

Class Work [4/09/2024]

1. Java Modifiers → Two groups.

- ① Access Modifiers → controls the access level
- ② Non-Access Modifiers → do not control access level but provides other functionality

* Access Modifiers

- ① public
- ② private
- ③ protected
- ④ default

* Non-Access Modifiers

- ① final
- ② static
- ③ abstract
- ④ transient
- ⑤ synchronized
- ⑥ volatile

2. Java Buzzwords

- ① Simple
- ② Object-Oriented
- ③ Distributed
- ④ Compiled & Interpreted
- ⑤ Robust
- ⑥ Secure
- ⑦ Architecture-Neutral
- ⑧ Portable
- ⑨ High Performance
- ⑩ Multithreaded
- ⑪ Dynamic

3. Components of Java

- 1) Java Virtual Machine (JVM)
- 2) Java Runtime Environment (JRE)
- 3) Java Development Kit (JDK)

4) Meaning of main() method

`public static void main (String args[])`
 ↓ ↓ ↓
 Access specifier return type Array of string type.

5) Access modifiers.

- ① Private → accessible only within the class
- ② Default → accessible only within the package
- ③ Protected → accessible within the package through child class.
- ④ Public → accessible everywhere

6) Java virtual Thread

→ Virtual threads are lightweight threads that reduce the effort of writing, maintaining and debugging high-throughput concurrent application.

It's an instance of java.lang.Thread.

Virtual thread isn't tied to a specific OS thread.

7) Entry point method:

In java entry point method is main ~~meth~~ method i.e.

`public static void main (String args[])`

8) System.in and System.out

System.in → Standard input stream used to read input from user, typically from Keyboard. It is part of System class.

System.out → System is a final class defined in java.lang package.

out is an instance of PrintStream type, which is public and static member field of the System class.

⑩ Size of data types.

Data Type	Size
① byte	1 byte
② short	2 bytes
③ int	4 bytes
④ long	8 bytes
⑤ float	4 bytes
⑥ double	8 bytes
⑦ boolean	1 bit
⑧ char	2 bytes

⑪ Loader in Java.

3 types of loader

- ① Classloader → This is a part of the java runtime environment that dynamically load java classes into the Java Virtual Machine (JVM).
- ② Loader in Android → In Android development, a loader is an abstract class that performs asynchronous loading of data.
- ③ Service loader → Java provides a standard mechanism to discover and load implementations of services via the ServiceLoader class. This is useful in scenarios like loading plugins or finding implementations of an interface at runtime.

⑫ Garbage collector

→ When java programs run on the JVM, objects are created on the heap, which is a portion of the memory dedicated to the program. Eventually, some objects will no longer be needed. The ~~gar~~ garbage collector finds these unused objects and deletes them to free up memory.

→ The garbage collector is the best example of the Daemon thread as it is always running in the background.