**Mohammad Zeeshan(OOP Java)**

 The language took 18 months to develop and had an initial name as **Oak** which was renamed to **Java**in 1995, due to copyright issues. Originally developed by James Gosling at Sun Microsystems(which has since merged into Oracle Corporation) and released in 1995. JDK 1.0 released in(January 23, 1996).

**Java SE 8.0** is a current stable release of Java, and many other previous Java versions are also available.

**OOP**

**Encapsulation** is one of the four fundamental OOP concepts. The other three are inheritance, polymorphism, and abstraction.

**ENCAPSULATION:**  Encapsulatioin data hiding and interface k purpose k liye use kiya jata hai like public private protectd data kerny k liye Like kesy hm other class sy data hide kerskty hen aur isi class me rehkr use kerskty hen

**Class** ek Blueprint Templat he jo Create kerta ha Object aur define kerta hai iski properties aur fields ko Class Object k Behviour ko Define kerti hai

**Create Object**  A a=new A();

**Object**  is the Instance of the class and it contains al real instead values of class

Object Store Internally Means Variables Values Saves in Internally

Through the Object Reference Varibale we can acces the Object

Through the gc JVM Object Detele from the memory

Java virtual Machine

**how object get memory in java**

jub hum Ek Variable declear kerty hen ek classs type ka to uska just reference create hota hai.Agr memory Allocate kerwani hogi to humen must new() ka object use kerna hoga

**How the objects are stored in memory in Java?**two type of memory hoti hen Stack and heap   
stack memory me primitives types and addres of the object hota hai..Or Object I values stored hoti hen heap Memory main

Stack Memory me Object kay Reference ka address Allocate kerta hau Memory main aur Heap main Values ko Object ki

* **Intance Variable**Instance variable bhi ek variable jo class me ek member hota hai aur yeh Refernec Address hota hai Ek class ka  
  Instance variables are declared in a class, but outside a method, constructor or any block because its take a address in a class before runtime  
  Intance Variable each time create a object variable on runtime its own personal copy an instance Var call acces in main methods..

**Static Variables**a single copy of static variable is created and shared among all the instances of the class. Memory allocation for such variables only happens once when the class is loaded in the memory. Heap Segment — contains all **created** objects in runtime, objects only plus their object attributes (instance **variables**). Code Segment — the segment where the actual compiled **Java** bytecodes resides when loaded.this var only have one copy that is shared all the diff objects of class.. you can calls anywhere single copy of the variables no matter how many objects you create.

**NOTE:  
Stack** is used for static **memory allocation** and **Heap** for dynamic **memory allocation**, both stored in the computer's RAM . Variables **allocated** on the **stack**are stored directly to the **memory** and access to this **memory** is very fast, and it's**allocation** is dealt with when the program is compiled.

**Methods**A method is a set of code which is referred to by name and can be called (invoked) at any point in a program simply by utilizing the method's name.

OVerrloading Main Methods k name same aur parameters diff hoty hen

Overrding main NAME,Parameters ,Types sub same hota hai bus is me Subclass me use kerna hoto ek ko override kerna hota hai yani Parents class k Method ko use kerny k liye super.method() kerna hoga to parents ka method run hoga child ka nahi

Usage of Java Method Overriding

* Method overriding is used to provide specific implementation of a method that is already provided by its super class.and I want to use in subclass(Child)
* Method overriding is used for runtime polymorphism