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Reg.No. : CCA/2021/102751

Course code : CCA/101

Course title : Fundamental of IT &
Programming.

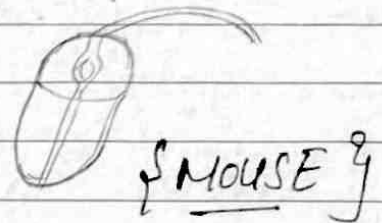
CCA - 101: FUNDAMENTALS OF IT AND PROGRAMMING

ASSIGNMENT - 1

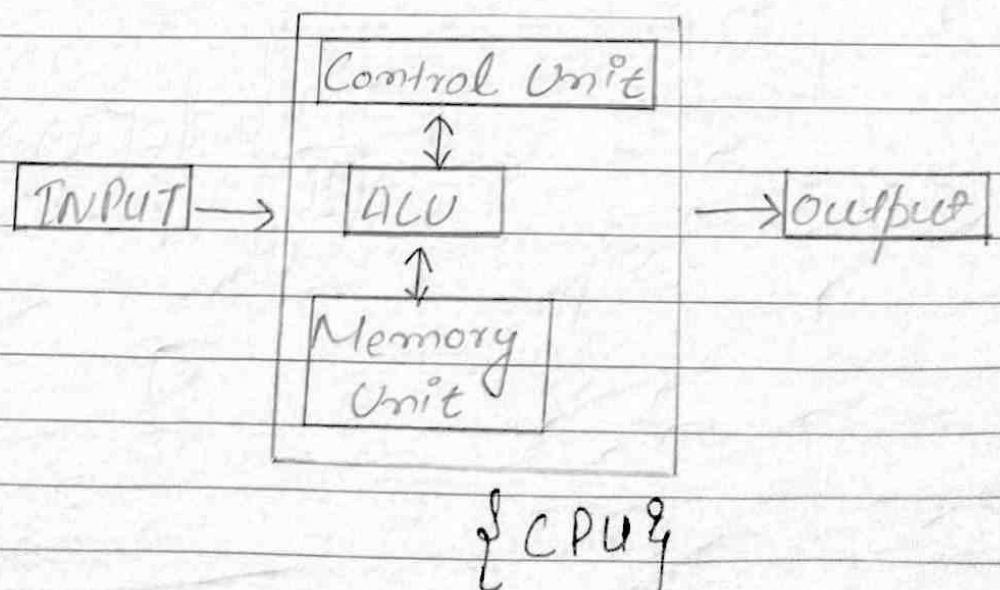
Q1 What are the four fundamental parts of computer? Explain it with the help of diagram.
Ans. → A computer has four main components:

- ① Input Unit
- ② The central processing unit or CPU.
- ③ The Primary memory and
- ④ output unit.

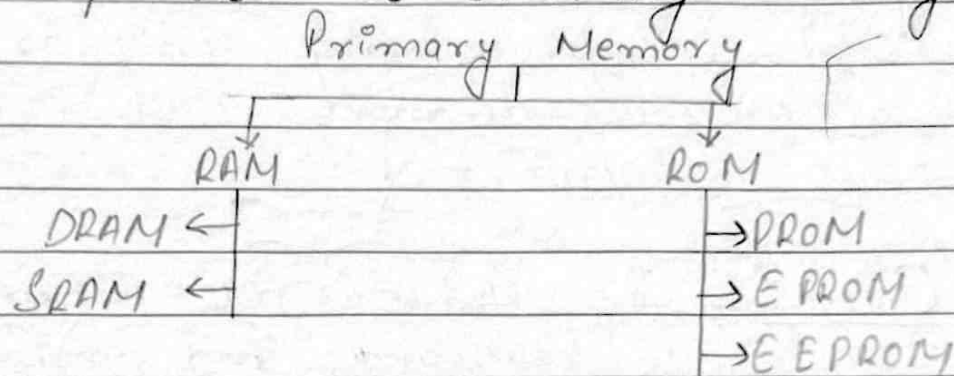
INPUT UNIT → The devices to input information, such as keyboard, and mouse.



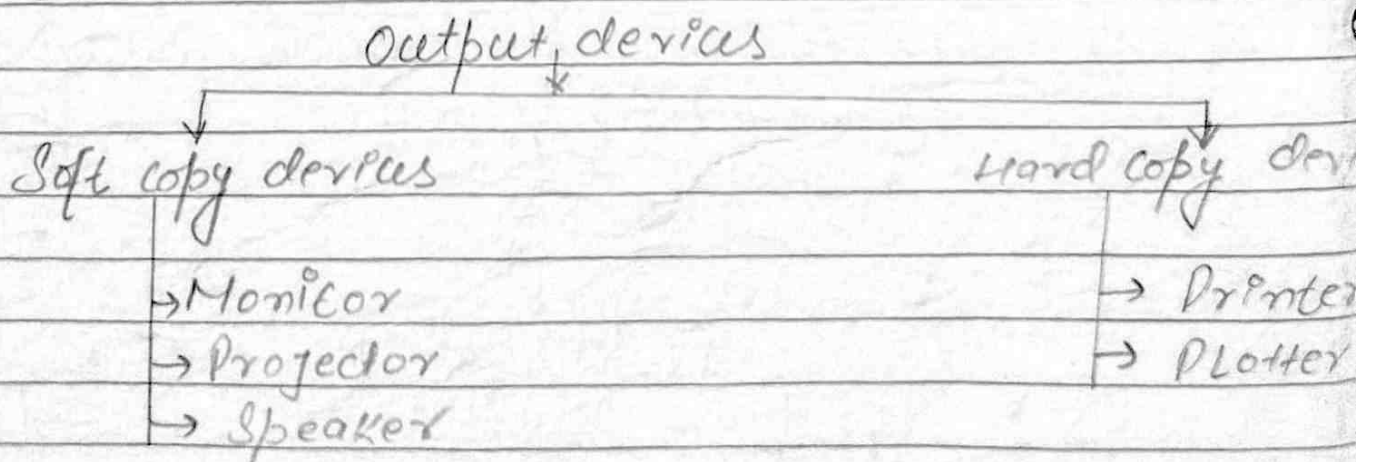
CPU → Center processing unit → The CPU is further broken up into ALU, control unit, and instruction unit.



Primary / Main Memory: Primary memory is the computer memory that is directly accessible by CPU. It is comprised of DRAM and provides the actual working space to the processor. It holds the data & instructions that the processor is currently working on.



Output Device: An o/p device is any periphery that receives data from a computer, usually for display, projection, or physical reproduction. e.g., the image shows an inkjet printer, an o/p device that makes a hard copy of anything shown on the monitor.



Q2. Discuss about the classification of computers based on size and capacity?

Ans: Based on size and capacity, computers are classified as follows:-

- Super Computers
- Mainframe Computers
- Mini Computers
- Micro Computers.

Super Computers

A Super Computer is a computer with a high level of performance compared to a general-purpose computer. Performance of a supercomputer is measured in floating-pt. operations per second (FLOPS) instead of million instructions per second (MIPS).

Mainframe Computers

A mainframe is a large integrated machine with a lot of memory, a lot of storage capacity, and a lot of high-end processors. To such a large functioning it has a lot of computational power in comparison to normal computer systems.

Mini Computers

Minicomputer, computer that was smaller, less expensive, and less powerful than a mainframe or supercomputer but more expensive and more powerful than a personal

Computer. Minicomputers were used for scientific and engineering computations, business transaction processing, file handling, and database management.

Micro Computer

A micro computer is a complete computer on a small scale, designed for use by one person at a time. An antiquated term, a microcomputer is now primarily called a personal computer (PC), or a device based on a single-chip microprocessor. Common microcomputers include laptops and desktop.

Q3. What is the meaning of Computer gen. How many Computers Gen. are defined? Which technologies were / are used?

Ans: Computer gen. is classification of computers into different groups according to their manufacturing date, memory device, hardware and s/w technologies used in them. There is five gen. of computer.

1st GEN.

The period of first gen. was from 1946-1959. The first computers of first gen. use vacuum tubes as the basic components for memory and circuitry for CPU. These tubes, like electric bulbs, produced a lo.

of heat and the installations used to fuse frequently.

2nd GEN

The period of second gen. was from 1959-1965. In this gen., transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first gen. machines made of vacuum tubes.

3rd GEN

The period of Third gen. were computers that emerged due to the development of the Integrated circuit (IC). They were the first steps toward computers as we know them today. Their main feature was the use of integrated circuits, which allowed them to be shrunk down to be as small as large toasters.

4th GEN

The period of 4th (fourth gen.) was from 1971-1980. Computers of fourth gen. used very large scale Integrated (VLSI) circuits. VLSI circuits and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of fourth generation.

5th GEN

The fifth Gen. Computer System (FACS) was an initiative by Japan's Ministry of International Trade and Industry (MITI), begun in 1982, to create computers using massively parallel computing and logic programming. It was to be the result of a govt./industry research project in Japan during the 1980's.

Q4 Different b/w volatile and non-volatile memories?

1	<u>Volatile Memory</u>	<u>Non - Volatile Memory</u>
①	Volatile memory is the type of memory in which data is lost as it is powered-off.	Non-volatile memory is the type of memory in which data remains stored even if it is.
②	It is faster than non-volatile memory.	It is slower than volatile memory.
③	RAM is an example of volatile memory. (Random Access Memory).	ROM (Read Only Memory) is an example of non-volatile memory.

Q5 Distinguish among system software, app. s/w, and open source s/w on the basis of their features?

Ans:-

System Software
System s/w is a type of computer program that is designed to run a computer's h/w and application programs. If we think of the computer system as a layered model, the system s/w is the interface b/w the h/w and user applications. The O.S (Operating system) is the best-known example of system software.

Application Software
An Application s/w program (application or app for short) is a computer program designed to carry out a specific task other than one relating to the operation of the computer itself, typically to be used by end users. Word processors, media players, and accounting s/w are examples.

Open Source Software
Open-Source s/w (OSS) is computer s/w that is released under a license in which the copyright holder grants users the rights to use, study, change and distribute the software and its code to anyone and for any purpose. Open-source s/w may be developed in a collaborative public manner.

Qb(a) Create a file in MS-Word to insert a paragraph about yourself and save it with file Name "yourself". Describe all steps involved in it.

Ans:- 1. Open Word. Or if Word is already open, select File > New.

2. In the search for online templates box, enter a search word like letter, resume, or invoice. Or, select a category under the search box like Business, Personal, or Education.

3. Click a template to see a preview.

4. Select Create.

1 b) Write steps regarding following:-

(1) To change the font style.

Ans:- Select the text you want to modify.

(2) To change the font size.

Ans:- Select the home tab and locate the font group.

(3) To change the font color.

Ans:- Click the drop-down arrow next to font color box.

(4) To highlight (in yellow) the line that reads "need to get INB's address."

Q5 Distinguish among system software, app. s/w, and open source s/w on the basis of their features?

Ans:-

System software
System s/w is a type of computer program that is designed to run a computer's h/w and application programs. If we think of the computer system as a layered model, the system s/w is the interface b/w the h/w and user applications. The O.S (operating system) is the best-known example of system software.

Application software
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Open source software
Open-source s/w (OSS) is computer s/w that is released under a license in which the copyright holder grants users the rights to use, study, change and distribute the software and its code to anyone and for any purpose. Open-source software is developed in a collaborative public manner.

2. Select the text you want to edit.
3. Using the tool in the edit toolbar, change the required formatting including font style, paragraph, alignment, list formatting, and indentation option.

Saving

- To save doc. using save as command
1. Click the Microsoft office button/file tab.
 2. Select save as - word document.
 3. Select the location where you want to save the doc. using the drop-down menu.
 4. Enter a name for the doc.
 5. Click the save button.

Printing any type of document

1. Select File & Print.
2. To preview each page, select the forward and backward arrows at the bottom of the page. If the text is too small to read, use the zoom slider at the bottom of the page to enlarge it.
3. Choose the no. of copies, and any other options you want, and select the print button.

Q8 Create a file in MS Word for the following document and save it with the file.

Name _____
-ed in it.
Eq. Eq.

$$x_2 + y_5 = 30$$

$$z^3 + d^4 = 50$$

$$A_2 + B^6 = x_2 + y^8$$

- Ans: Select Insert > Equation or Press Alt +=
2. To use a built-in formula, select design > equation.
3. To create your own, select design > eq > ink equation.
4. Use your finger, stylus, or mouse to write your equation.
5. Select insert to bring your equation into the file.

Q9

Ans: Select the text and make sure it's properly formatted.

Word will insert a new column when a tab character is found, so make sure that columns are separated by tabs.

2. Click the insert tab.
3. Click the table button.
4. Select Convert text to table.

If the text was formatted right, some of the options in this dialog box should already be filled in. Otherwise, set the no.'s of columns + rows, + how to separate the text into columns.

5. (optional) Customize Autofit behavior.
6. Click OK.

The selected text is automatically turned into a table.

Q10

Ans:- 1. Open a blank word document.

2. In the top ribbon, press Insert.

3. Click on the table button.

4. Select the no. of columns and rows you need, or click insert table & a dialog box will appear where you can specify the no. of columns & rows.

5. The blank table will now appear on the page after it as necessary. Standard features like bold, italics, and underline are still available. These items may be helpful for creating headings & calling out certain items in the table.

Q11 Create a following marksheet in MS-Excel and save it with name 'book1'.

Ans:- 1. Right-click the worksheet name tab.

2. Click select move and copy.

3. Click on the move selected sheet to book drop-down menu select (new book).

4. Click OK your new workbook opens with your moved worksheet.

5. Click file > save in your new workbook.

The sum of the marks using Autosum in a range of cells (C2:C11).

Ans: To sum a column of numbers select the cell immediately below the last number in the column. To sum a row of nos, select the cell immediately to the right.

2. Autosum is in two locations; Home > Autosum and formulas > Autosum.

3. Once you create a formula, you can copy it to other cells instead of typing it over and over.

e.g. if you copy the formula in cell B¹² to cell C¹², the formula C¹² automatically adjusts to the new location and calculates the numbers in C2:C11.

4. You can also use autosum on more than one cell at a time.

e.g. you could highlight both cell B¹² and C¹², click autosum and total both columns at the same time.

5. You can also sum numbers by creating a simple formula.

(b) Average of the marks in a range of cells (C2:C11).

Ans: Click a cell below the column or to the right of the row of the numbers for which you want to find the average.

2. On the Home tab, click the arrow next to Autosum > Average, and then press Enter.

(C) highest marks in a range of cells (C₂:C11)

Ans:- In a blank cell, type "= MAX ("

1. Select the cells you want to find the largest number from.
2. Close the formula with an ending parenthesis.
3. Hit enter and the largest number from your selection will populate in the cell.

(d) minimum marks in a range of cells. (C₂:C11)

Ans:- Select the cell C₂ and write the formula.

1. = MIN (C₂:C11) press Enter on your keyboard.
2. The function will return 3.
3. 3 is the minimum value in the range (C₂:C11)

Q13) Describe various steps involved in the following.

① To modify column width of a worksheet.

- Ans:-
1. Select the column or columns that you want to change.
 2. On the home tab, in the cells group, click format.
 3. Under cell size, click column width.
 4. In the column width box, type the value that you want.
 5. Click ok.

② To modify the row or height of a worksheet.

Ans: Select the row or rows that you want to change.

2. On the home tab, in the cells group, click format.

3. Under Cell size, click Row height.

4. In the Row height box, type the value that you want, and then click OK.

5. To delete rows and columns of a worksheet.

1. Select the cells, rows or columns that you want to delete.

2. Right-click and then select the appropriate delete option.

e.g, Delete cells and shift up, Delete cells & shift left, Delete rows or delete columns.

(b) Describe the following terms in the worksheets.

① Absolute reference and relative reference in formula.

Ans:- Select the cell that contains the formula.

2. In the formula bar select the reference that you want to change.

3. Press F4 to switch between the reference types.

② Cell Address.

Ans:- A cell is the intersection of a row and a column. Columns are identified by letters

(A, B, C), while rows are identified by no's (1, 2, 3), Each cell has its own name - or cell address - based on its column and row. In this e.g., the selected cell intersects column C and row 5, so the cell address is C5.

Q14(a) What tools are available to customize our power point presentation?

Ans:- ① Templates and themes.

- | | |
|---------------------|-----------------|
| ② Slide layouts | ⑪ Flowcharts |
| ③ Font | ⑫ Icon charts |
| ④ Color Themes | ⑬ Radials |
| ⑤ Icons | ⑭ Progress Bars |
| ⑥ Shapes | ⑮ Animation |
| ⑦ Stock Photos | ⑯ Transitions |
| ⑧ Charts and Graphs | ⑰ Interactivity |
| ⑨ Maps | ⑱ Audio |
| ⑩ Tables. | ⑲ Video |

(b) Write the steps for the following action for creation of power point presentation.

① Open a Blank presentation?

Ans:- Select the file tab to go to backstage view.

2. Select New on the left, side of the window. then click Blank Presentation.
3. A new presentation will appear.

② Save the presentation as lab1. ppix.

Ans: ① Create a blank presentation.

② Save a presentation.

③ Apply a Design.

④ Compose presentation views.

⑤ Format Text.

⑥ Insert SmartArt

⑦ Insert & Modify Shapes.

⑧ Edit and Duplicate slides.

⑧ Add a title to the first slide: the name of your college.

Ans: ① Select the slide whose layout you will change so that it can have a title.

② Click home > layout.

③ Select title slide for a standalone title page or select title and content for a slide that contains a title and a full slide text box.

④ May other layout options include titles, too. Pick the ones that's best suited for your presentation.

4. Select the click to add title text box. Enter your title for that slide.

④ Type your first name and last name in the subtitle section.

Ans: 1 Using your mouse and cursor, click inside of the top textbox.

② Using your keyboard, type the name of the animal you have been researching in all class.

- ③ Using your mouse and cursor, click inside of the bottom textbox.
- ④ Using your keyboard, type your first and last name, click enter, and type your teacher's name.
- ⑤ Add a new slide which has a title and content

- As:
- ① Click the "Home" tab in the ribbon.
 - ② Then click the "new slide" button in the "slides" button group.
 - ③ Alternatively, to add a new slide with a different slide layout.
 - ④ Click the "Home" tab in the ribbon.

Q15(a) Title slide and bullet list?

As: Title slide

The title slide is the first slide of a presentation. It usually contains a title and a subtitle. Of all the slides in a presentation, the first slide is one of the most important, as the title slide generally sets the tone.

- ① Click Home > layout.
- ② Select Title slides for a standalone title page or
- ③ Select title and content for a slide that contains a title and a full slide text box.

Q2 Bullet list.

- Ans: ① On the left-hand side of the powerpoint window.
- ② click a slide thumbnail that you want to add bulleted or numbered text to.
- ③ On the slide, select the lines of text in a text placeholder or table that you want to add Bullets or numbering to.
- ④ On the home tab. In the paragraph group click Bullets or Numbering.

Part 2

Q16 What is the difference b/w Machine lang. and high level language?

Ans: Machine language ⇒ A machine lang. is the only lang. that a computer directly understands, it is usually written in zero (0) and ones (1). A program instruction in machine lang. may look something like this 110010010 whereas High level language ⇒ A high level language is a programming lang. that uses English and mathematical symbols. like +, -, %, and many others, its instructions.

Q17 Discuss about different data types of

C Programming language?

Ans:- There are some common data types in C programming language.

- ① Int - used to store an integer value
- ② Char - used to store or single character
- ③ float - used to store decimal no.'s with single precision.
- ④ double - used to store decimal nos with double precision.

e.g,

```
#include <stdio.h>
int main ()
{
    // datatypes
    int a = 10;
    char b = 'S';
    float c = 2.88;
    double d = 20.888;
    printf("Integer datatype: %d\n", a);
    printf("Character datatype: %c\n", b);
    printf("float datatype: %f\n", c);
    printf("double datatype: %lf\n", d);
    return 0;
}
```

Q/P ① Integer datatype: 10 ② Double float datatype: 2.888000
 ③ char datatype: S.
 ④ float datatype: 2.880000

Q18 Find the output of the following expression.

a) $x = 20/5 * 2 + 30 - 5$

Sol:- $x = \frac{20}{5} \times 2 + 30 - 5$

$$x = 4 \times 2 + 30 - 5$$

$$x = 8 + 30 - 5$$

$$x = 8 + 25$$

$$x = 33$$

Hence, the value of x is 33 As.

(b) $y = 30 - (40/10 + 6) + 10$

Sol:- $y = 30 - 4 + 6 + 10$

$$y = 30 - 0$$

$$y = 0$$

Hence, the value of y is 30 As.

(c) $z = 40 * 2 / 10 - 2 + 10$

Sol:- $z = 40 \times \frac{2}{10} - 2 + 10$

$$z = 8 - 2 + 10$$

$$z = 8 + 8$$

$$z = 16$$

Hence, the value of z is 16 As.

Q19 Describe the syntax of the following statements?

a) If - else statement.

Sol:- `#include <iostream>`
`using namespace std;`

```

int main ()
{
    int number;
    cout << "Enter an Integer";
    cin >> number;
    if (number > 0)
    {
        cout << "you entered a positive
        integer:" << number << endl;
    }
    else if (number < 0)
    {
        cout << "you entered a negative
        integer:" << number << endl;
    }
    else
    {
        cout << "This line is always
        printed";
        return 0;
    }
}

```

O/p Enter an Integer;

(b) for loop

Ans:

```
#include <stdio.h>
int main ()
{
    int i;
    for (i = 0; i < 10; i++)
    {
        printf ("Hello World");
    }
    return 0;
}
```

O/p

10 times write Hello World.

(c)

While loop

Ans:

```
#include <stdio.h>
int main ()
{
    int i = 0;
    while (i < 10)
    {
        printf ("Hello World");
        i++;
    }
}
```

O/p

10 times write hello world.

d) do-While loop →
 Ans: →


```

#include <iostream>
using namespace std;
int main()
{
    int i = 1;
    do
    {
        cout << i << " ";
        i++;
    }
    while (i <= 10);
    }
    
```

O/p.

1 to 10 Ans.

Q20 Find the output of the following program segments.

a)


```

#include <stdio.h>
int main()
{
    int i;
    for (i = 1; i < 2; i++)
    {
        printf("IMS Elhazirabad ");
    }
    }
    
```

O/p IMS Elhazirabad

(b)

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int i = 1;
```

```
    while (i <= 2)
```

```
    {
```

```
        printf("IMS Ghaziabad\n");
```

```
        i = i + 1;
```

```
    }
```

```
}
```

O/p

Two times write IMS Ghaziabad

(c)

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
    int a = 10, b = 100;
```

```
    if (a > b)
```

```
        printf("Larger no. is %d\n", a);
```

```
    else
```

```
        printf("Larger no. is %d\n", b);
```

```
}
```

O/p

Larger number is b.