

## Object Oriented Programming using java

### Features

1. Simple → because it does not use \* operator for pointers
2. Machine independent → The program will run on all the machines, irrespective of h/w available the machine.
3. Platform independent → The program will work on all operating systems.
4. Network programming → Java support Socket programming, and hence it also supports programs like chat bots
5. Multithreading is possible → Using java you may write multithreaded program
6. Garbage collector → Because of garbage collector there is no memory leakage. Garbage collector will release memory allocated in heap area, once it goes out of scope. Garbage collector will run when your heap area allocation reaches to threshold value, which is set at the time of configuration (around 70%)
7. Object oriented features are available.
8. Database connectivity is also possible. (JDBC)
9. Interpreter and compiler → because compiler will compile the code and convert it into intermediate byte code, and then interpreter will convert it line by line into machine understandable format.

Compiler	Interpreter
It compiles the code and converts it into .exe file	It converts the code in intermediate code, which later will get executed line by line
The executable file is machine dependent and platform dependent	But the intermediate file is machine and platform independent
This is faster	This is slow
It needs space to store exe file	It does not need space for storing the exe file

### JDK VS JRE

When you are developer, and writing programs using java, then use JDK (Java development kit)

But if you are only users of java programming then use JRE (Java runtime environment)

Download JDK 1.8 from the following link

<https://www.oracle.com/in/java/technologies/javase/javase8-archive-downloads.html>

install it on your machine by running .exe file, it will get installed in folder

C:\Program Files\Java\jdk1.8.0\_271

and then set following environment variables, by selecting edit environment variable for your account

C:\Program Files\Java\jdk1.8.0\_271 -----> JAVA\_HOME

C:\Program Files\Java\jdk1.8.0\_271\bin -----> path

C:\Program Files\Java\jdk1.8.0\_271\lib ---> classpath

Write the following file using notepad

```
class HelloWorld{

    public static void main(String[] args){

        System.out.println("Hello World!!");

    }

}
```

Open cmd prompt

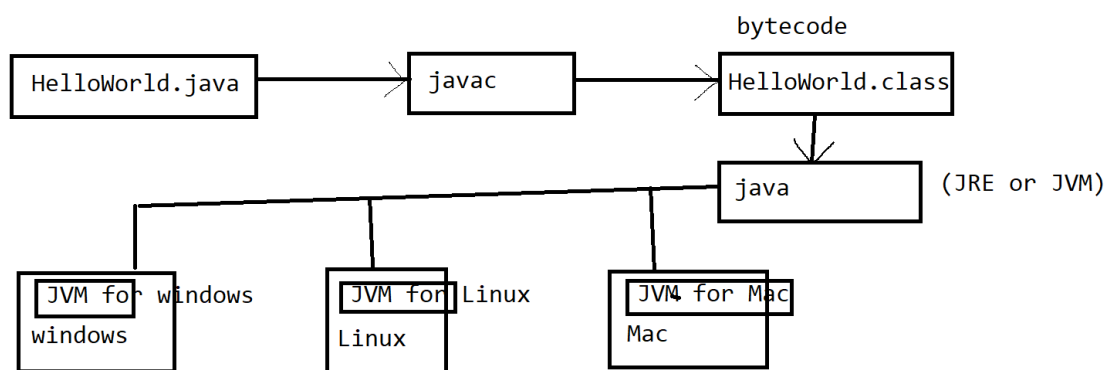
Compile the code

D:\IET\_JAVA\_I\_sept23 >javac HelloWorld.java

To run the code

D:\IET\_JAVA\_I\_sept23>java HelloWorld

**JVM will make your code platform independent**



What is JVM?



```
byte b=2;  
short s=b;      //implicit typecasting  
byte x=(byte)s; //explicit typecasting  
long l=34;  
float f=1;  
String s="Hello";
```

