

# Overview of Java

Shristi Technology Labs

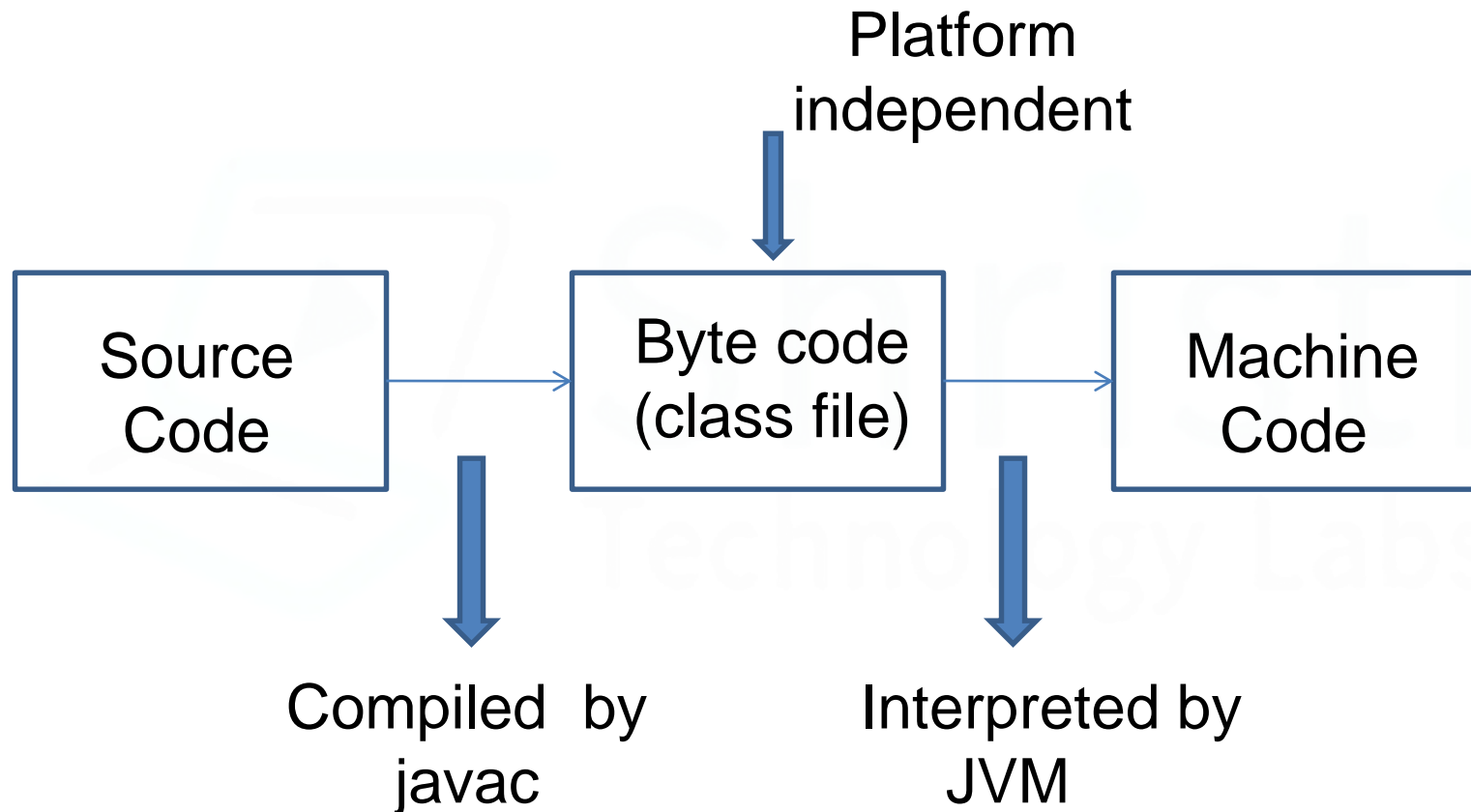
# Contents

- Introduction to Java
- JDK and JRE
- Features of Java
- In-built packages
- Download and install java
- A simple example
- Download and install eclipse

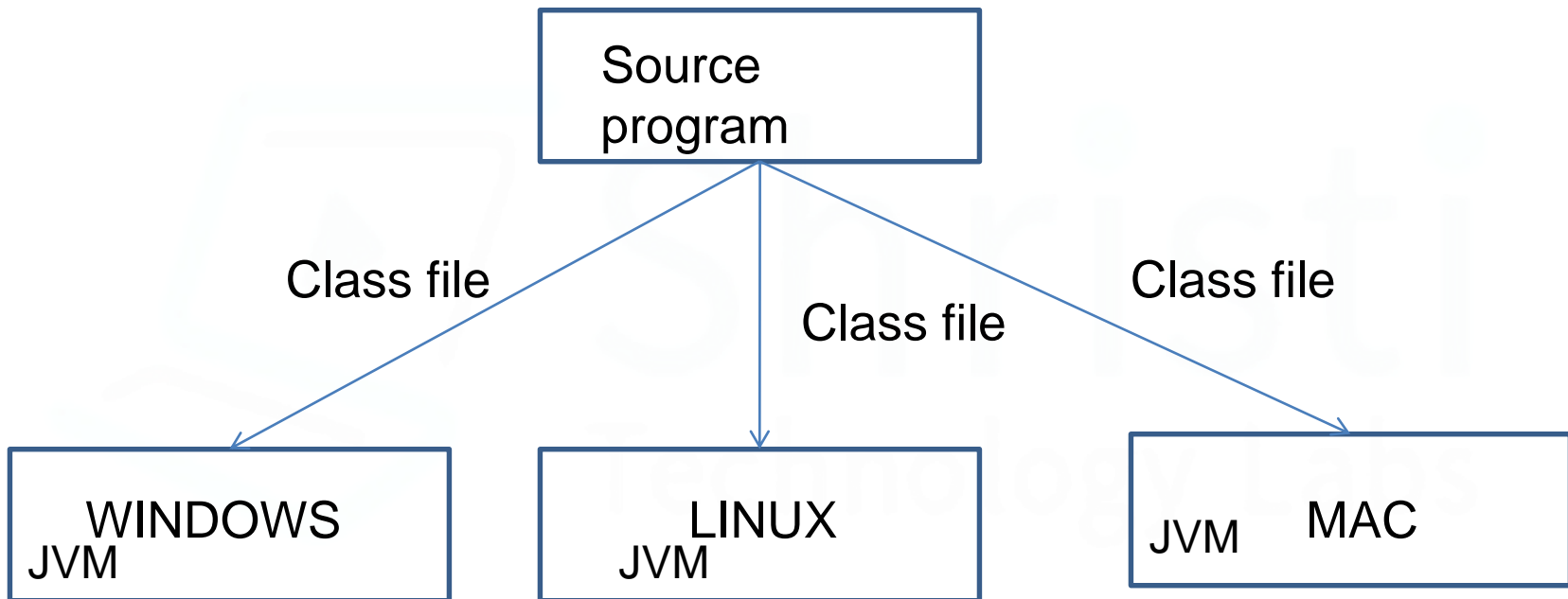
# Introduction to Java

- Object Oriented Programming Language
  - Object, class
- Platform Independent
  - Compiled and interpreted

# Compiled and Interpreted



# Architecturally Neutral Language(WORA)



Write once run anywhere(WORA) - If jvm(JRE) is installed in your machine

# JDK & JRE

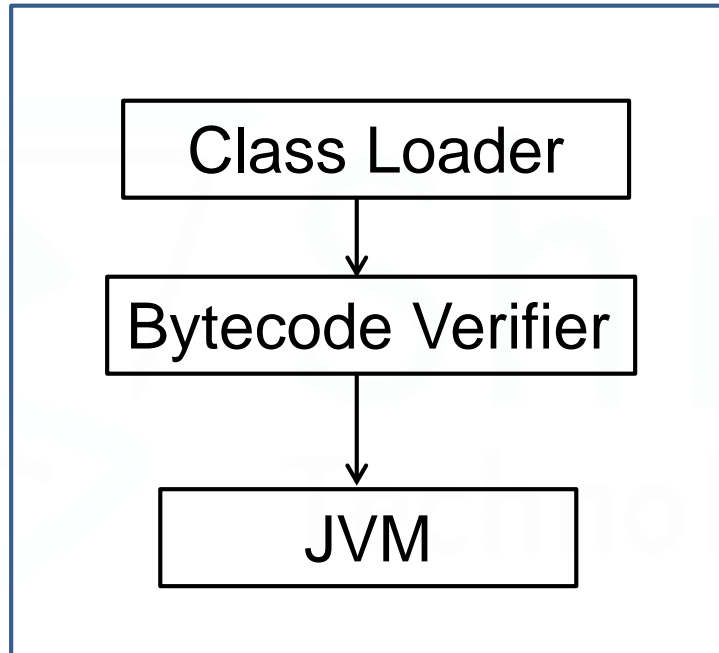
## JDK- Java Development Kit

- Contains tools needed to develop the Java programs
- Has compiler, debugger etc

## JRE- Java Runtime Environment

- Contains the JVM, class libraries, and other supporting files.
- Has a class loader which loads the class for machine code conversion

# Java Runtime Environment(JRE)



# Java Virtual Machine

- JVM is the interpreter of byte code
- differs from platform to platform
- JIT compiler a part of JVM
- Helps to compile selected portions of bytecode into executable ones
- Done during runtime(where you need runtime checks done during runtime)



# Features of java

- Simple and Secure
- Architecturally neutral Language
- Robust
- High performance
- Dynamic
- Distributed
- OOPS
- MultiThreading

## Simple and Secure

- Easy to learn
- No pointers

## Robust

- Strictly typed language
- Syntax errors captured during compile time

## High Performance

- Faster

## Dynamic

- Link and load libraries and classes during run time

## Distributed

- Remote Method Invocation
- JEE Technologies like EJB and JSP & Servlets

## MultiThreading

- A type of Multi Tasking
- Utilize the idle time of the CPU
- Used for interactive and networked programs
- Program divided into parts(threads)
- Priorities, Round Robin, Timeslice

## OOPS

- Abstraction
- Encapsulation
- Polymorphism
- Inheritance

# Inbuilt Packages

- java.lang
- java.io
- java.util
- java.sql
- java.net

# Download and install java

- Download and install JDK1.8 from <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

# A helloworld Program

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

## Explanation

**public** → can be accessed from anywhere

**static** → can be accessed without creating objects

**void** → no return type

**main** → name of the method

**String args[ ]** → is a String array to get values from command line

**System.out** → is an object of OutputStream

**println** → is a method

# Save, compile and Run

- Open Notepad or any editor and type the program.
- Save this file as Demo.java in any folder (say D:\javaprgms) of your choice
- Open cmd and move to the folder where the java program is saved using  
**cd D:\javaprgms**
- To compile type  
***javac Demo.java***
- A class file gets created in the same folder
- To run the class file type  
***java Demo***

## More...

- A file can have only one public class and any number of classes without public access specifier
- If only classes without public access specifier are there → save in any name
- If it has public class → save in public class name
- To run, use the class having  
**public static void main(String args[])**



# Download and install eclipse

- Eclipse is an IDE, that can be used to develop java applications
- Download eclipse MARS (Eclipse IDE for Java EE Developers) from <http://www.eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/mars2>
- This is a zip file. Extract this to a preferred location.
- Now eclipse is ready to use.

# Quiz

- Java is platform independent
  - True/false
  - True
- JVM is platform independent
  - True/false
  - False
- What type of inheritance does Java support?
  - Simple and Multilevel

# Summary

- What is java ?
- JDK and JRE
- JVM
- Features
- In-built packages
- Download and install Java
- A simple Java program
- Download and install Eclipse

**Thank You**