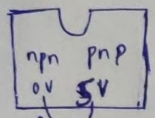
1. Fundamentals of Programming and Computer - 15/10/22

3 - technical discussion

CPU/MP (semi conductor technology device)



→ it understan 2 volts
0V & 5V

→ Transistor understand low & high voltages. 0 & 1's

0V	→ 0
5V	→ 1

→ Processor to Perform Addition, Sub, Mul

001001
101001
001001
} Instruction to perform operation. (Eg)

① Machine level language :-

→ writing Instructing in a form Machine understands (0's and 1's) → Machine level language.

→ Program :- So many Instruction is called as Program.

→ Processor understand 0's & 1's.

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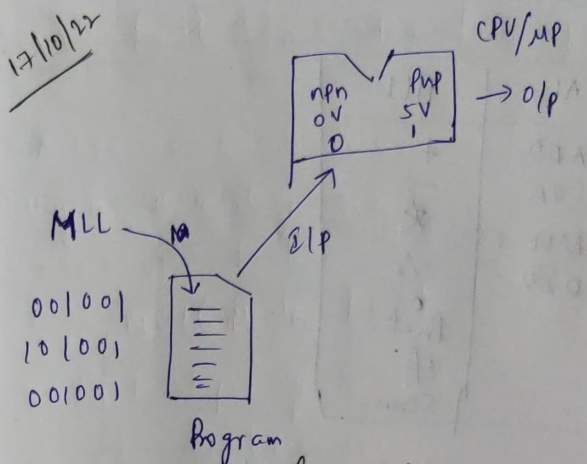
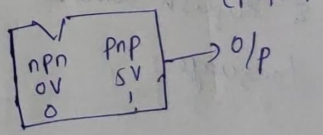


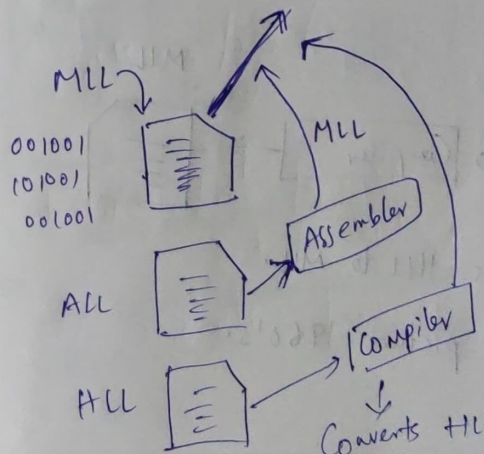
② Assembly level language :-

→ good Approach of giving Instruction. (mnemonics)

Eg
001001 ADD
101001 SUB
001001 DIV

→ Technically, we called as Assembly language.

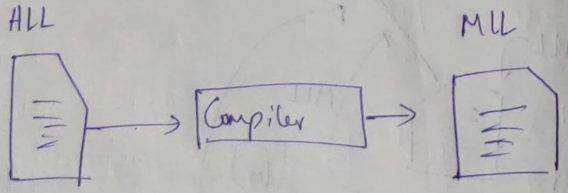




MLL	ALL	HLL
0000	ADD	+
0001	SUB	−
0010	MUL	*
0100	DIV	%
		Print
		if
		Scan.

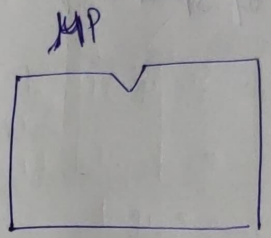
② Assembler :- System software. which Converts ALL to MLL
take ALL Converts into MLL

③ High level language :- writing instruction using Symbols & English like Commands. We Called as High level Language.

→ 

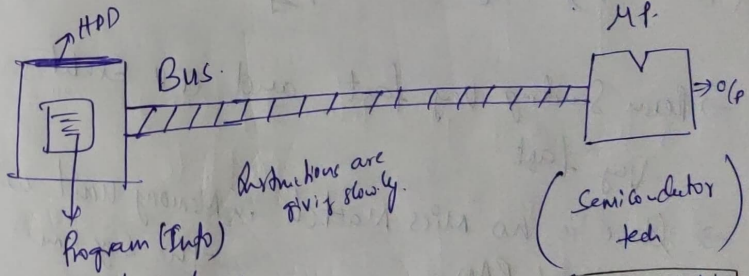
→ which Converts HLL to MLL.
→ Came into picture 1960's.

(i) Compiler :- is System Software which HLL to MLL.



(Semi Conductor device)

→ it understand 0's & 1's.
→ it is fast in nature.
→ responsible for Executing instructions.

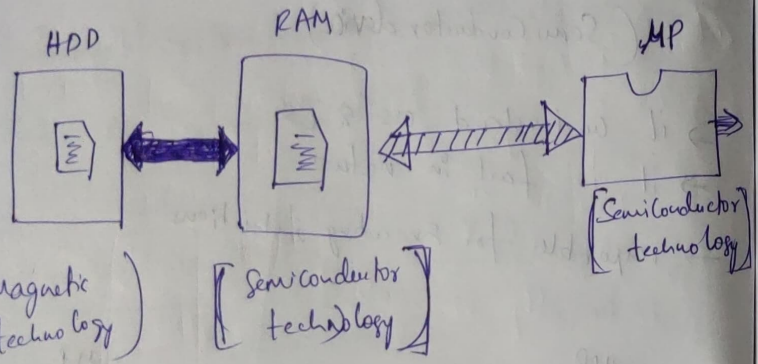


→ due to miss match in Speed b/w two devices their Entire Efficiency of System goes down.

① bus:- Set of wires which Carries set of instructions from one Memory unit to another or Memory unit

→ for avoiding mismatch of speed they introduced RAM

② RAM



→ Ram Sending very fast and CPU Executing very fast.

→ there is no Miss Match in Memory unit within the Systems.

Advantge of RAM:

→ RAM is fast & Compact

~~→ it is Volatile~~

dis advantage:-

① it is a Volatile device.

→ Continous power supply ~~should~~ have to be there.

→ for fraction ms power gone whole data get Erased.

③ Hard disk (HDD)

HDD disadvantge

↳ it is bulky.

↳ slow.

HDD advantge

→ it is non volatile.

→ Permanent storage.

⇒

→ again HDD Connected RAM.

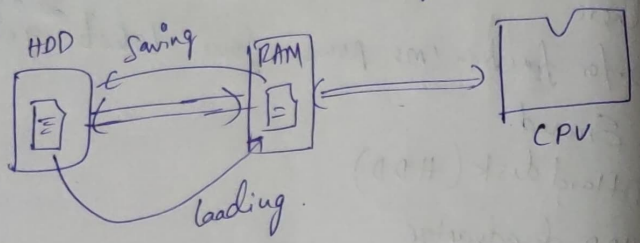
→ Processor is reponsible for executing info.

→ writing program on ram.

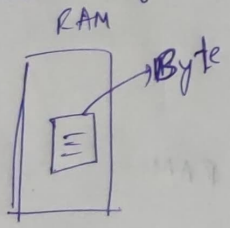
Saving: getting copy from RAM to HDD

To Save it permanantly is called Saving..

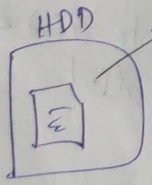
② Loading :- The process of getting program (or file) on to ram to take care of further Execution we called it as loading.



③ Byte :- the place where program stored on ram is called Byte.



④ File :- a The place where info (or) program stored on Hard disk is called file.



→ A storage placed on hard disk which stored permanently is called file.

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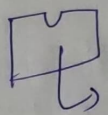
⑤ Register :- A storage placed on MP which is Executed is called Register



→ Ram also called primary Memory (or Main Memory.

⇒ HDD is called Secondary Memory.

⑥ Cache Memory :- faster than ram Memory.

→ Closer to ram
→ if instruction is given again & again
→ it stored at cache Memory.
→ it is Executed very fast next time by taking info from Cache Memory.

⑦ SSD :- Better version of HDD
↳ we Semi-Conductor technology.
↳ flash memory.
↳ you store data & when you want to load we can load it faster.

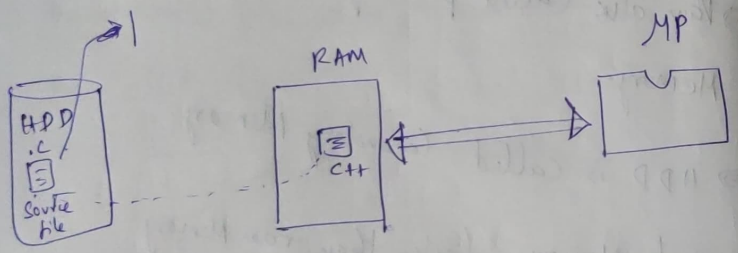
⑧ Object file Vs Executable files :- (.obj Vs .exe)

① **Object file**:- is a file in which code contains Machine level language (binary form).

→ object file incomplet file.

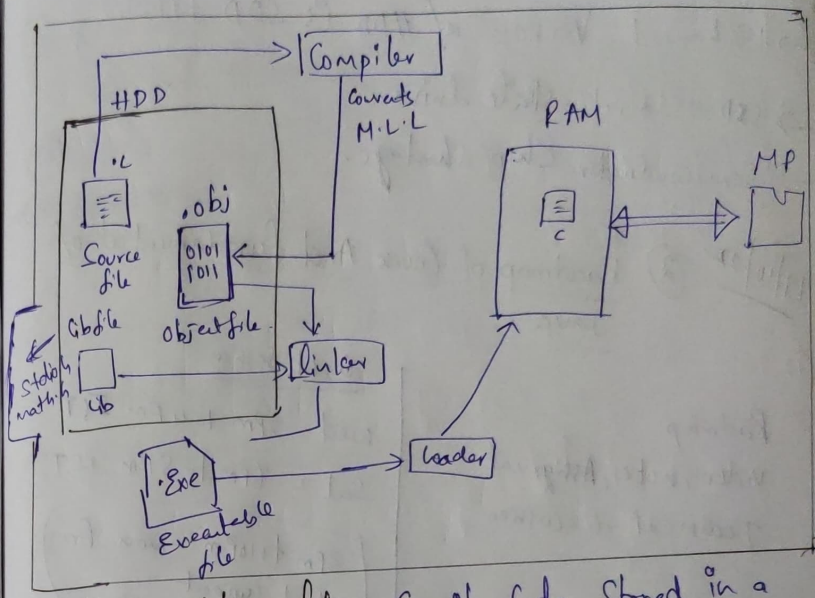
② **Executable file**:- is a file in which code contains in Machine level language.

→ it is Complete file.



① **Source file**:- Saved file which Contain our code.

Eg:- .C, Java, .PY.



② **Object file**:- Compile code stored in a file it is called **object file**.

→ for function body is not written in Code they are Connected by library.

③ **Linker**:- it links library file and object file & generate Executable file (.exe file).

④ **loader**:- loads into ram from HDD.

→ body of the functions present particular library.

→ Enhanced Version of HDD is SDD.

→ SSD → Solid-state drive.

→ Semiconductor Chip Shortage.

19/10/22 ② Raadmap of Course And fundamental of Java :-

Radmap
video, notes, Assignment
Technical discussion

Doubt Session
wed: 2pm to 4pm IST
Sat: 6pm to 8pm IST

3pm to 10pm Mon-Fri
Chat support

→ 3h x5 = 15h ⇒ 10+2 → waiting

1h → Practice.

→ Core-java ⇒ practice it on IDE

① Fundamentals (Basics)
② Git & Github 3 6h ⇒
③ fundamentals of Java
↳ loops, String, Array.
④ OOPs (Encapsulation, poly, inhe)
&
⑤ Exceptional handling. Etc.

Core Java → 1½ Month

Every week
Assignment-2
2 Assignments
Module-quiz

⑥ SQL → MySQL
No SQL, MongoDB.
↳ 1 week
⑦ JDBC → 3 days
~~⑧ JSP~~
→ HTML & CSS
↳ self Paced
⑧ JEE (Servelets & JSP)
↳ 2 week max / 1.5 Min
⑨ Javascript + React js
⑩ Spring Core
⑪ Spring Boot, JPA, REST
⑫ Docker, kubernetes.
⑬ Microservices.
AWS
⑭ Agile & Scrum
↳ 3 Projects.

Attend
① live Classes | Recording

19/10/22

Java

1990's 1980's

→ Bell labs (c & c++)
  ↳ before Java there P.L ruled
  ↳ now its TurboC

① Java introduced in 1991
  ↳ Sun Microsystem - Company.
    ↳ James hosting
    ↳ Standford university students.

→ Easy to understand.
→ Object oreinted
→ Portable / Platform
→ platform Independent

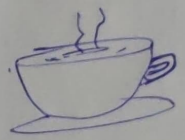
WORA

→ c & c++ programs are not portable and Platform dependent.

→ In 1995 → Program is ready
  ↳ Alpha & Beta Version
  ↳ free down loadable
  ↳ open source → any one can contribute
  ↳ James hosting.

→ 1996 → they released Java 1.0 → oak.
  ↳ It is platform Independent and Portable.
  ↳ it is architecture neutral. (on Internet Programming Language
  ↳ object oriented

→ Naming this programming Language
  ↳ oak, Green team, [redacted]
    ↳ Member Alphabet [redacted]
  ↳ [redacted]
    ↳ Coffee planter island located in Indonesia. → Java



→ In 2011 → oracle acquired Sun microsystem.

→ Java ⇒ 1995 - [redacted] ⇒
  Java 1.0 ⇒ 1996.

→ it is object oriented.
  Platform Independent
  (on
  Portable
  (on
  WORA

→ Internet Programming Language.