COMPUTER PROGRAMMING

WEEK 7

Topics

- Computer Programming

- The need of Programming

- Programming Languages

- Machine Language

- Low Level Languages
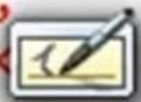
- High Level Languages

Computer Programming:

❑ Sequence of Instructions to perform task.

❑ Computer programming is a tool through which we can communicate with computers.

❑ Computer programming is the process of writing code to facilitate specific actions in a computer, application or software program, and instructs them on how to perform.

Example:

How to give Instructions to computer through programming language?

```cpp
#include<iostream>
using namespace std;

main()
{
int a, b, c;
a=2;
b=7;
c=a+b;
cout<<
}
```

Need of Programming:

- ❑ Computer programming is the most important aspect of modern life.

- ❑ It allows us to interact with computers in ways that were not possible before.

- ❑ It has enabled us to conduct research, design new products and services, manage our finances communicate with others around the world and many more.

- ❑ Used to design websites, create apps, develop operating system and control space crafts etc.

Programming Languages

❑ A programming Languages is a Vocabulary & set of grammatical rules for instructing a computer or computing device to perform a specific tasks.

❑ Programming languages usually refers to high level languages such as: BASIC,C,C++,COBOL,JAVA,FORTAN and PASCAL.

❑ Three types of programming languages:

1. Machine language

2. Low level languages

3. High level languages

Machine Language:

❑ A computer or machine only can understand it's Machine language which is defined by it's hardware architecture.

❑ Machine language is easier for computer to understand but harder for programmer.

❑ Machine language consist of 0 and 1 called bits.

❑ Directly executed by it's CPU.

Low-Level-Language

❑ Assembly language is slightly easier to understand.

❑ The bits of Machine language are replaced by numbers and English commands.

❑ Before assembly code is run by the computer, it is assembled by an assembler. This convert the code back into 0's and 1's of Machine language.
For Example: GO, JUMP, RUN etc.

High-Level-Language

❑ High level language use many more English commands & are significantly more readable than assembly or Machine language.

❑ High level language have many built-in commands.

❑ Some newer High level languages are scripting languages. This means that they are not compiled or translated into Machine language until just before the code is executed at runtime.

❑ Scripting languages are: PYTHON, JAVASCRIPT, PHP, RUBY etc.