

CCA-101: Fundamentals of IT & Programming

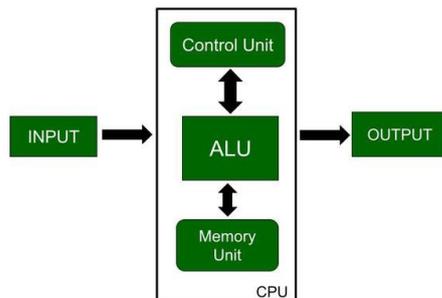
Assignment -1

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Q1: What are the four fundamental parts of computer? Explain it with the help of diagram.

Ans: Four fundamentals parts of computer –

- 1) Central Processing Unit
- 2) Memory Unit
- 3) Control Unit
- 4) Arithmetic and Logical Unit



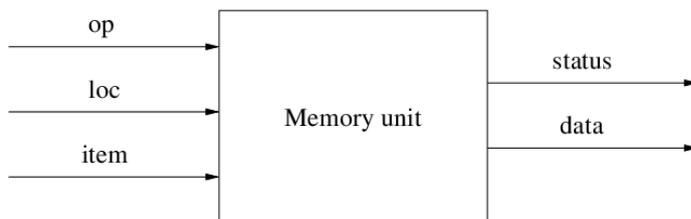
CENTRAL PROCESSING UNIT

An electronic circuit used in a computer that fetches the input instructions or commands from the memory unit ,performs arithmetic and logical operations , and stores this processed data back in memory .

A CPU or Central Processing Unit is the heart of a computer and is installed in a socket specified on a motherboard .Since a CPU performs a lot of calculations at a high speed ,it gets heated up quickly .To cool down the temperature of a CPU a cooling fan is installed on it.

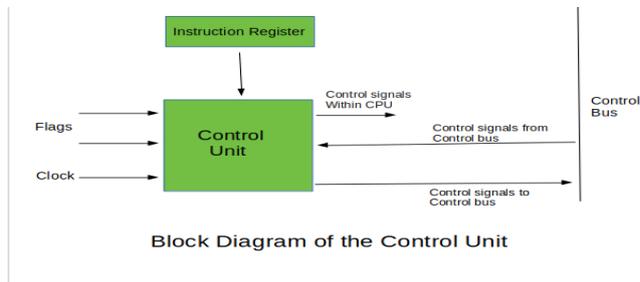
2) Memory Unit

The memory management unit (MMU) manages the data flow between the main memory (RAM) and the CPU . It also provides memory protection required in multitasking environments and conversion between virtual memory addresses and physical addresses .



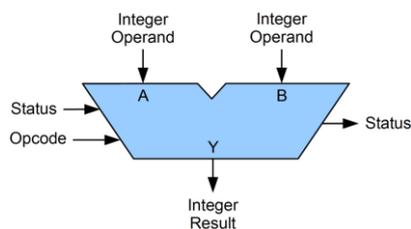
3) Control Unit

Control unit is the part of the computer's Central Processing Unit(CPU) which directs the operation of the processor .



4)Arithmetic and logical unit

It is a combinational digital circuit that performs arithmetic and bitwise operations on integer binary numbers. This is in contrast to floating point unit ,which operates on floating point numbers .



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

Ans : Based on size and capacity /computers are classified :

a) Micro Computers (Personal Computer)

It is the smallest general purpose processing system .The older picture started 8Bit Processor with the speed of 3.7MB and the current PC 64Bit processor with the speed of 4.66GB .

>Micro can be classified into 2 types

- 1) Desktops
- 2) portables

b) Mini Computer

A Minicomputer is a medium -sized computer . That is more powerful than a microcomputer .

These computers are usually designed to serve multiple users simultaneously . They are more expensive than minicomputers . Example : Digital Alpha ,Sun Ultra .

- c) Mainframe computer : Computer with large storage capacities and very high speed of processing (Compared to mini or microcomputers) are known as mainframe computer . They support a large number of terminals for simultaneous us by a number od users like ATM transaction .They are also used as central host computers in distributed data processing system . Example: IBM 370,S/390.

d) SUPERCOMPUTER:

They have extremely large storage capacity and computing speeds which are many times faster than others computers . A supercomputer is measured in terms of millions of instruction per second (Mips) ,an operation is made up of numerous instructions . The supercomputers is mainly used for large scale numerical problems in scientific and engineering disciplines such as weather analysis . Example : IBM Deep Blue

Q 3. What is the meaning of computer generation ? How many computer generation are defined ? What technologies were /are used ?

ANS: Generation in computer terminology is a change in technology computer is /was being used. Initially ,the generation term was used to distinguish between varying hardware technologies . Nowadays ,generation includes both hardware and software , which entire make up an entire computer system .

There are 5 (five) computer generations .

Computer generations are based on when major technological changes in computers occurred ,like the use of vacuum tubes ,transistors, and the microprocessor .

Q 4. Differentiate between Volatile and Non Volatile ?

ANS: In a volatile memory , the process can both read and write . It means that the process would have direct access to the data and information within it .

In a non volatile memory , the processor can only read .It means that the processor wont have direct access to the data and the information within.

Q5. Distinguish among system software ,application software and open source software on the basis of their features ?

ANS: System Software :

- It is a type of software that is designed to run a computer's hardware and application programs .
- Software like operating systems, compilers, editors and drivers etc, come under this category .
- A Computer cannot function without the presence of system software .

If we think of the computer system as a layered model , the system software is the interface between the hardware and user applications .

• Application software:

- These programs analyse and maintain a computer .
- These programs are focused on how operating system works to perform

the task to enable the smooth functioning of computer .

- Open source software (OSS)
 - It's a type of computer software in which source code is released under a license in which the copyright holder grants users rights to study , change and distribute the software to anyone and for any purpose .

Q6. 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 : Step 1: Open MS WORD .

Step 2: Click on New file .

Step 3: A new blank document appears in word window .

Now ,you can create document by inserting text .

Step 4: Click Microsoft office button / File tab .

Step 5: Select Save As – Word document .

Step 6: Select the location where you want to save the document using the drop down menu .

Step 7: Enter the name of the document as YOURSELF .Click the save button .

B) Write steps regarding the following :

1. To change the font style :
2. Select the text you want to modify.
3. Click on font style box on Home tab .
4. The font style drop down menu appears.
5. Move your cursor to the font styles .
6. Left click the font styles.
7. Font style will change in the document .

C) To change the font size :

1. Select the text you want to modify.
2. Click on font size group on home tab.
3. Left click the font size.

D) To change font colour :

1. Select the font you want to modify.
2. Click on the font colour group on the home tab .
3. left click on the font .

E) To highlight (in yellow) the line that reads " need to get IM'S address " .

1. Select the text.
2. Click on text highlight colour on the font group.
3. Click on the colour you want to use .

Q7. Create a file in MS word for the following and save it with the file name 'ms word' .

Describe all steps involved in it .

MS word

MS word is widely used commercial processor developed by Microsoft .

MS word is application software ,which is capable of

- Saving
- Printing Creating
- Editing
- Saving and
- Printing any type of document .

Opening MS word :

- Click the start icon .
- All programs
- Click Microsoft office
- Click Microsoft word

Creating a new document :

- Click Microsoft office button \ File tab.
- Select New.
- Select Blank Document .
- Now you can create document by inserting the text .

MS word is widely used commercial processor developed by Microsoft .

MS word is application software ,which is capable of

- Creating
- Editing
- Saving and
- Printing any type of document

- Finally save document as ' MS word " .
- Click on save document .

Q8. Create a file in Ms word for the following document and save it with the file name ; Equations' . Describe all steps involved in it .

EQUATIONS

$$X^2 + Y_5 = 30$$

$$Z^3 + Q^4 = 50$$

$$A^2 + B^8 = X_2 + Y^8$$

Opening Ms word

- Click on start icon
- All programs
- Click Microsoft office
- Click Microsoft word

Creating a new document :

- Click the Microsoft office \file tab .
- Select New .
- Blank document will be highlighted .
- A new blank document appears in word window .
- Now you can create document by inserting text.

EQUATIONS

- $X^2 + Y_5 = 30$
- $Z^3 + Q^4 = 50$
- $A^2 + B^8 = X_2 + Y^8$

Finally Save document with file name 'Equations' .

- Click Save document on Quick Access Toolbar .

Q9. Create a file in MS word that convert existing highlight text to table as shown below and save it as file name 'text- to – table' . Describe all steps involved in it .

Select the text you want to convert .

Select the insert tab.

Click on Table command . A Dialog box appears

Here set numbers of columns .

Click on OK . Finally Selected text convert in a table .

ANS : To convert existing text to a table :

Select the text ' Select the text you want to convert .

Select the insert tab.

Click on Table command . A Dialog box appears

Here set numbers of columns .

Click on OK . Finally Selected text convert in a table .

- `Select the insert tab.
- Click on Table command . A dialog box appears .
- Set number of columns
- Save file name as ' text – to – table' .
- Click on OK.
- Finally selected text convert in a table .

Q 10. Create a file in MS word to insert a table in the following document .Describe all steps involved in it .

ANS: Opening MS word

- Click the start icon .
- All programs.
- Click Microsoft office .
- Microsoft word.

To convert existing text to a table

- Select the text you want to convert
- Select the insert tab
- Click on table command
- Click on convert text to table .
- Set number of columns
- Click on OK

Q12. Calculate the following things of a range (C2: C11)of data in the worksheet created in question 10.

- The sum of the marks using Auto sum in a range of cells (C2: C11) is **654**.
- Average of the marks in a range of cells (C2:C11) is **65.4**
- Highest marks in a range of cells (C2:C11) **90**.
- Minimum marks in a range of cells (C2: C11) **40**

Q13 . Describe various steps involved in the following .

ANS : To modify column width of a worksheet .

- Select column you want to change .
- On home tab ,in the cells group, click format .
- Under cell size, click column width.
- In the column width box , type the value that you want .
- Click OK.

To modify the row height of a worksheet

- Position the cursor over the row line you want to modify ,and a double arrow will appear.
- Left click the mouse ,then drag the cursor upward to decrease and increase the row height.
- Release the mouse button .

To delete rows and columns

- Select the row or column you want to delete.
- Click the delete command in the cells group in the Home tab.
- Select row or column deleted.

B) Describe following terms in the worksheet .

> Absolute reference and relative reference in formula .

* Relative reference: Cell reference in formula automatically adjust to new locations when the formula is pasted in to different cells .This is called relative reference .

* Sometimes when you copy and paste a formula you don't want one or more cell refernce to change.

* An absolute reference solves this problem .

* Cell references in a formula always refer to the small cell or all range .

If a formula is copied to a different location, the absolute reference remains the same.

- Cell address

You can use the ADDRESS function to obtain the address of a cell in a worksheet ,given specified row and column numbers. For example , ADDRESS (C& 2) .

Q14. What tools are available to customize our PowerPoint presentation ?

ANS: * Templates and themes

- Slide layouts
- Fonts
- Colour themes

Q15 Write steps for creation of a set of PowerPoint slides that demonstrates your skills to use the tools of PowerPoint .It should include the following things .

- Title slide & Bullet list

- A) Click Home
- B) Select New slide
- C) Click Title Slide

Bullet list

- A) Select text
- B) Select Bullet

Inserting Excel sheet

- A) Click insert tab
- B) Click Table
- C) Select Excel Spreadsheet

Clip art and text

- A) Press Alt + Q
- B) Type clip art
- C) Select any clip art
- D) Insert

Slide show effects

- A) Select transition tab
- B) Select any effects from the list

PART 2

Q16. What is the difference between Machine language and High Level Language ?

ANS: Machine language

This is what the computer actually sees and deals with . Every command the computer sees is given as a number or sequence of numbers .

High – level Language

They are there to make programming easier . Assembly language requires you to work with the machine itself .

High level language allow you to describe the program in a more natural language . A single command in a high level language usually is equivalent to several commands in an assembly language .

Q17. Discuss about different data types of C programming language .

ANS : * CHAR : The most basic data type in C . It stores a single character and requires a single byte of memory in almost all compilers .

- Int : As the name suggests , an int variable is used to store an integer .
- Float : It is used to store decimal numbers (numbers with floating point value) .
- Double : It is used to store decimal numbers (numbers with floating point value but its range of values is high in comparison float) .

Q18 . Find the output of the following expressions

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

$x = 33$

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

$Y = 30$

c) $Z = 40*2/10-2+10$

$Z = 18$

Q19. Describe the syntax of the following statements .

a) If -else statement

ANS : If else statement will execute a block of code if a specified condition is true .

b) For loop

ANS: For loop is used to iterate the statements or a part of the program several times .

c) While loop

ANS: Repeatedly executes a target statement as long as given condition is true .

d) Do -while loop

ANS: Do while loop executes atleast once i.e. the first iteration runs without checking the condition .The condition is checked only after the first iteration has been executed .

Q20. Find the output of the following program segments .

Q20. Find the output of the following program segments

a)	b)	c)
<pre>#include <stdio.h> int main() { int i; for (i=1; i<2; i++) { printf("IMS Ghaziabad\n"); } }</pre>	<pre>#include <stdio.h> int main() { int i = 1; while (i <= 2) { printf("IMS Ghaziabad\n"); i = i + 1; } }</pre>	<pre>#include <stdio.h> void main() { int a = 10, b=100; if(a > b) printf("Largest number is %d\n", a); else printf("Largest number is %d\n", b); }</pre>

- A) IMS Ghaziabad
- B) IMS Ghaziabad
IMS Ghaziabad
- C) Largest number is 100

