JAVA

1) Platform independent
2) truly object oriented
3) memory management Automatic ~~Manually~~
4) No Explicit Pointer ✗
5) Structure ✗
6) Union ✗
7) typedef ✗
8) Sizeof ✗
9) Signed, Unsigned ✗
10) Header files ✗
11) Storage class ✗
12) Preprocessor Directive ✗
13) 4.5 % 2 ✓

C

Platform dependent

Procedural language

memory management manually (by coding)

Yes, C language support Pointer

Structure ✓

Union ✓

typedef ✓

Sizeof ✓

Signed, Unsigned ✓

Header files ✓

Storage class ✓

Preprocessor Directive ✓

4.5 % 2

↓

Error

Features of JAVA

1) **Simple :-**

a) Syntax based on C/C++

b) Automatic memory management

c) No, Explicit pointer

2) **Architecture Neutral :-**

The size of Primitive data type is fixed in JAVA

Note :- In C/C++ language size of data type depend on Compiler or operating system

3) **Platform independent :-**

We can carry bytecode and execute on any platforms

4) **truly object oriented**

JAVA is a truly object oriented but Not 100% [bez Primitive data type of JAVA have NO Predefine class]

If you want to write a single statement you have to make a class

5)

Compiled & Interpreted

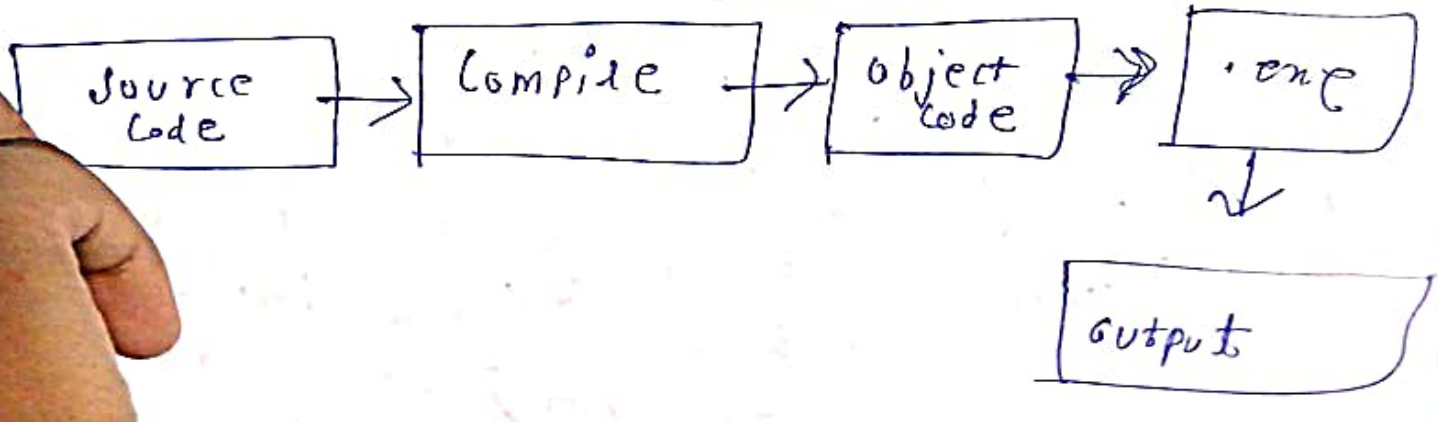
Firstly JAVA Compiler Convert Source Code into bytecode than JVM Uses interpreter to Convert bytecode into executable code

Compiled language : C / C++

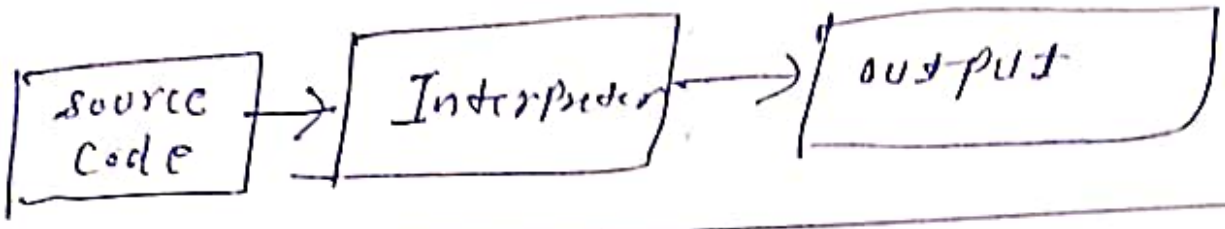
Interpreted language : PYTHON

Compiled & Interpreted : JAVA

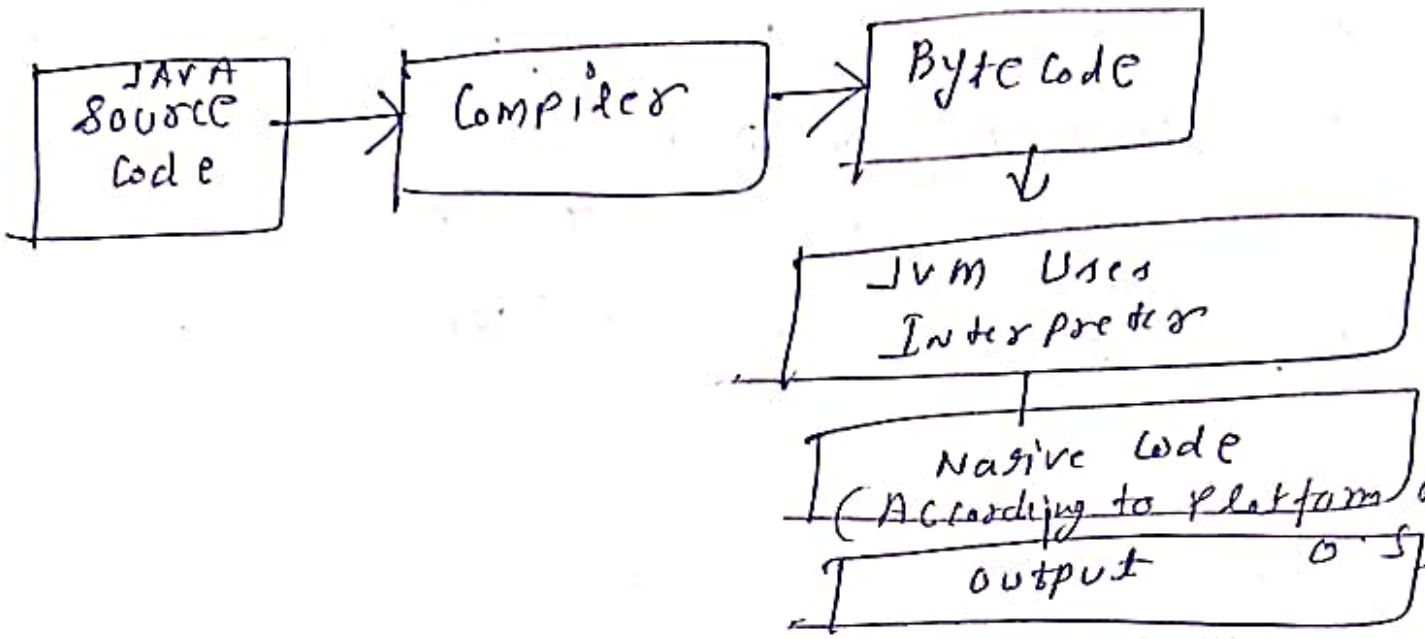
Compiler Working Process (IN C/C++)



Interpreter Working Process



JAVA Working Process



Robust (Strong)

JAVA is a Robust language bcz

1) Strict checking of data type
2) JAVA support Exception handling for run time error

1) int a = 10; ✓
2) in a = 10.5; ↓ C.T. Error

10 by default it is int

10.5 by default it is double

3) float a = 10.5; ✗
C.T. Error

4) float a = 10.5f; ✓

5) double a = 10.5; ✓

Secured :-

a) Two times checking of JAVA code

b) JAVA Program runs inside the Virtual Sandbox of JVM

c) No, memory leak (waste)

High Performance :-

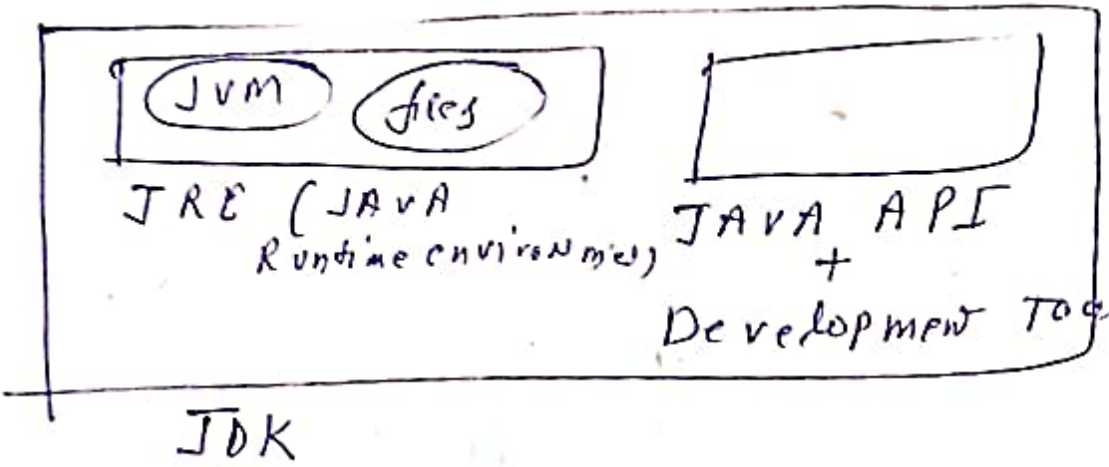
JAVA Interpreter, interpreted bytecode into executable code fastly Compare than other interpreted language

Dynamic

Multithread :- If JAVA Program Can have multiple flow

JDK (JAVA Development Kit)

JDK contain JAVA API with development tools and JRE



JDK Version History

JDK 1.0] 1996

JDK 1.1

" 2

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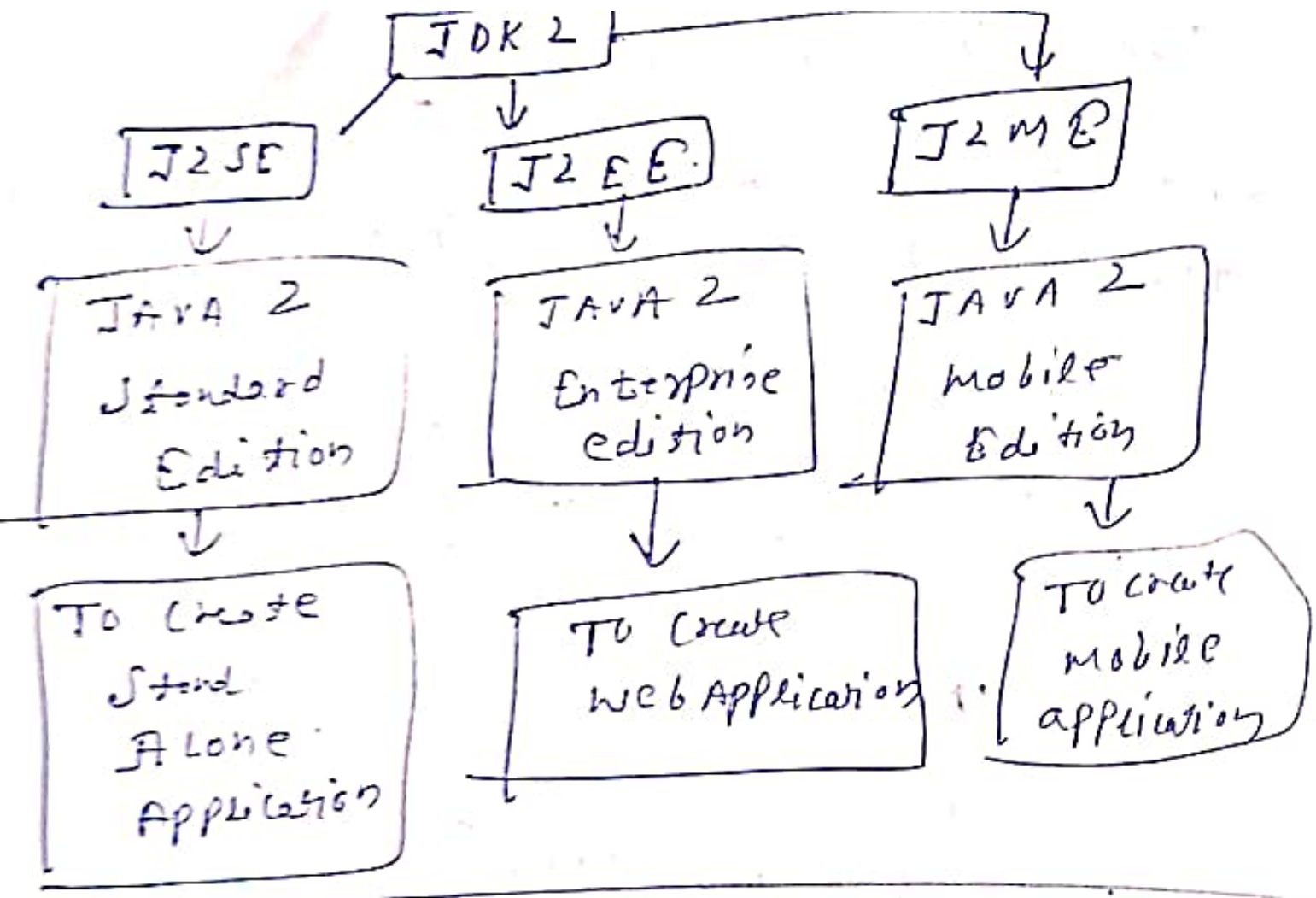
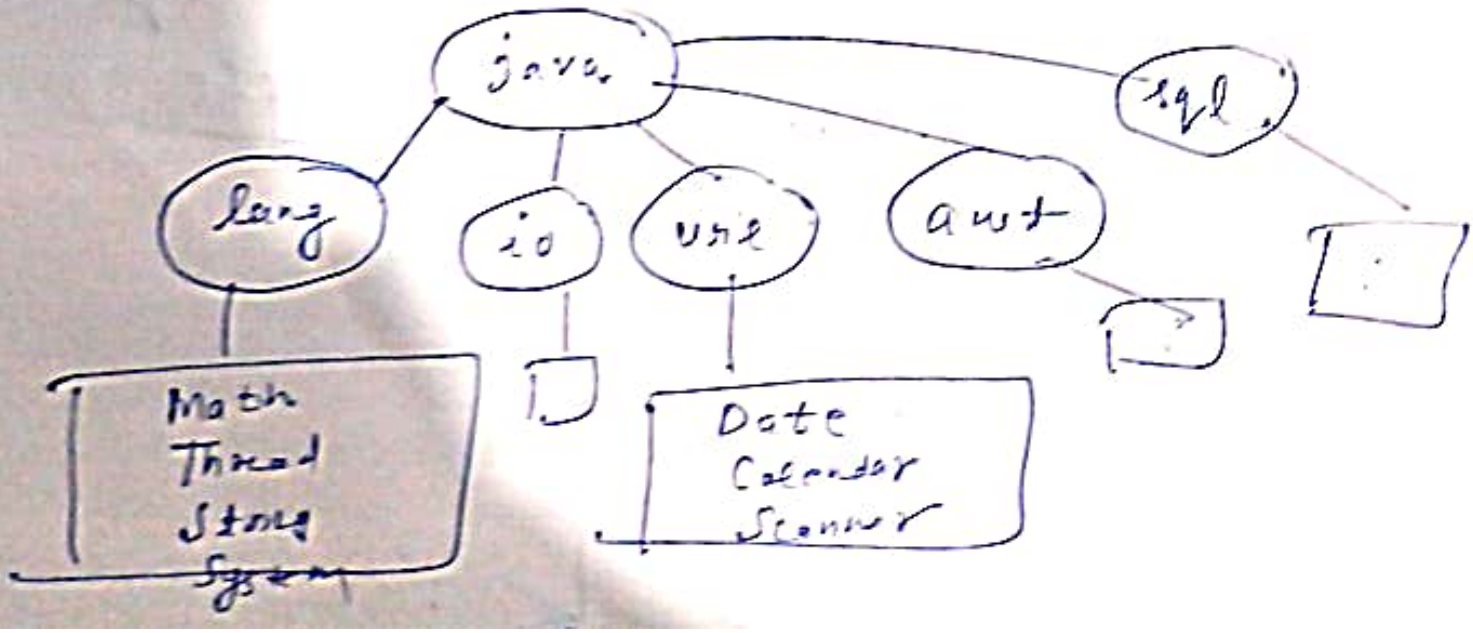
Launch by Sun Microsystems

Launch by Oracle



JAVA API (Application programming interface)

JAVA API's are the collection of predefine classes Using them we Can Create a New Program



Development Tools :-

javac :- JAVA Compiler
java :- " Interpreter
javadb :- " Debugger
javadoc :- " Documentation
javap :- " programming
appletviewer :- " To Run JAVA applet

JRE (JAVA Runtime environment)

It is the physical implementation of JVM.
It contains JVM and other files.
other files used by JVM at the time of program execution the

JVM (JAVA virtual machine)

It contains
1) Classloader
2) Bytecode verifier
3) Security manager
4) Garbage Collector