OOPJ Assignment No.-1

1. Reading Assignment: A Short History of Java
2. Reading Assignment: Java Language Features
3. Reading Assignment: Which Version of JDK Should I Use?
4. Reading Assignment: JDK Installation Directory Structure
5. Reading Assignment: About Java Technology
6. Coding Assignments: Hello World Program
7. Reading Assignment: The JVM Architecture Explained
8. Reading Assignment: The Java Language Environment: Contents

Oracle buy Java from Sun Microsystems in 2009.

∴ After 2009, Java is of Oracle.
Oracle also buy MySQL.
To have its own database but buy MySQL.

It was [illegible] for meta,
Self facebook exist so why they buy whatsapp?
Because whatsapp can capture facebook's market.

Orkut → In 2008, Orkut is there. facebook not available there.
Market of orkut captured by facebook.
and same fear for whatsapp.
Now whatsapp is still live. no major change [illegible] on whatsapp after buying it.

facebook → whatsapp → after whatsapp buy → instagram

∴ people shifted also on instagram
∴ then buy instagram also.

So, the updates which will available on whatsapp are [illegible] on instagram.
Now all are on instagram.
This is ecosystem.

For Apple →
phone → ipad → pencil → macbook → imac
ecosystem → cloth of cleaning → earbuds → connector of PD
for Samsung →
phone → TV → laptop → wearable
→ ecosystem.

Google developer ecosystem such this.

Oracle said, our Java is used by google customer so you have to pay us. Customer/Company need to pay us.

Google say, we didn't take any money from customer so how & why we pay?
Instead google saying your Java language is moving because of us.

So, google decided to leave Java and build its own language Cotlin in 2016. as an alternate language for Android Application development.
If Java ask money then switch to Cotlin.
Java is keep as same as Java also.
Cotlin is keep as same as Java Also.
Virtual machine is also near about same.
And Market of Java in (Micro Edition) (Java ME) is decreased.

Oracle Community is free and enterprise edition is paid & expensive. Oracle is business Company.
Java is also free yet.

Swift language use for ios phone application development
Objective C before swift

Scope of ios application develop is greater then Android application development even in devices are less
Swift can learn in one-month but needed mac for development imac/macbook.

7 semester put — 12/6% than 11/?? (??) 59% → 69%

Features

A ① Architecture neutral
D ② Dynamic
③ Distributed
H ④ High performance
⑤ Interpreted
M ⑥ Multithreaded
O ⑦ Object-oriented
P ⑧ Platform Independent
⑨ Portable
R ⑩ Reliable
⑪ Robust
S ⑫ Simple
⑬ Secure

② Dynamic → Runtime MA

③ Distributed → We can create Centralized & distributed application in Java.

(i) Centralized → Code on machine & run on same machine

(ii) distributed → Code anywhere & Compile it then run. means Java application can be run on network.
∴ Java is distributed.

④ High performance
Java has JIT compiler. Due to it they remove drawback of interpreter in some amount.
∴ they some performance increase.
∴ the same ... high perform compare to other Java(?) ... high performance.

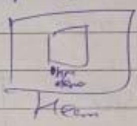
⑤ Interpreted :-
Not better but they gave.
If we have 50% then we have to pass ... have 40%.
I have got minimum 50%.
Get ... full ...
Same thing is Java.
Java is most slow in Compiled language. &
Java is most fast in interpreter. Hence
∴ they say Java is interpreted.
Therefore, Java is both compiled + interpreter.
But at time of telling it Java interpreter because it is their feature.

At compile full, they will show slow so better to don't show compiler side. Only show fast side.

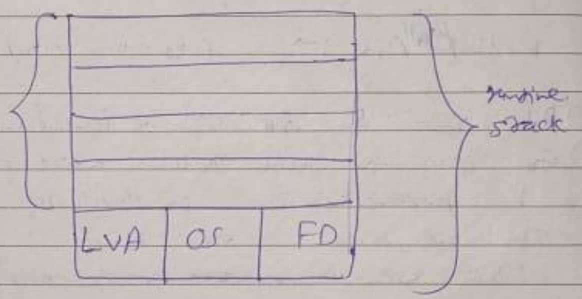
② Heap Area :→

① Dynamic Memory Allocation things.
All things created by new keyword.
In Java all object only created by new so, all objects of all classes are dynamic in Java.
∴ All objects stored in heap area.

new Demo();

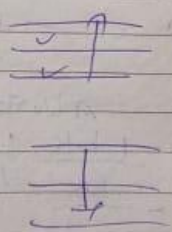


③ Runtime Stack Area :-



In every program lang. incl. Java, fn. need to go on stack for running.
Function also follow LIFO behaviour of stack for discharge.

When fn. added stack grow as ↑
When fn. destroy, it will go ↓



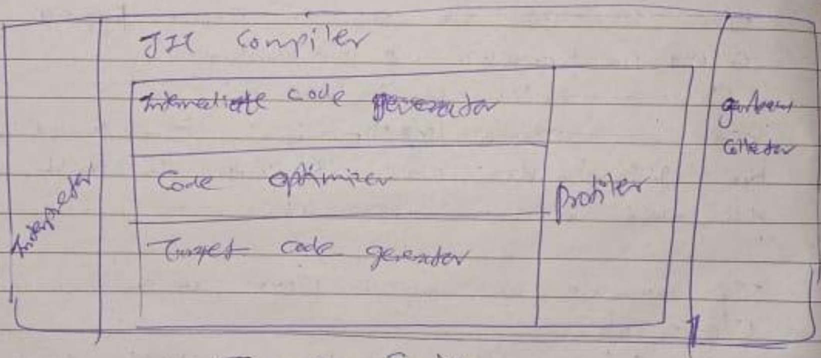
There are all stack frames, for functions. All Java functions run here.

So, to run those functions, we then introduce Native method interface.
∴ C/C++ code / fun will run on Native method stack

Until now we got Space/memory.

Now, code come in memory area.
now its time to execute code,
To execute this an JVM give one engine of itself called Execution Engine.

Execution Engine:



Execution Engine.

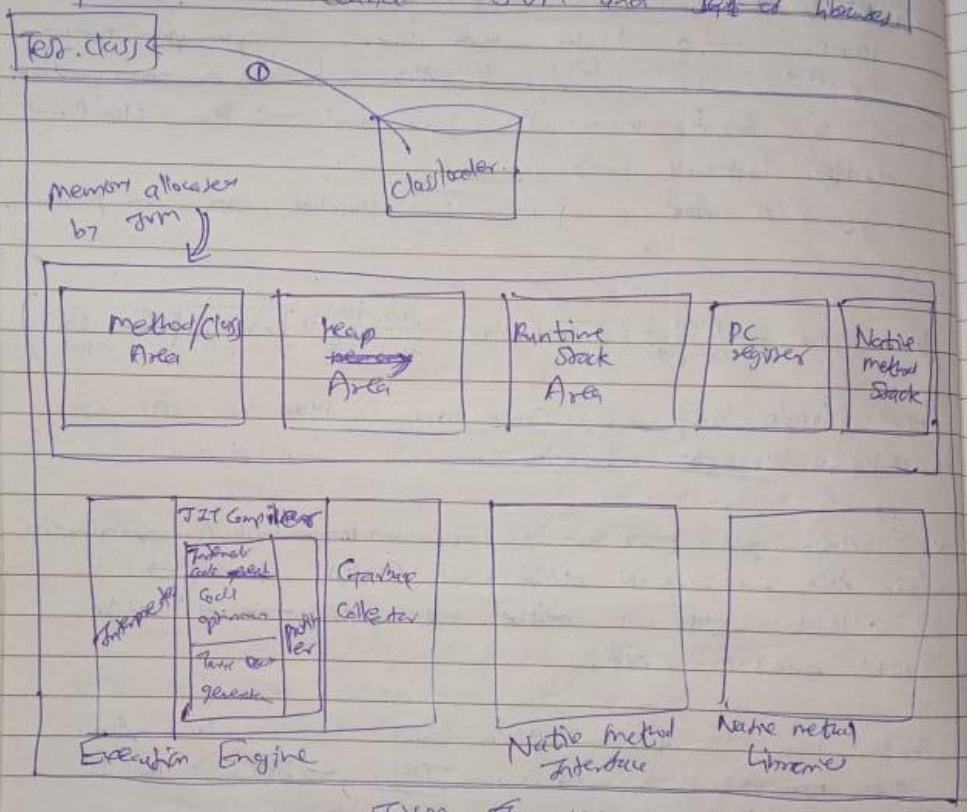
Until now we compile code & space given now execution come.

1st Comparison come → Interpreter
JIT → Just-In-Time Compiler

① Interpreter:→
our get code is not English/binary code.
It is Byte Code. Byte code is not human understandable code.

loader ask call JRE → JRE come in RAM → Now JRE load jvm to go and take .class file in RAM → Now jvm & class file in RAM then. (Loader off).

JRE only contain JVM and ~~Rt~~ libraries.



JVM (Java Virtual machine)

Java have its own classloader → and class loader only take up .exe file. for Hard disk.

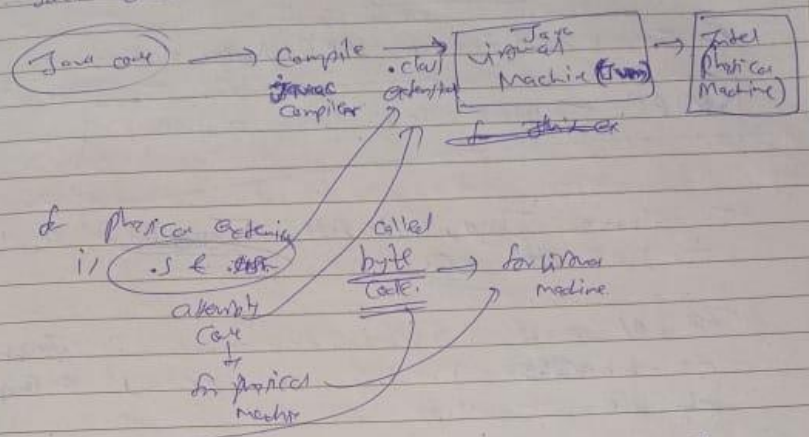
OS call loader every JRE load → JVM load classloader.

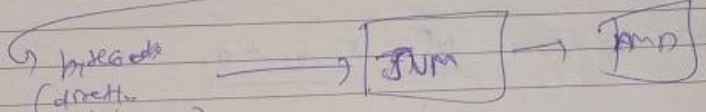
Why C, why C++ code is platform dependent ? means not run other OS ?

→ Magic number not mention in primary header.

(Magic Number) → Windows MZ PE → ✗ → Linux ELF

· Java decide

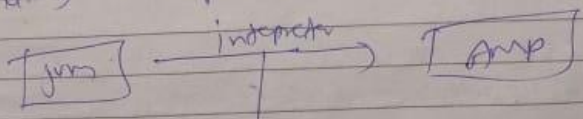




JVM read compile Java Code.
JVM is machine but program
∴ JVM is software.
∴ JVM creates virtual machine. using programming.

bytecode only recognized to JVM.

JVM get byte code.
JVM convert code according to processor using interpeter.



Code run on physical machine.
read line by line

∴ Code is compiled on intel can run on AMD.
But certain code not compiled on intel & not run on JVM.

3 Components

Classloader

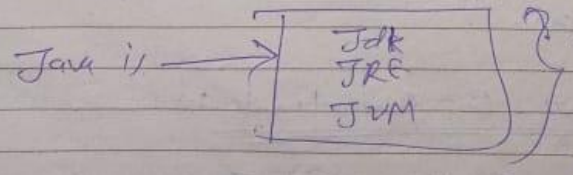
Loading have 3 loaders → ① Bootstrap classloader
② Extension classloader
③ Application classloader

Linking ← under all..., it is class...

Q. Java is platform dependent / independent?
→ Platform Dependent. How?

Java itself is platform dependent.
But bytecode is platform independent.

How? We can download jdk from Oracle site. We can see that multiple setup differentiate according to OS → windows, linux & mac etc.



These are differ for all OS as per on Oracle site.

So here it is platform dependent

MacOSX OS is used for Apple Computer

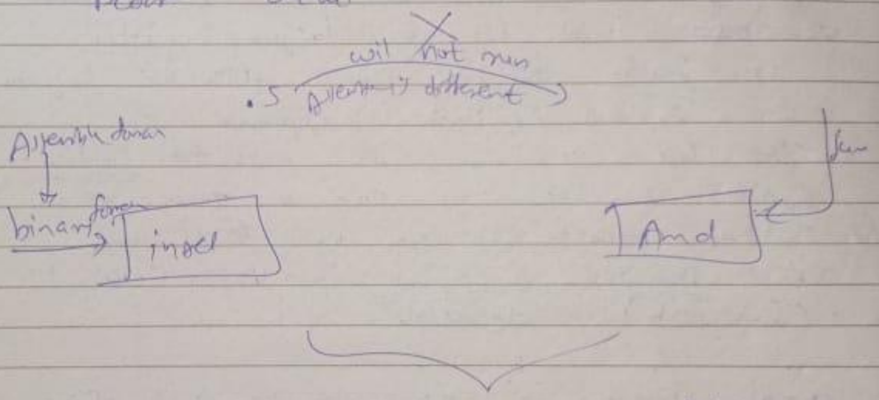
~~ios os~~ iOS is only for mobile & ipad

Windows for Microsoft computer.

Q. Why Java came?

→ As of there always languages available for daily service of TV.

Before Java



Both assembly are different for both processor.

Becau C-code is Architecture Dependent.

Same problem occur for C++.
becau C++ is design for C.

Same problem can be happen in TV.
samsung TV, LG TV
different → so same application can't work.
Same h/w can
different h/w can't work.

∴ They give Java name to that.

Also, → it is easy to read
→ it is inspiration from Coffee.
→ Java name can be taken for extension as it is.

∴ They give Java name.

When we see logo of Java, it's cup of tea with hot air

This logo taken/inspired from Coffee.
As name of coffee ∴ logo also of Coffee.

Java is mostly used language for Backend in world.

JavaScript → frontend → bcoz it has framework → Angular
→ React

∴ then prior of publicity is succeeded/failed.

1995 → Java language released.

ex. every mobile update we can see name as update ... update update.
↓
beta update.

beta update is not done fully. Its our choice beta update means try it. We didn't launched it. It is in testing phase.

1995 → Also launched version of Java
Java alpha & Beta.
↓ all testing launched
↓ some things are in testing → you can't claim/complain.

1996 → 1st version of Java launched
It is full fledged and give to use to world fully.

Then do good updates in 3 things :→

① Java SE (Standard edition) ~~→ for Desktop application~~
② Java Enterprise edition (JEE)
③ Java ME (micro edition)

① SE → Desktop applica. ex. Medical shop
② JEE → Enterprise applicatn ex. bank s/w
③ ME → At that time, Java is the only language to develop s/w for Mobiles.

But due to some mistake of Java, Java not much used in mobiles. because
Android OS is of company Google.
play store is of company Google.
Youtube, chrome, gmail, ...
Means google develop its an ecosystem so we didn't ~~leave~~ google

Now, Meta also started to do such ecosystem like facebook, instagram, whatsapp.....

Java is of Sun-microsystems.

Simula is 1st language in world of Object Oriented.
This is 1st language which represent physical object literally using classes.

Myth → C++ is developed in AT&T Bell lab not western anywhere.
also Myth is
① James Gosling
② Mike Sheridan
③ Patrick Naughton

James give interview in AT&T Bell but not selected. Later five year interview and selected in Sun Microsystem Company.

In 1991 → Sun microsystem decided to do one project — Interactive Television.
Many use Remote to change channel.
To operating remotely using remote.
Project started.
If it succeed then they think all appliances like AC, oven, are be boom.
This company develop application for electronic appliances
Project started.
Now which name give to project?

James, Mike, Patrick is ~~leading~~ leading project.
James is famous because he is main lead.

Team name is Green Team. And ~~project~~
Project Name = Green Talk
1991 — project started.

Q. Why Green given?

The vice president of company Baldumare is Green at that time so give name Green Team and Green Talk.

Meaning Team of Green & Talk (project) of green.

Q. Then what extension give to project?
→ They decided **.gt** → green talk / green team } .gt

At that time Demo.gt

1991 → project started.
1995 → Released project for world.

There is one tree of Oak out of office of Sun Microsystem. It is Indonesia. It is their National tree — Oak.

∴ They see tree & decided to give name Oak.
But there is one company with Oak Technologies. name already registered.

Q. What name to give?

→ Many names come in front of them.
Dynamic, Evolutionary, Silk, ... and Java → unique name.
Common and spellings is hard.

Java is famous in Indonesia.
The 1st coffee is prepared in Indonesia in whole world and its name is Java.

They think, if this project successful so, this name will spread worldwide and coffee also spread.