Day 1

Language

- e.g C, C++, Java, C#, Python, Go etc.
- Data Types
- Tokens
- Syntax and semantics
- Built-in features
- Application Development(CUI,GUI,Lib)
- If we want to implement business logic then we should language.

Technology

- e.g ASP.NET, Java etc.
- If we want to develop application the we should use technology.
- Every language is a technoly but every technology is not a language.

Platform

- It is either hardware or software environment in which we can run/execute application.
- Types of platform

1. Hardware based platform
    - All operating systems
2. Software Only Platform
    - MS.NET, Java etc.

> Java lanaguage is both i.e technology as well as platform.

History

- Java is developed by James Gosling and his team in 1991 at Sun MicroSystems.
- Since 2010, Java is a product of Oracle.
- Initial name of java was "Oak". Due to name ambiguity it was renamed to Java.
- First version of Java "1.0" was released in 1996.

Java Platforms

1. Java SE Platform
2. Java EE Platform
3. Java ME Platform
4. Java FX

> In java , class, interface, Enum, Error, Exception is also called as API.

Java SE Platform

- Java Standard Edition
- It is also called as Core Java
- We can use it to develop CUI, GUI, Networking application, libraries(.jar)
- Java SE API's are sub set of Java EE API.

Java EE Platform

- Java Enterprise Edition
- It is also called as JEE / Web java / Advanced Java / Enterprise Java.
- We can use it to develop Web application and Distributed application(Web Servervics,REST services, Micro Services etc.)
- Java EE API's are super set of Java SE and Java ME API's

Java ME Platform

- Java Micro Edition
- It is used to develop application for consumer devices
- e.g Mobile Phone
- Java ME API's are sub set of Java SE API.

Java FX

- It is used to develop rich application for internet.

Achitecture of Java SE Application

- Java SE Platform contains 2 components

1. Java API
2. Java Virtual Machine(JVM)

- SDK = Lang Tools + Documentation + Supporting Libs + Runtime environment.
- JDK = Java Lang Tools + Java Docs + rt.jar + JVM
- If we want to develop java application then we must install JDK software
- Vendor : SUN/Oracle
- JDK = Java Lang Tools + Java Docs + JRE[rt.jar + JVM]
- If we want to deploy/install java application then we must install JRE software on client's machine.
- rt.jar file contains Java SE API's.

JDK's Installation Directory Structure

- bin :
    - It comtains java language tools
- include :
    - In context of java, C/C++ code is called native code.

    - Java Native Interface(JNI) is a java language feature that is used to access native code.
    - It contains header files which are required to access native code.
- lib :
    - It contains library files which are required for third party tools
- src :
    - Java is open source technology.
    - It contains source code of Java SE API.
- jre :
    - It contains JVM implementation and rt.jar file.
- docs :
    - It contains documentation of java's source code
- man :
    - It contains documentation of java language tools

"Hello World!!!" Application

- Create Program.java and write following code:

```
class Program
{
    public static void main( String[] args )
    {
        System.out.println("Hello World");
    }
}
```

- javac Program.java
- java Program