

Assignment 1

CCA-101 fundamental of IT (programming)

Q1. what are the four fundamental parts of computer

Ans $\Rightarrow$ The Four fundamental part of computer

- i) Central processor unit (cpu)
- ii) memory (RAM) also known as volatile memory
- iii) Input (keyboard, mouse etc)
- iv) Output (monitor, printer etc)

Q2 $\Rightarrow$ Discuss about the classification of computer based on size of capacity.

Ans On the basis of Size there are 4 types of computer

- i) mini computer :- A mini computer is a medium sized computer more powerful than micro-computer. Example :- Digital Alpha, Sun ultra.
- ii) micro computer :- A micro Computer is the smaller general purpose processing system. Example :- Apple computer, PCs, notebook etc.

It is 2 types :-

- Desktops
- Portables.

(iii) Main frame computer :- computer with large storage capacities and very high speed of processing.
Example :- IBM 370, S1390

(iv) Super computer :- super computer have extremely large storage capacity and computing speeds which are many times faster than other computers.

Example :- IBM Deep Blue.

(Q3) What is the meaning of computer generation?
How many computer generations are defined?
What technologies were/are used?

Ans History of computer can be considered from cradle of human culture as person known as calculator.

Roman's abacus is first device used in B.C for calculation. The electronic numerical Integrator and calculator (ENIAC) first general purpose, digital electronic computer.



Generation of computer:-

- (i) First Generation (1945-1954) - It had been used vacuum tube technology make possible to do calculation.
- (ii) Second Generation (1955-1964) :- It had been used transistors which made a computer a little concise of faster to do the same.
- (iii) Third Generation (1965-1974) :- It had been used for integrated circuits. faster, comparatively and reliable as well.
- (iv) Fourth Generation (1975 till Date) - It had been used micro-processors inside to work for better comparatively.
- (v) Fifth Generation - (Present & next) computers are assigned Automatic intelligence.

Q4 → Differentiate between volatile non-volatile memories

Ans.	Volatile memory	non-volatile memory
(i)	Data is present till power supply is present	(i) Data remain even after power supply is not present
(ii)	Volatile memory data is not permanent	(ii) Is permanent
(iii)	Faster than non-volatile memory	(iii) memory Access is slower
(iv)	Data transfer is easy	(iv) Data transfer is difficult
(v)	Less storage capacity	(v) HDD has very high storage capacity.

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

Ans →	System software	Application software
(i)	maintain the system program and give the path for Appl software to run.	(i) It is built for specific tasks.
(ii)	Low level language are used to write	(ii) High level language are used to write.
(iii)	It is a general purpose software	(iii) Specific purpose software.

iv) Without system & software
System can't run.

Example :- ~~ppro~~ operating
system etc.

iv) while without Applica
Software system always
runs.

Example :- VLC player
photo shop etc.

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Q-61 what is the difference between machine Language
and high level language?

Ans Machine Language, or machine code, consists of
Binary code and is the only language that
is directly understood by the computer. Both
machine code and Assembly Language are
hardware specific.

A high level Language is a programming language
that uses English and mathematical symbols in
its instructions.

High level language such as swift and c++
must be compiled into machine Language
before the code is run on a computer.

Solutions

Solution 1

```
#include <stdio.h>
void main() {
    printf("In Dr. Sheelesh Kumar Sharma");
    printf("In IMS Ghaziabad");
}
```

Solution 2

```
#include <stdio.h>
void main() {
    int n1, n2, sum;
    printf("Enter two integer numbers:");
    scanf("%d %d", &n1, &n2);
    sum = n1 + n2;
    printf("Sum = %d", sum);
}
```

Solution 3

```
#include <stdio.h>
void main() {
    int x;
    x = 20 / (8 - 4) * 8 - 2;
    printf("x = %d", x);
}
```

Solution 4

```
#include <stdio.h>
void main() {
    int dividend, divisor, quotient, remainder;
    printf("Enter dividend: ");
    scanf("%d", &dividend);
    printf("Enter divisor: ");
    scanf("%d", &divisor);
    quotient = dividend / divisor;
    remainder = dividend % divisor;
    printf("Quotient = %d\n", quotient);
    printf("Remainder = %d", remainder);
}
```

Solution 5

```
#include <stdio.h>
void main() {
    int n1, n2, temp;
    n1 = 10;
    n2 = 20;
    temp = n1;
    n1 = n2;
    n2 = temp;
}
```

```
printf ("In After swapping, n1 number = %d", n1);  
printf ("In After swapping, n2 number = %d", n2);
```

Swap n

Swap numbers without using temporary variables

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

```
void main () {
```

```
    int n1, n2;
```

```
    n1 = 40;
```

```
    n2 = 10;
```

```
    // Swapping
```

```
    n1 = n1 - n2;
```

```
    n2 = n1 + n2;
```

```
    n1 = n2 - n1;
```

```
    printf ("In After swapping, n1 number = %d", n1);
```

```
    printf ("In After swapping, n2 number = %d",  
           n2); }
```

Solution 6.

```
#include <stdio.h>
void main() {
    int n1, n2, n3, largest;
    printf("Enter three different numbers: ");
    scanf("%d %d %d", &n1, &n2, &n3);
```

```
    if (n1 > n2)
        largest = n1;
    else
        largest = n2;
    if (n3 > largest)
        largest = n3;
    printf("Largest number is %d", largest); }
```

Solution 7

```
#include <stdio.h>
void main() {
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    if ((num % 2) == 0) {
        printf("Even number");
    }
```

Solution 8

```
#include <stdio.h>
void main() {
    int n, i;
    printf("Enter an integer:");
    scanf("%d", &n);
    for(i = 1; i <= 10; ++i) {
        printf("%d * %d = %d\n", n, i, n * i);
    }
}
```

Solution 9

The fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34

The fibonacci sequence is a sequence where the next term is the sum of the previous two terms.

The first two terms of the fibonacci sequence are 0 followed by 1.

```
#include <stdio.h>
void main() {
    int i, n, t1 = 0, t2 = 1, to next term;
    printf("Enter the number of terms:");
```

```
for (i=1; i<=n; ++i) {
    printf("%d", t1);
    nextTerm = t1+t2;
    t1 = t2;
    t2 = nextTerm;
}
}
```

Solution 10

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

```
void main() {
```

```
    int n, sum = 0, digit;
```

```
    printf("Enter an integer:");
```

```
    scanf("%d", &n);
```

```
    while (n != 0) {
```

```
        digit = n % 10;
```

```
        sum = sum + digit;
```

```
        n = n / 10;
```

```
    }
```

```
    printf("Sum of the digits = %d", sum);
```

```
}
```

Solution 11

```
#include <stdio.h>
void main() {
    int n, rev = 0, digit;
    printf("Enter an integer:");
    scanf("%d", &n);
    while (n != 0) {
        digit = n % 10;
        rev = rev * 10 + digit;
        n = n / 10;
    }
    printf("Reversed number = %d", rev);
}
```

Solution 12

```
#include <stdio.h>
void main() {
    int num, i;
    printf("Enter a positive integer:");
    scanf("%d", &num);
    printf("Factors of %d are:", num);
    for (i = 1; i <= num; ++i) {
        if (num % i == 0) {
            printf("%d ", i);
        }
    }
}
```