ASSIGNMENT

Course: Certificate in Computer Application

Course Code: CCA-101

Topic: Fundamentals & IT communication

Centre: Unify CSC Academy, Demthring, Shillong

Submitted By: Miss Miatzelon Soh

Assignment - 1

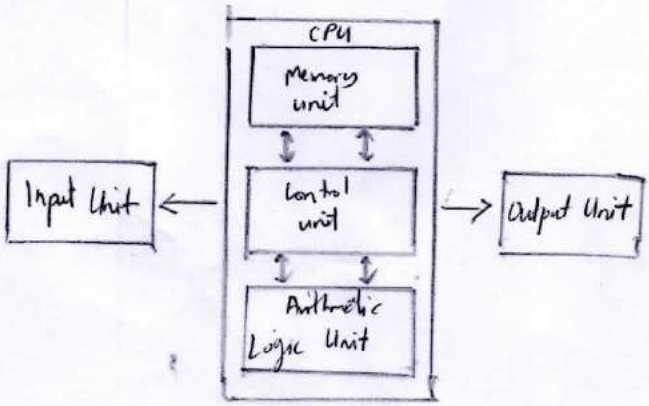
Q1: What are the four fundamental parts of computer? Explain it with the help of diagram.

Ans: The four fundamental parts of computer are:-

① Central Processing Unit (CPU): The CPU is the brain of a computer. Its main function is to execute programs. The CPU also controls the operation of all the other components of such as memory, input and output devices.

The CPU consists of three units:

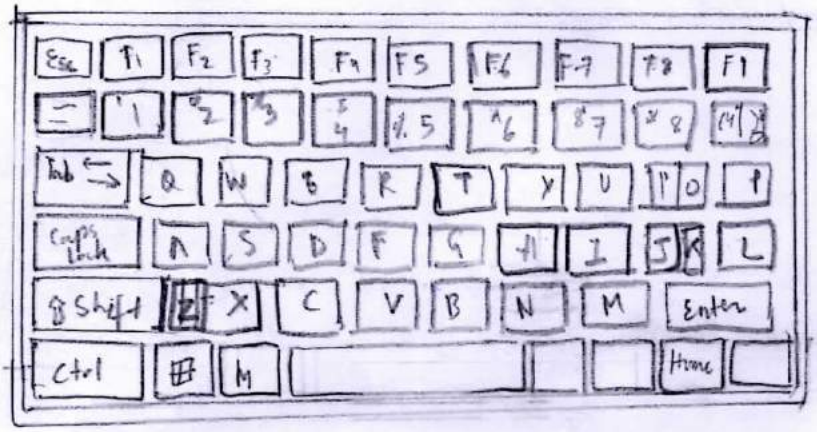
1. Control Unit (CU): Controls the functions of all the components of the computer.
2. Arithmetic and Logic Unit (ALU): Performs Arithmetic and Logical operations.
3. Memory Unit (Registers): Stores the intermediate results after processing data before finally releasing them to the output unit.



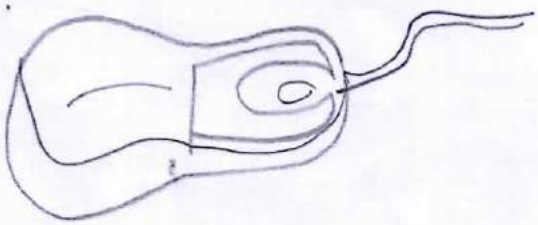
② Keyboard : The keyboard is an input device that looks similar to a typewriter. It is used to feed data and instructions into the computer.

The keys of the keyboard can be classified as follows:

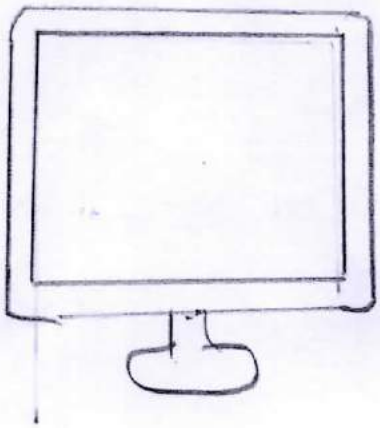
1. Alphabetic Keys.
2. Function Keys
3. Numeric Keys.
4. Symbol Keys
5. Arrow Keys
6. Special Keys.



③ Mouse : The mouse is a pointing device, which is used for issuing commands, selecting objects, draw pictures, etc. in a Graphical User Interface (GUI) system. It is a flat-box-like object which has two or more buttons at the top and a roller underneath that moves a pointer on the screen as the mouse is rolled on a flat surface. Clicking with any one of the buttons perform different actions. The default button is the left button.



④ Monitor : A computer monitor is an output device that displa-ys information in pictorial or text form. A monitor usually comprises a visual display, some circuitry, a casing, and a power supply. The display device in modern monitors is typically a thin film transistor liquid crystal display (TFT-LCD) with LED backlighting having replaced cold-cathode fluorescent lamp (CCFL) backlighting. Previous monitors used a cathode ray tuble (CRT) and some Plasma displays.



Q.2. Discuss about the classification of computers based on size and capacity.

Ans: The classification of computers based on size and capacity are as follows :-

1. Microcomputers : A microcomputer is a small low cost computer with a single silicon chip processor. Its processing unit (CPU) is called microprocessor. All the components of a microprocessor are on a single integrated circuit chip.

Personal computers that you see in school, home and office are all microcomputers. The personal computers are small in size compared to other computers like mainframe computers and supercomputers. Desktop, laptop, and palmtop are microcomputers.

2. Minicomputer : A minicomputer is a digital computer, whose process and storage capacity is less than that of a mainframe computer and greater than that of a microcomputer. It is a multiuser system, where many users work on the same system. It was developed to replace mainframe computers, as mainframe computers occupy too much space. Due to their efficient processor, speed and memory size, minicomputers are used in business applications and scientific applications. Mini-computers are also known as Mid-Range computers.

3. Mainframe computer : A mainframe computer is an ultra-high performance computer. It is large, expensive and occupies more space. Its memory capacity is measured in megabytes, and storage capacity is calculated in terabytes. It can store huge amount of data and can perform very complex calculations. It is used in research organisations, large industries, airline reservations, and any place where a large database has to be maintained.

4. Supercomputer : A supercomputer is the fastest known computer. The parallel processing of supercomputer is very fast because it comprises of a number of CPU that operate parallelly. The memory

capacity of a super computer is in gigabytes or in terabytes. The storage capacity is in petabytes. Its processing speed lies in the range of 400-10000 millions of floating point operations per sec. Supercomputers are used in weapon research, weather forecast, nuclear research, rocket research, atomic research and aerodynamics.

Q3. What is the meaning of computer generation? How many Computer Generations are defined? What technologies were/are used?

Ans: Generation in computer terminology is a change in technology a 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 together make up an entire computer system.

There are five computer generations known till date:-

1. First Generation (1946 - 1959)
2. Second Generation (1959 - 1965)
3. Third Generation (1965 - 1971)
4. Fourth Generation (1971 - 1980)
5. The Fifth Generation (1980 - onwards)

First Generation

In the late 1940s and early 1950s (EDSAC, UNIVAC 1, etc.) computers used vacuum tubes for their digital logic and liquid mercury memories for storage. See early memory, EDSAC & UNIVAC I.

Second Generation

In the late 1950s, transistors replaced tubes and used magnetic cores for memories (IBM 1401, Honeywell 800). Size was reduced and reliability was significantly improved.

Third Generation

In the mid-1960s, computers used the first integrated circuits (IBM 360, CDC 6400) and the first operating systems and database management systems. Although most processing was still batch oriented using punch cards and magnetic tapes, online systems were being developed. This was the era of mainframes and minicomputers, essentially large centralized computers and small departmental computers. See punch card, System/360 and Control Data.

Fourth Generation

The mid- to late-1970s spawned the microprocessor and personal computer, introducing distributed processing and office automation. Word processing, query languages, report writers and spreadsheets put large numbers of people in touch with the computer for the first time. See query language and report writer.

Fifth Generation - The Future

The 21st century ushered in the fifth generation, which increasingly delivers various forms of artificial intelligence (AI).

Q4. Differentiate between Volatile & Non-Volatile memories.

Ans:

	Volatile Memory	Non-volatile Memory
1.	Data or information is lost when the electric power supply is stopped.	Data or information is not lost when the electric power supply is stopped.
2.	Follows temporary data storage	Follows permanent data storage.
3.	Data is transferred easily in this type of memory	Data transfer is not so easy.
4.	Speed is comparatively faster than non-volatile memory	Speed is comparatively slower than volatile memory.
5.	It has an impact on system performance.	It does not have an impact on system performance.
6.	It has a primary type of storage.	It has a secondary type of storage.
7.	It can be used for the ~~write~~ ~~write~~ read-write purpose.	It can be used for the only-write purpose.
8.	It contains less storage capacity	It contains more storage capacity.
9.	Volatile memory is less cost-efficient. (costly)	Non-volatile memory is more cost-efficient (less costly)
10.	Example: RAM is the basic example of Volatile memory.	Example: ROM is the basic example of Non-Volatile memory.

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

Ans:

System software:

The system software is a ~~collection~~ ~~ope~~ type of computer program that is designed to run a computer's hardware and application programs. It acts as an interface between the hardware and user applications. The operating system is the best known example of system software. The OS manages all the other programs in a computer.

System software is used to manage the computer itself. It runs in the background, maintaining the computer's basic functions so users can run higher-level application software to perform certain tasks.

Important features of system software:-

- High speed.
- Hard to manipulate.
- Written in a low-level computer language.
- Close to the system.
- Versatile.

Application Software:

An application software 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 software are

examples. The collective noun refers to all applications collectively.

Features of Application Software:

- Perform more specialized tasks like word processing, spreadsheets, email, photo editing, etc.
- It needs more storage space as it is bigger in size.
- Easy to design and more interactive for the user.
- Generally written in a high-level language.

Open-source software:

Open-source software is a computer software 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 source code to anyone and for any purpose. Open-source software may be developed in a collaborative public manner.

Features of open source software:

- Lesser hardware costs.
- High-quality software.
- Simple license management.
- Lower software costs.
- Abundant support.
- Scaling and consolidating.
- Integrated management.

Q.6 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: To create a file in MS-Word:

1. Click on Start icon and click All Apps.
2. Clikek M.S Word
3. Then keep the cursor on the insertion fide line.
4. Then type yourself in the work area.
5. Click the file tab to create file.
6. Click Save As and type file text box as file name "Yourself"
7. Click Save.

Q.6 b) Write steps regarding followings:

> To change the font style.

Ans:
1. Select the text you want to modify.
2. Select the Home tab and locate the Font group.
3. Click the drop-down arrow next to font style box.
4. Font style menu appears.
5. With a left click select the desried font style.
6. If you want to change the font to bold or italic, click the 'B' or 'I' icons on the format bar.

> To change the font size.

Ans: 1. Select the text that you want to modify.
2. In Home tab locate the Font group.
3. In Font group click the drop-down arrow next to font size box.
4. Font size menu appears.
5. Select the desired font size with a left click.
6. Select the text and click the increase or decrease font size buttons.

> To change the font color.

Ans: 1. Select the text you want to modify.
2. In Home tab locate the Font group.
3. Click the drop-down arrow next to Font color button.
4. Font color menu appears.
5. Select the desired font color with a left click.
6. Word will change the Font color of the selected text.

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

Ans: 1. Select the line that reads "need to get IMS's address"
2. Go to Home tab locate the Font group.
3. Click the small highlight box and select the highlight yellow ~~colours~~ color.

Q8. Q7. Create a file in MS-Word for the following document and save it with file name 'ms_word'. Describe all steps involved in it.

Ans: Step 1: Type the document in the work area.

Step 2: Select the MS Word text and go to Home tab and click Bold.

Step 3: Select the paragraph and choose the font size and font style by clicking from the Font tab.

Step 4: We click on the bullets tab and we chose the bullet font.

Step 5: Click on the File tab and select Save As then save the file name as ~~MS-W~~ 'ms-word'.

Q 8. Create a file in MS-word for the following document and save it with file name 'equations'. Describe all steps involved in it

Ans: Step 1: We open the MS-Word Document.

Step 2: We click with the cursor in the insertion line.

Step 3: We type the name of the file equations.

Step 4: We select the text (equations)

Step 5: We change the font into a sentence case.

Step 6: We choose the text "equations and choose underline

font.

Step 7 : We click insert tab and choose equation option and choose insert ~~menu~~ new equation click on insert option and write down the required variables $x_2 + y_5 = 30$

Step 8 : (choose) open file tab choose Save as dialog box appeared and file name equations by default appears.

Step 9 : We click Save.

Q 9. Create a file in MS-word that ~~con~~ convert existing highlight text to table as shown below and save it as file name 'text_to_table'. Describe all steps involved in it.

Ans: Step 1 : We open a MS-Office Word document.

Step 2 : We insert the cursor in the insertion line and we type the following text (select the text ...)

Step 3 : Select the text we want to convert.

Step 4 : Select the Insert tab, click on the table command a dialog box appears.

Step 5 : Click on the convert text on table a new dialog box appears, then set a number of columns we required

Step 6 : Click on OK and finally it is converted into a table.

Q10. Create a file in MS-Word to insert a table in the document. Describe all steps involved in it.

Ans: Step 1: Open a blank Word document

Step 2: In the top ribbon, press Insert

Step 3: Click on the Table button.

Step 4: Either use the diagram to select the number of columns and rows you need, or click Insert Table and a dialog box will appear where you can specify the number of columns and rows.

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

Q11. Create a following worksheet in MS-excel and save it with name 'book 1'.

Ans: Step 1: Click on Start button, choose All Programs. Click on MS-Office and choose MS-Excel.

Step 2: A spreadsheet appeared, and we click on the cell where we want to start assignment.

Step 3: We click on the cell address A, and type Roll number.

Step 4: With the help of tab key / Arrow key from the keyboard. We

move to the next all B, and C, then we type names, marks respe representively.

Step 5: We then fill the following names and marks required.

Step 6: From the overall bar we select the sheet 1 and right click a dialog box appeared and we choose 'Rename' and then type the sheet name 'student'.

Step 7: Go to fill tab choose save as a dialog box appears with a file name Book 1 by default and click here Save.

Q 12. Calculate the following things of a range (C2 : C11) of data in the worksheet created in question no 10.

Ans:- > ~~the sum of the marks using~~ AutoSum in a range of cells (C2:C11)

Step 1: Click on Start Button, choose All Programs. Click on MS-Office and choose MS-Excel.

Step 2: A spreadsheet appeared, and we click on the cell where we want to start the assignment.

Step 3: From call address (C2:C11) we filled the require marks of the students.

Step 4: So on C12 we will be calculating the sum of the marks of the students using auto sum.

Step 5: Choose C12 and type an Input = Sign go on to the formula tab and choose / click auto sum then automatically choose the required range (C2:11) just press enter then result will be shoken.

> average of the marks in a range of cells (C2:C11)

Ans:- Step 1: Click on cell C13.

Step 2: Type an input = sign and type Average.

Step 3: Open the bracket and select the range of the cells C2:C11 and close the bracket.

Step 4: Press Enter. Then result to will be shown.

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

Ans:- Step 1: Click on cell C14

Step 2: Type and input = sign and type ~~t~~ maximum.

Step 3: Open the bracket and select the range of the cells C2:C11 and close the bracket.

Step 4: Press Enter. Then result will be shown.

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

Ans: Step 1: Click on cell 15.

Step 2: Type ~~and~~ ~~I~~ and input = sign and type minimum.

Step 3: Open the bracket and select the range of the cells C2:C11 and close the bracket.

Step 4: Press Enter. Then result will be shown.

Q 13

a) Describe various steps involved in the following.

> To modify column width of a worksheet.

Step 1: Select the text we want to format.

Step 2: Go/Click to Home Tab we choose font format.

Step 3 : Select on Column Width.

Step 4 : Write the number size we want to format.

Step 5 : Then a call will be formatted.

> To modify the row height of a worksheet

Ans

Step 1 : Select the text we want to format.

Step 2 : Click the Home Tab and choose font format.

Step 3 : Select on row height

Step 4 : Write the numbers size we want to format.

Step 5 : Then a cell will be formatted.

> To delete rows and columns of a worksheet

Ans:

Step 1 : Select the sheet we want to delete.

Step 2 : Click the Home tab.

Step 3 : Choose the Delete tab.

Step 4 : Then click on Delete the delete sheet Rows and columns.

Step 5 : Then the delete sheet rows and columns will be deleted.

Q13

b) Describe Following terms in the worksheet.

> Absolute reference and relative reference in formula.

Ans: An absolute reference in Excel refers to a reference that is locked so that rows and columns remain constant no matter where they are copied.

Relative Reference : An address or pointer that changes when the target items is moved in the relationship to it has changed, a cell with a relative reference changes its formula when copied elsewhere.

> Cell address

Ans: Cell address is a combination of a column letter and a row number that identifies a cell on a worksheet. for e.g., A1 refers to the cell at the insertion of column A and row 1; B_2 refers to the 2nd cell in column B and so on.

Q 14 a) What tools are available to customize our Power Point presentation?

Ans: The tools that are available to customize our Power Point Presentation are: Table, chart, smart Art Graphic, Pictures from file, Clip Art, Media Clip.

Q 14. b) Write the steps for the following action for creation of power point presentation

> Open a Blank presentation

Ans: Step 1: Click on Start button / All apps.

Step 2: Then click on MS-Powerpoint

Step 3: Click new slide and a new blank Presentation will open.

14b) > Save the presentation as Lab 1. pptx

Ans: Step 1 : Go to file tab and click.

Step 2 : Save as a dialog box appear with the file name ~~label~~ Lab 1. by default and click Save.

> Add a Title to the first slide : the name of your college.

Ans: Step 1 : We go to Home tab.

Step 2 : Click on New slide and choose title slide.

Step 3 : We type the title of college UNIFY CSC.

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

Ans: We type in the subtitle section as

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> Add a New Slide which has a Title and Content

Ans: Step 1 : Click on the File button

Step 2 : Choose New, a dialog ~~do~~ box appear with the name 'New Presentation'

Step 3 : We choose a blank presentation and we click New.

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

> Title slide & bullet list

Ans: Step 1: Click on the ~~File~~ New slide from the Home tab.
Step 2: Select the Title slide from the office theme.
Step 3: Select from the Home tab, we select the bullet and numbering tab and we choose our required bullet.

> Inserting Excel sheet

Ans: Step 1: We select from the Title and Content slide.
Step 2: Select the insert chart embedded on the content.

> Clip art and Text

Ans: Step 1: We select from the Title and Content Slide.
Step 2: Select the insert chart embedded on the content.

> Slide show effects

Ans: Step 1: We click on the slide show tab.
Step 2: We click on the Design tab and we choose Effect styles. from the Built-In dialog tab.

Part - 2

Q 16 What is the difference between Machine Language and High Level Language ?

Ans :-

Machine Language	High Level Language
• It is considered as a machine - friendly language	• It can be considered as a programmer - friendly language.
• It requires an assembler that would translate instructions.	• It requires a compiler / interpreter to be translated into machine code.
• It is not portable.	• It can be ported from one location to another.
• It is difficult to understand	• It is easy to understand.
• It is difficult to debug.	• It is easy to debug.
• It consumes less memory	• It is less memory efficient. i.e. it consumes more memory in comparison to Low - level languages.

Q 17. Discuss about the different data types of C programming Language.

Ans :- The different data types of C programming Language are :-

1. Basic types :- They are arithmetic types and are further classified into
   (i) integer types and (ii) floating point types.
2. Enumerated types
   They are again arithmetic types and they are used to define variables that can only assign certain discrete integer values throughout the program.

3. The type void

The type specifier void indicates that no value is available.

4. Derived types

They include (a) Pointer types, (b) Array types, (c) Structure types, (d) Union types and (e) Function types.

Q18. Find the output of the following expressions

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

Ans:

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

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

$$x = 8 + 30 - 5$$

$$x = 38 - 5$$

$$x = 33$$

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

Ans:

$$y = 30 - \left(\frac{40}{10} + 6\right) + 10$$

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

$$y = 30 - 4 + 16$$

$$y = 30 - 12$$

$$y = 10$$

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

According to BODMAS

$z = 40 \times 0.2 - 2 + 10$

$= 8 - 2 + 10$

$= 8 - 12$

$= -4$

Q 19. Describe the syntax of the following statements.

a) If - else statement

Ans:- Use if to specify a block of code to be executed, if a specified condition is true. Use else to specify a block of code to be executed, if the same condition is false. Use else if to specify a new condition to test, if the first condition is false.

---

b) for loop

Ans:- Syntax ~~for~~ of a For loop

The initialization statement describes the starting point of the loop, where the loop variable is initialized with a starting value. A loop variable or counter is simply a variable that controls the flow of the loop. The test expression is the condition until when the loop is repeated.

---

c) while loop

Syntax. Here, statement may be a single statement of a block of

statements. The condition may be any expression, and true is any nonzero value. The loop iterates while the condition is true.

d) do-while loop

The syntax for a do-while loop statement is: do loop-body-statement while (cond-exp); .cond-exp is an expression that is evaluated at the end of each pass through the loop. If the value of the expression is "false" (i.e, compares equal to zero) the loop is exited.

Q 20. Find the output of the following program segments

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

Ans :
```
[Running] cd "g:\C-programs)"
ss gcc aa.c -oaass "g;
\C-program\" aa IMS Ghaziabad
[Done] existed with code = 0 in 1.992 seconds.
```

b)
```
#include <stdio.h>
int main()
{
int i= 1;
while(i<=2)
{
printf("IMS Ghaziabad\n");
i=i+1;
}
}
```

Ans:→
```
[Running] cd "g:\c-Program\"
ss gcc a3.c-o a3 ss "g:) c
-Program)" a3
IMS Ghaziabad
IMS Ghaziabad
[Done] exited with code = 0 in 0.281 seconds
```

c)
```
#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);
}
```

```
[Running] ed "g:\" ss gc a4.c-o a4 ss "g:\" or
Largest number is 100
[Done] exited with code = 22 is 0.228 seconds.
```