

# PROGRAMMING LANGUAGES

## Syllabus

Machine Language, Assembly language, higher level languages. Introduction to C, PASCAL, ForTran, COBOL, BASIC language.

### Machine language

Every computer has its own language:

- Programs written in machine language are machine dependent and are good for those particular type of machines only.
- Machine language instructions are usually represented by binary, octal or hexadecimal number system.
- Disadvantage :
  1. It is very difficult to make any change to a program written in machine language.
  2. It varies from machine to machine.

### Assembly language

- In assembly language binary or octal or hexadecimal codes are replaced by symbols.
- Data-items are referred to by descriptive names ( such as Gross or Tax).
- Operations are specified in symbolic codes called ‘mnemonics’, instead of numeric operation codes.
- Machine cannot understand an assembly language program directly. First the assembly language program is translated into machine language by a program named ‘assembler’, and then machine can understand it.

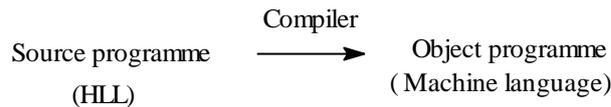
Disadvantages :

1. Assembly language is far from human languages ( the English or other languages) . So it is difficult for a programmer to program in assembly language.
2. It varies from machine to machine.

### Higher level language:

These languages allow the use of symbols and terminology that is familiar to human language.

- These are machine independent languages. Some programs executed in different machines with little or no alterations.
- The original program written in HLL is called ‘source program’. Source program is translated into ‘object program’. This object program is carried out by a program known as ‘compiler’. The method is known as ‘compilation’. Object program is a machine language program.



Machine language version	Assembly language version	Higher-level language-version
013737 000016 000022	GO: MOV B A	A =B+C
063737 000020 000022	ADD C A	
000000	HALT	
000100	B WORD 100	
000150	C WORD 150	
000000	A WORD 0	
	.END GO	

*Examples OF Programming language:*