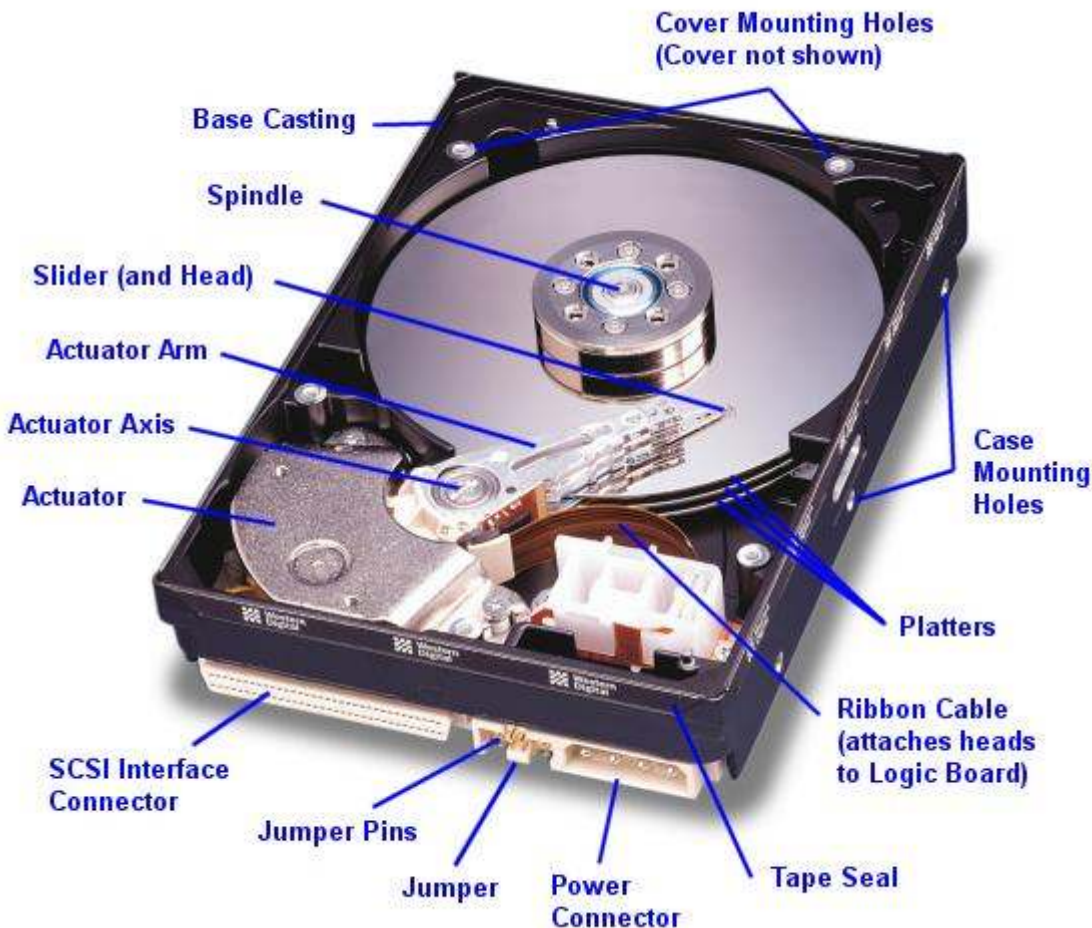
Hard disk drives are almost as amazing as microprocessors in terms of the technology they use and how much progress they have made in terms of capacity, speed, and price in the last 20 years. The first PC hard disks had a capacity of 10 megabytes and a cost of over $100 per MB. Modern hard disks have capacities approaching 100 gigabytes and a cost of less than 1 cent per MB! This represents an improvement of

1,000,000% in just under 20 years, or around 67% cumulative improvement per year. At the same time, the speed of the hard disk and its interfaces have increased dramatically as well. Your hard disk plays a significant role in the following important aspects of your computer system:

Performance:

The hard disk plays a very important role in overall system performance, probably more than most people recognize (though that is changing now as hard drives get more of the attention they deserve). The speed at which the PC boots up and programs load is directly related to hard disk speed. The hard disk's performance is also critical when multitasking is being used or when processing large amounts of data such as graphics work, editing sound and video, or working with databases. Storage Capacity: This is kind of obvious, but a bigger hard disk lets you store more programs and data. Software Support: Newer software needs more space and faster hard disks to load it efficiently. It's easy to remember when 1 GB was a lot of disk space; heck, it's even easy to remember when 100 MB was a lot of disk space! Now a PC with even 1 GB is considered by many to be "crippled", since it can barely hold modern (inflated) operating system files and a complement of standard business software. Reliability: One way to assess the importance of an item of hardware is to consider how much grief is caused if it fails. By this standard, the hard disk is the most important component by a long shot. As I often say, hardware can be replaced, but data cannot. A good quality hard disk, combined with smart maintenance and backup habits, can help ensure that the nightmare of data loss doesn't become part of your life.

Hard Disk Performance, Quality and Reliability
When considering the actual "real world" daily use of hard disks, and contemplating a hard disk purchase, PC users often ask three key questions:

1.   Is this hard disk fast?

2.   Is this hard disk well manufactured?

3.   Is this hard disk going to last?

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Hard disk performance is important because hard disks are one of the slowest internal PC components, and therefore often limit the performance of the system as a whole. Quality and reliability are critical with hard disks, because they are where your data resides! No other PC component can lead so readily to disaster if it fails.

And hard disk quality and reliability remain mysteries to many users, who buy whatever seems fast and cheap, and simply hope for the best.

Subsections contained here are:

The first takes a very detailed look at hard disk performance, discussing different ways that performance can be assessed, common performance specifications, ways of measuring performance, and also describing the various factors inside and outside the hard disk that affect its speed. The second looks at hard disk quality and reliability issues in detail, including a look at warranty issues and features being put into hard disks to improve their reliability. The third major subsection is devoted to the discussion of Redundant Arrays of Inexpensive Disks, or RAID. The use of disk arrays is increasing dramatically as the PC world seeks to improve performance, expand storage capacity, and improve the reliability of the storage subsystem.

Hard Disk BIOS and Capacity Factors

The operation of your hard disk drives is controlled by the interface from the system to the hard disk itself. This interface is the conduit for addressing instructions and commands, sent to the hard disk to select what data is requested, and then a conduit for the data itself, flowing to and from the system. The system BIOS plays a role in the operation of the hard disk, as it provides the standard software routines that allow applications and operating systems such as DOS to access the hard disk. It is also the cause of many configuration and capacity limitation problems that many users have when setting up their hard disks, especially newer ones on older systems.

Hard Disk Logical Structures and File Systems

  The hard disk is, of course, a medium for storing information. Hard disks grow in size every year, and as they get larger, using them in an efficient way becomes more difficult. The file system is the general name given to the logical structures and software routines used to control access to the storage on a hard disk system. Operating systems use different ways of organizing and controlling access to data on the hard disk, and this choice is basically independent of the specific hardware being used--the same hard disk can be arranged in many different ways, and even multiple ways in different areas of the same disk. The information in this section in fact straddles the fine line between hardware and software, a line which gets more and more blurry every year.

The nature of the logical structures on the hard disk has an important influence on the performance, reliability, expandability and compatibility of your storage subsystem. This section takes a look at the logical structures on the hard disk and how they are set up and used for a typical PC installation. I begin with a discussion of different PC operating systems, and an overview of different file system types. I then go into significant detail describing the major structures and key operating details of the most common PC file system, FAT (FAT12/FAT16/VFAT/FAT32). I talk about utilities used for partitioning and formatting hard disks, and also talk a bit about disk compression (even though it is no longer nearly as important as it once was.) I place special emphasis on how to organize the disk for maximum performance--while not getting bogged down in the minutiae of optimization where it will buy you little.

Most of the focus in this section is on the FAT family of file systems, because these are by far the most commonly used, and also the ones with which I am most familiar. I do mention alternative file systems, but do not go into extensive detail on them, with one exception. Recognizing the growing role of Windows NT and Windows 2000 systems, a separate, comprehensive section has been added that describes the NTFS family of file systems. If you are mostly interested in reading about NTFS, you may want to skip some of the earlier subsections that describe FAT, and skip directly to the NTFS material.

PROGRAM NO. 10

Aim:- ***To Check And Measure Various Supply Voltages Of A Personal Computer***

The switch mode power supply (SMPS) unit of a P.C., converts 230 volts A.C.(alternating current) power supply , into voltage current required for the components. It also ensures that clean power supply is available without spikes, i.e. at a constant frequency.

*   Voltage used::
    INPUT   : 220-230 V
    OUTPUT : +12 V , +5 V , -12 V , -5 V

*   Parts of SMPS ::
    1.   PCB (printed circuit board)
    2.   Transistors
    3.   Fans
    4.   Transformer or Conductor
    5.   Heat Sink
    6.   Coil   etc.

*   Apparatus used for checking of voltage
# Multimeter & Voltmeter

*   Types of SMPS
    1.   **A.T.**: In this SMPS the shut down process is manual.
    2.   **A.T.X.**: In this SMPS the shut down process is automatically.

PROGRAM NO. 11

Aim:- To Study, Remove And Replace CD Rom Drive And The Various Cards Used In The System

CD ROM's are used to distribute a wide variety of information to books, to
games, to images and store a large of information. They can also be carried easily as they are small in size.

TO READ A CD ROM – A device called CD ROM is needed, any information or data on CD. Data can be erased or written onto it with help of a special device called the CD repeater or writer.

CD ROM's are available in two types:-
1. CD ROM
2. CD R/W

FRONT VIEWS
1. Head phone jack.
2. Head phone volume control.
3. Disk drawers.
4. Busy indicaters.
5. Emergency eject hole.
6. Play /stop / eject button.

BACK VIEWS
1. Digital audio output connector.
2. Master slave jumper slots.
3. Interface connector.
4. Power in connector.
5. Disk diameter.

PERSONAL COMPUTER LAB MANUAL

SPEED

CAPCITY	DATA TRANSFER RATE	RPM
1X	150 KB/S	300-500
2X	300 KB/S	400-1060

4X	600 KB/S	500-2120
.	.	.
.	.	.
.	.	.
.	.	.
52X	7800KB/S	10400-27560

INSTALLING THE IDE:-

1. Insert the CD ROM into a free 5.25 inch drive bay.
2. Screw the CD ROM driver.
3. Connect the 4-pin power cable and 40-pins IDE interface cable to the back of the CD ROM drive. The red edge of the IDE cable corresponding to pin 1of the IDE Interface on the CD ROM drive.
4. Adjust the master slave jumper on the back of the CD ROM drive.
5. Connect the CD ROM drive to the IDE ports of your mother board.

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