JAVA   :1995, sun Microsoft launch.
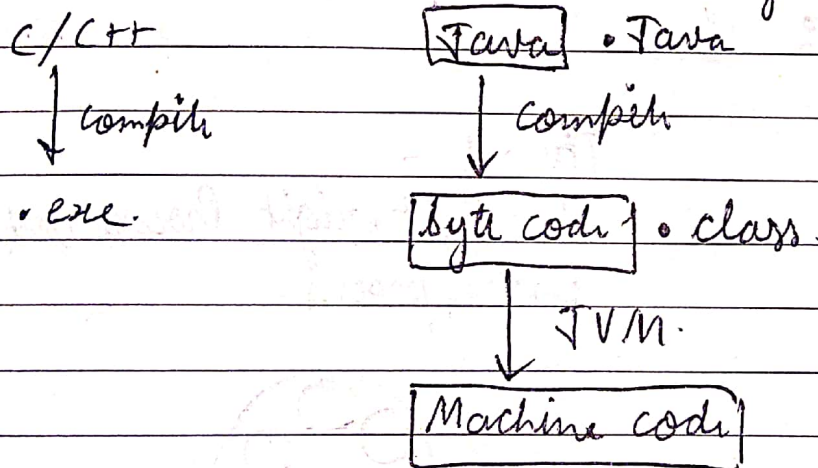
a programming language. , can make Desktop, web, mobile apps,
Embedded Software, Enterprise Software Appl^n.

★ JAVA Features:
1) Machine Independent / Architectral Neutral. eg: C int 2 byte, 4 byte   32 bit   64 bit
2) Platform Independent 600S. (work on Windows, Linux, MacOSX).
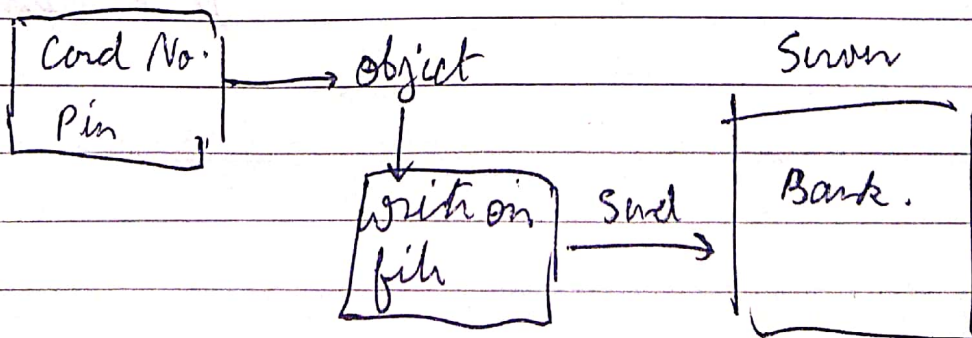3) Portable (can be shared easily due to above 2).

JVM → responsible to convert byte code to machine code.

```
C/C++              [Java] ·Java
  |                   |
  | compile           | compile
  ↓                   ↓
· exe.            [byte code] · class.
                      |
                      | JVM.
                      ↓
                 [Machine code]
```

4) Distributed.
     ↳ RMI (Remote method Invocation)
     ↳ EJB (Enterprise Java Beans).

eg:

```
[Card No.]  ──→ object                    Server
[Pin   ]           |
                   ↓                     [Bank.]
              [with on]  Send  ──→
              [file  ]
```
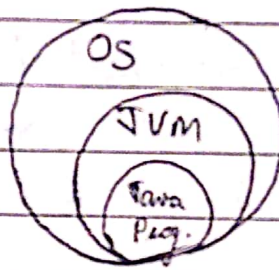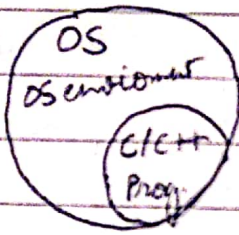
5) **Robust - Strong**
   There is no pointer leakage problem in Java.

6) **Secure -**

7) **Multi-Threading :**

Process   Thread -
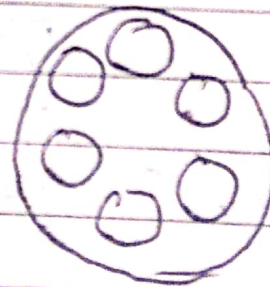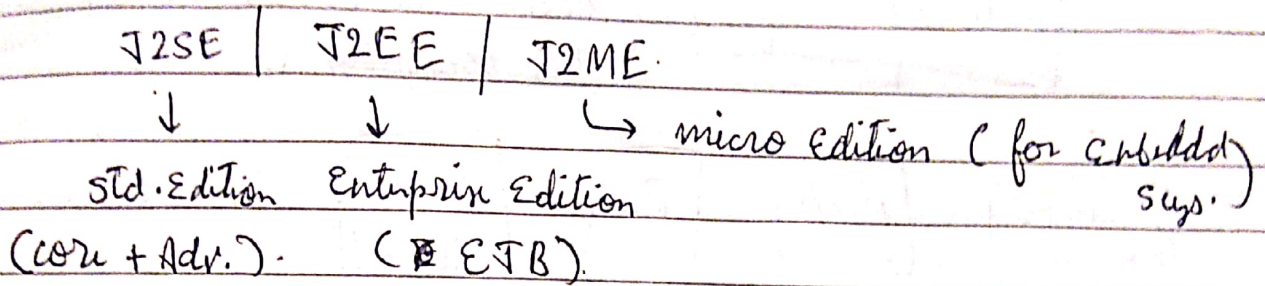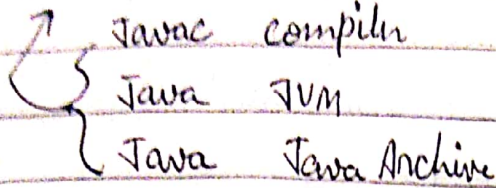   is a light weight Process and
                                 part of process.

memory + Resource

Every Thread use same
memory + Resource as
the Process

JDK → Java Development Kit

┌ Javac   compiler
┤ Java   JVM
└ Java   Java Archive

J2SE	J2EE	J2ME
↓	↓	↳ micro Edition (for embedded
Std. Edition	Enterprise Edition	sys.)
(core + Adv.)	(⑂ EJB)	

Path of Installation:

C:/ Program Files / Java / Jdk1 bin   X
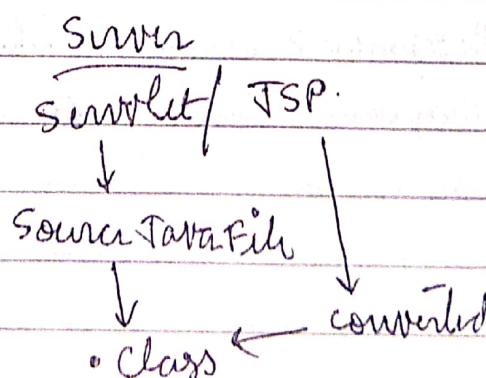C:/ Java / Jdk/ bin.   ✓ (for ease)
Save files in D, E, F files as only (drive only gets
corrupted.

JVM is
JRE → Java Runtime Environment (Instance of JRE)
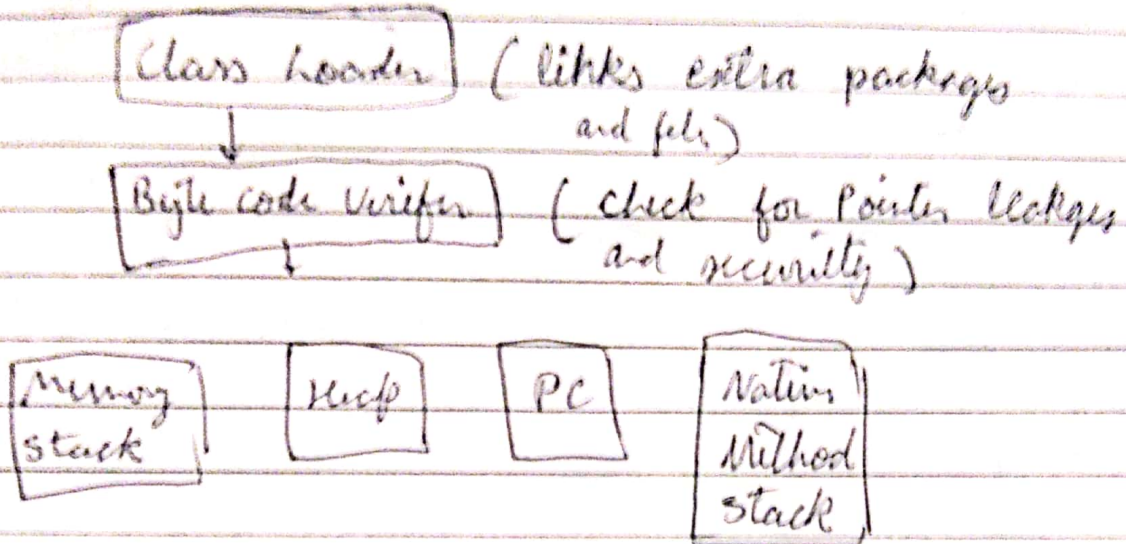   ∧

┌ JDBC → Java DB connectivity
┤ → SQL library
┤ → Network library
└ → Deployment libraries

Desktop	Server
JRE	servlet/ JSP.
local machine	↓
	Source Java File
	↓
	• Class ← converted
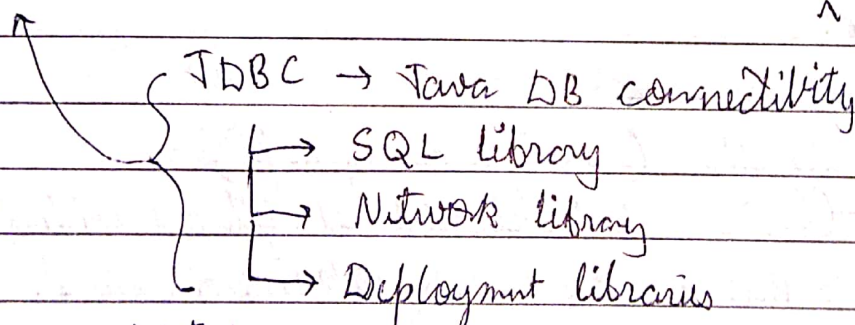
compile : source code to byte code
Interpret : byte code to machine code.

Java is both compiled and Interpreted.

JVM :

```
[Class Loader]  ( links extra packages
                      and files )
        ↓
[Byte code verifier]  ( check for Pointer leakages
                           and security )
```

```
┌─────────┐   ┌──────┐   ┌────┐   ┌─────────┐
│ Memory  │   │ Heap │   │ PC │   │ Native  │
│ stack   │   │      │   │    │   │ Method  │
└─────────┘   └──────┘   └────┘   │ stack   │
                                  └─────────┘
```

(To store C/C++ code which
     is converted in byte code)

JVM is platform dependent.

window : C:/ Java/ Jdk 1.15.0/ bin
          store file in E:/ JavaPrograms.

open cmd .

C:\> E: ↵

E:\> cd JavaPrograms ↵

E:\JavaPrograms> dir (not necessary step)
in linux ←(ls)   (it will list all file and folders)

E:\JavaPrograms> Path = C:\ Java\ Jdk 1.15.0 \ bin ↵

E:\JavaPrograms> Javac First.Java.

E:\JavaPrograms> Java A ──┐
                          └→ The class containing
                             main method
                             First.Java
                             class A {
                                void main() { }
                             };

Class is blue Print of object
object is instar of any class

class is a blueprint which has some specific properties
obj is a instance of a class in real world which posses or hold.
class properties.

Firest , Java
⎯⎯⎯⎯ everything is inside a class in java.

accus specifirs

class First {   return type

                          → method name   array of string class obj

Public static void main (String S[]) {
    System . out . Println (" Hello world");
        → a class, → nested class of system, → method of out.
    System . out . Print (" demo of Print ");
    System · out · Print" second demo of Print ");
    }
}
}
    // Sudo apt-get install openJdk; (to install open Jdk o
                                    ^ Linux)   command.
    (on terminal in Linux .Java - Version to check if is istalled
    or not).

System. out. Printlr("")⎯→ have new line at end.
System. out. Print("")⎯→ don't have '\n' in end.

(Crt. + Att + t) → Shortcut for Terminal in
                        Linux.

Scanned with CamScanner