**DSA With JAVA extra notes**

When we write code and run. This is what happens in system:

When you press Run 🡪 language compiler it changes into executable file 🡪 executable file runs in system 🡪 you get output.

**C++ is platform dependent**.

Platform dependent languages produce different outcome on different platform by executable file (.exe or .out file).

Note – it doesn’t mean that program.cpp file will produce different outcome. Actually, executable file gives different output.

**Java is a platform independent language.** (Compiled file we get in java is “.class”.).

It happens because of JVM (Java virtual Machine).

When executed - .java 🡪 .class 🡪 will go through JVM (jvm gives file to suitable binary output) 🡪 gives output.

**JDK – Java development kit –** It has complete development kit for java like - JRE (Java Runtime Environment), Compiler, java docs.

JRE –JVM comes under it.

IDE – Integrated development environment. An integrated development environment (IDE) is software for building applications that combines common developer tools into a single GUI.

Basics of JAVA

**Data types –** It defines which type of value a variable can store. And what type of mathematical and logical operations can be applied on it.

These are of two types-

**Primitive data type –** These are fundamental data types, With these data types all other data types are created.

These are predefined data types.

Below are primitive data types (total 8)-

**Int –** It takes 4 bytes (32 bits) of memory

**Float –** It takes 4 bytes (32 bits) of memory

**Double –** It takes 8 bytes (16 bits) of memory

**Boolean –** It takes 1 bytes (8 bits) of memory

**Char –** It takes 2 bytes (16 bits) of memory

**short –** It takes 2 bytes (16 bits) of memory

**long –** It takes 8 bytes (64 bits) of memory

**byte –** It takes 1 bytes (8 bits) of memory

**Non-Primitive data types –** These are also called reference data types, because they refer to any object.

These are not predefined data types, and are created by developer. (not defined doesn’t means developer has to defined it completely, it means he has to define this data type before using it in project and its functions gets set by java itself).

They don’t have any fixed size, their size is defined by user or automatically allocates by itself according to need.

Below are some non-primitive data types (total 5 types)-

**Array –**

**String –**

**Class –**

**Object –**

**Interface –**

**Arithmetic operators -**  +,-,\*,/,%

They operate according to BODMAS rule, if developer use multiple operation in single line.

If two operator have same precedents (for ex- \* and / ) then in this case operation will happen from left to right (Associativity law).