

CHAPTER : 01 "BASIC CONCEPTS"

Compiler } High-level
Interpreter }

Assembler } Low-level language
translator }

The Assembler used on the behalf of Microsoft is called MASM (Microsoft Macro Assembler).

Some other well-known assembler under MS Windows include TASM (Turbo Assembler), NASM (Netwide Assembler) -

Two most popular linux-based assembler are GAS (GNU Assembler) and NASM. NASM's syntax is most similar to that of MASM.

Assembly Language is the oldest PL.

closest resembles to native machine language.

Require you to understand computer's architecture and operating system.

(1) NOTE

.exe files, Application files or Directly executable files
In LINUX, we cannot execute it directly. If you want to work on MASM and user of LINUX, then you have to install layer on LINUX called VINE

MASM (.exe) $\xrightarrow{\text{on}}$ LINUX
↓

Before this, install VINE package

(2)

If you need to be a C, C++ developer, you need to understand memory, address and instructions work at a low level.

Date: _____

Assemblers	Linkers	Debuggers
A utility program that converts source code program from Assembly to machine language.	A utility program that combines individual file created by an Assembler into single executable program	Utility program that let you to step through a program while its running & examines registers & memory.

First real-Address Mode OS for User was DOS-(Disk OS). in 1980. from Microsoft.

Nowadays, 16 Bit real address mode ~~run under~~ (DOS) is embedded in Microsoft Windows. can be accessed by CMD or command prompt.(CLI)

Op code. → Instructions written in Machine lang.
Mnemonics → Instruction written in Assembly lang.
such as; ADD, MOVE, SUB, CALL etc

Assembly lang. have one-to-one relationship with machine language.

However, High-level lang have one-to-many relationship with assembly language & Machine language.

Instruction	Statement
Single task is know as instruction -	Multiple instructions / task in single line or that statement.

Single-line comment
with ; in
Assembly language.

Date: _____

For multiplication, 2 variables are used.

i.e; mul → when data is unsigned

imul → when data is signed.