

Chapter-1:

- What is Language?
- Types of Programming Languages
- Introduction to Translators
- Compiler
- Interpreter
- What is Scripting Language?
- Types of Scripting Languages
- Difference between programming language and scripting language
- What is programming paradigm?
- Procedural Oriented Programming Vs Object Oriented Programming

What is Language?

Language is a medium of communication between user and computer. A language provides set of instructions to communicate with computer to perform operations.

Source code: it is high level language, understand by the programmers
program: set of instructions executed by the computer.

programming language: set of instructions to perform specific tasks

What is program?

A program is set of instructions executed by computer.

These programs are written using programming languages.

Types of programming language

Programming languages are classified into 2 categories |

1. Low Level Programming Languages
2. High Level Programming Languages

Low Level Programming Languages

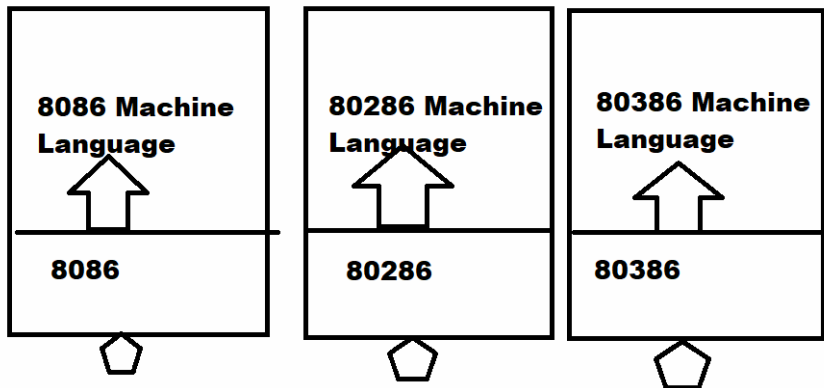
Computer understandable languages are called low level programming languages.

1. Machine Language
2. Assembly Language

Machine Language

Computer is an electronic device it understand only machine language. Machine language instructions are given in 0's and 1's. It is also called binary language.

Machine language is machine dependent or **hardware dependent** or non portable.



Machine language does not require any translator.

Assembly Language

Assembly language is low level language but instructions are not given in 0's and 1's. **Instructions are given using mnemonics.**

Machine Language

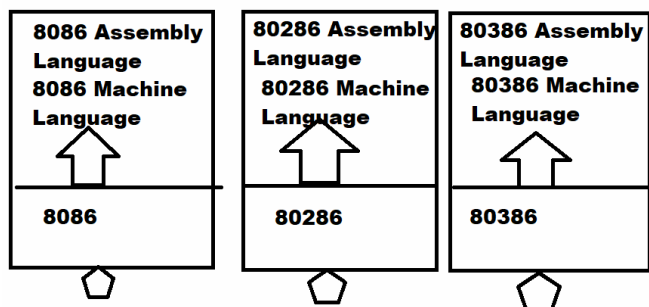
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Assembly Language

ADD
SUB
MOVE

write the 0's and 1's in ADD set one format like this method and use build the high-level language, in simple English.

Every machine having one assembly language is provided.



What is Assembler?

Assembler is translator used by assembly language to convert assembly language instructions into machine language or binary language.

What is translator?

Translator is software, which converts instructions of one language to another language.

Assembly language is a non portable language or hardware dependent.

High Level Language

All high level languages are in simple english.

All high level languages are portable or hardware independent. These languages can be used to write code/programs on any hardware architecture.

Example: C, C++,Java, Python, C#.Net,...

High level languages use 2 translators

1. Interpreter
2. Compiler

What is source program or code?

A program written in high level language is called source program. Source program understand by programmer.

What is interpreter?

Interpreter is a translator, which translates and executes instructions line by line.

Interpreter perform the following operations

1. Read
2. Tokenization
3. Syntax verification
4. Converting/translating
5. Executing

If there is a syntax error, interpreter stops translating and executing. Interpreter shows only one error.

What is compiler?

Compiler is a translator, which translate **whole program** and execute.

Compiler performs the following operations

1. Reading
2. Tokenization
3. Syntax
4. Translating
5. Storing (Memory/File)
6. Execute

Compiler shows all the errors occur within program.

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