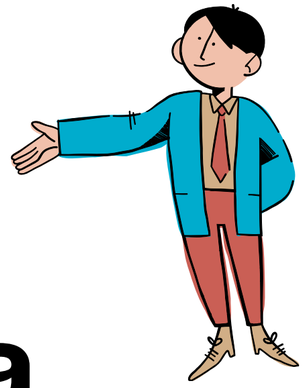
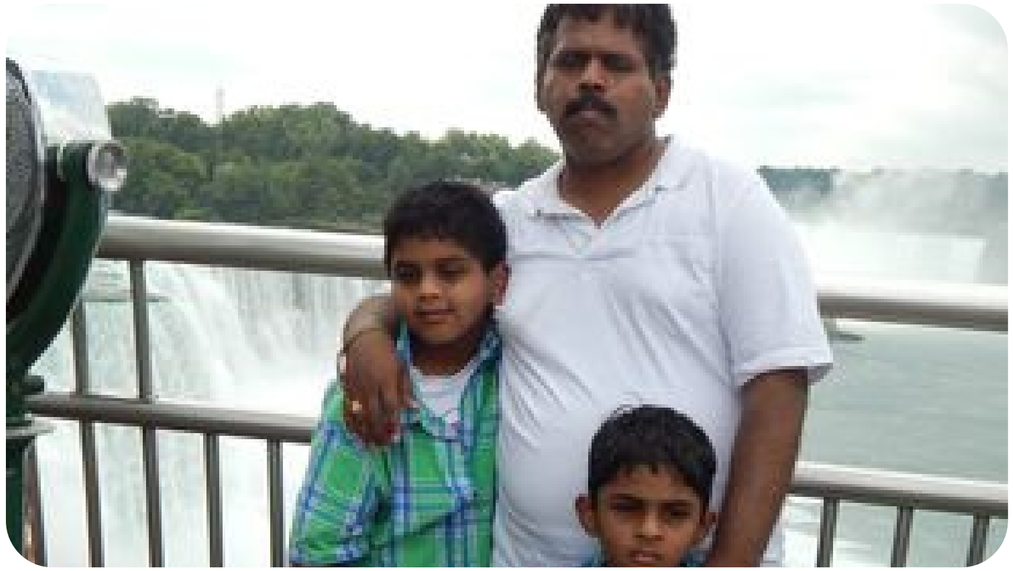
Welcome
Java Full Stack Development Course

Trainer – Achalla Ramakrishna





I am Founder and CEO of a Robotics Edu Startup – Robo Dynamics

We conduct training in robotics, drones, coding, VR etc.

I also conduct training in Object Oriented Technologies for more than 12 years

My areas of expertise is in C, C++, Java, Python, J2EE, Spring, Hibernate, Databases, Design Patterns

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I have got more than 30 years of Software Development Experience

I have worked for corporates like L&T Infotech, Marlabs and also in USA - Citi Group, State Street, Hirezon Corporattion etc.

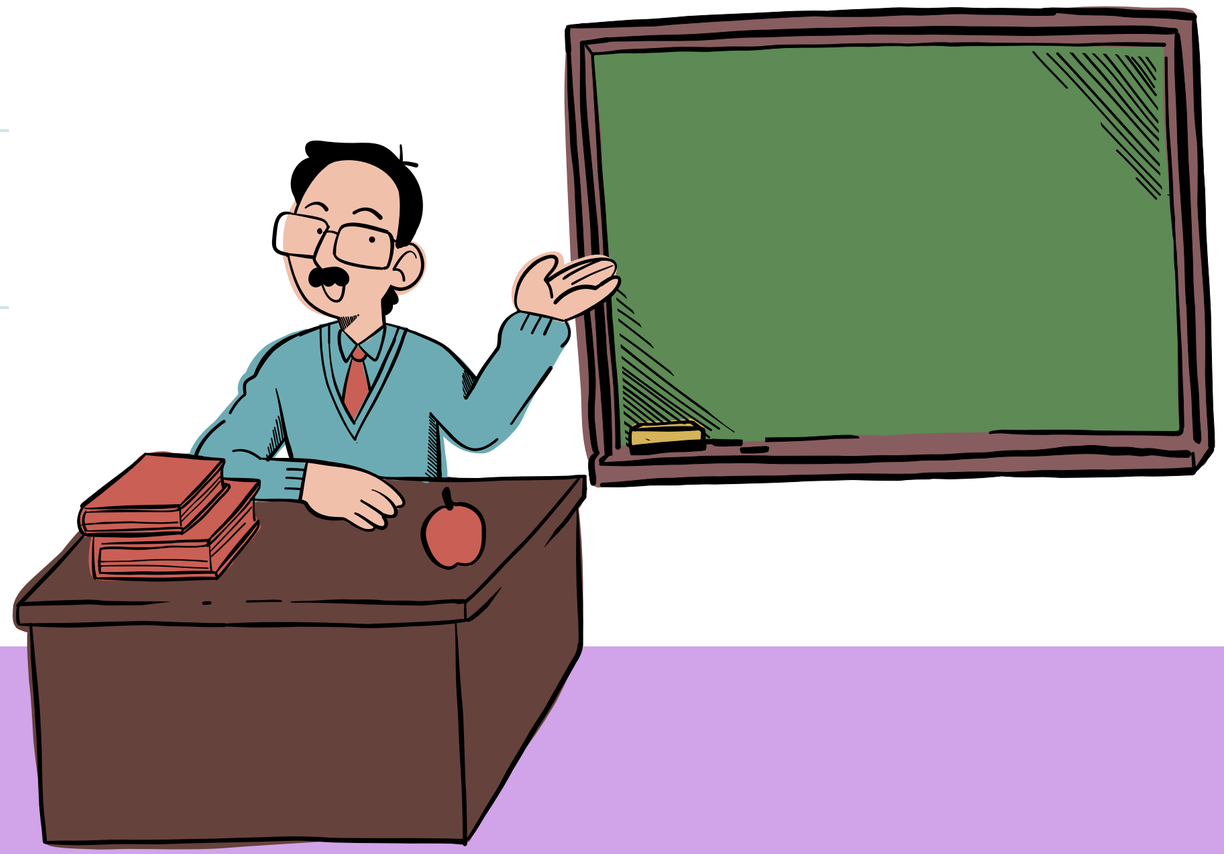
Course Details

This is a freshers induction program , aimed to build Java Full Stack Developers

Module 1: Core Java
Module 2: Java Script Programming
Module 3: Java Web Development using Servlets, Struts etc.
Module 4: Learn Databases and SQL
Module 5: JDBC (Java interface to the world of databases)
Module 6: Spring Framework
Module 7: ORM with Hibernate
Module 8: World of React, a Javascript Framework
Module 9: Programming with SQL (PL./SQL)
Module 10: That’s it, Let’s have some fun !!!

Points to Remember !!!

- **01** Hands On Approach
- **02** Code and Don’t copy
- **03** Help your friends
- **04** Ask Questions
- **05** Be Helpful



What is a Java Program?

Objectives

After completing this lesson, you should be able to

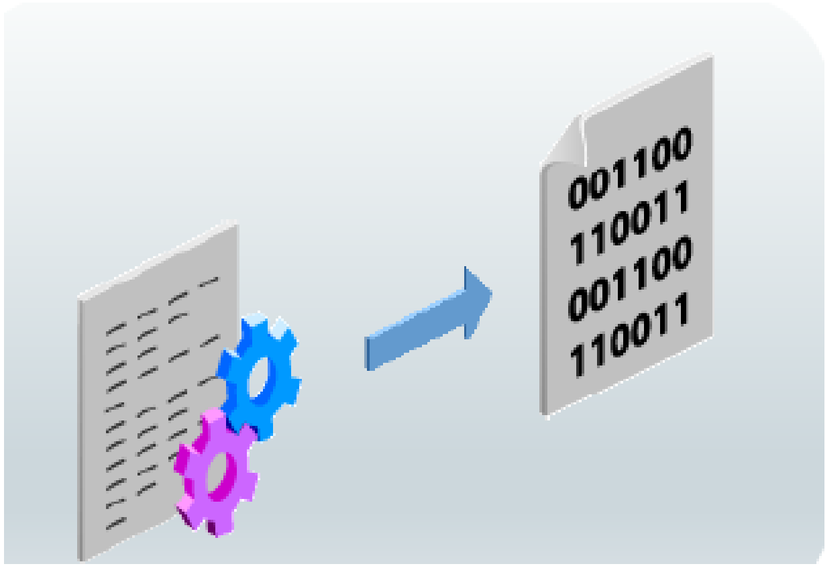
- Contrast the terms “platform-dependent” and “platform-independent”
- Describe the purpose of the JVM
- Explain the difference between a procedural program and an object-oriented program
- Describe the purpose of javac and java executables
- Verify the Java version on your system
- Compile and run a Java program from the command line

Topics

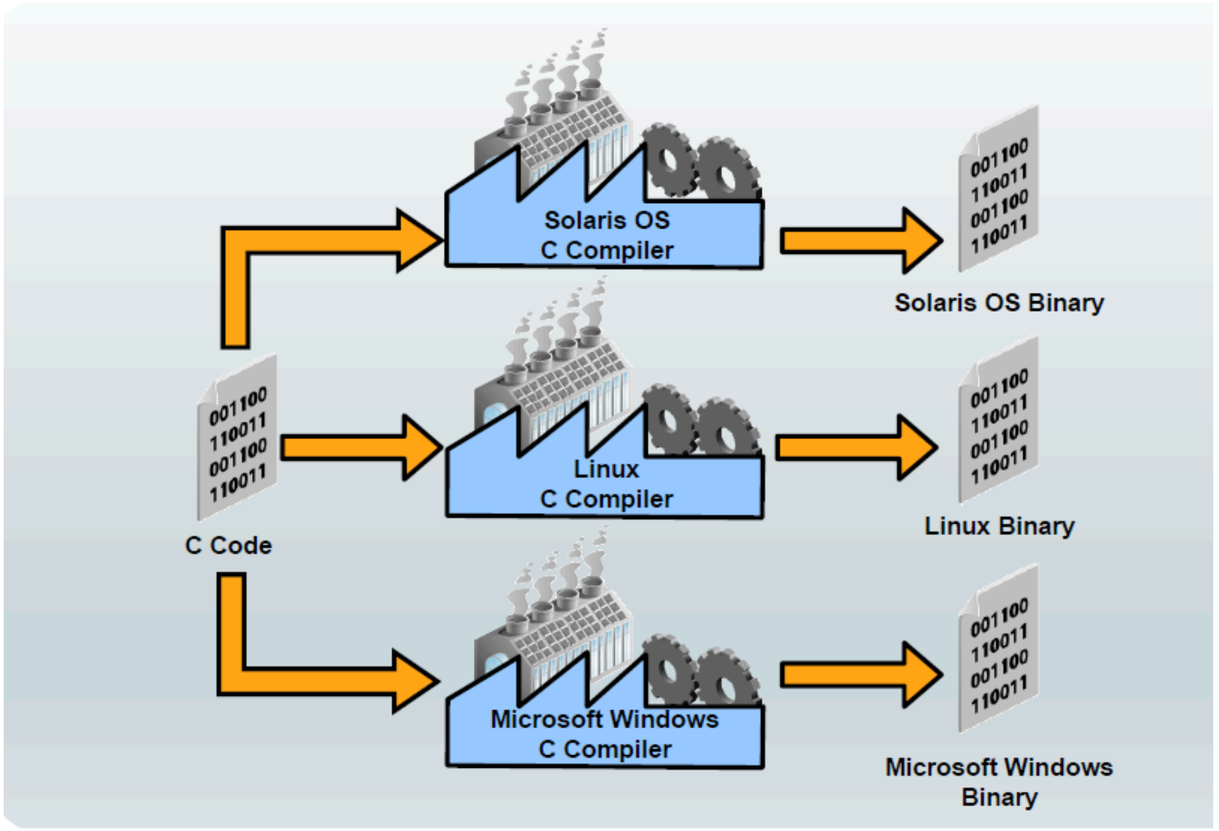
- Introduction to computer programs
- Introduction to the Java language
- Verifying the Java development environments
- Running and testing a Java program

Purpose of a computer Program

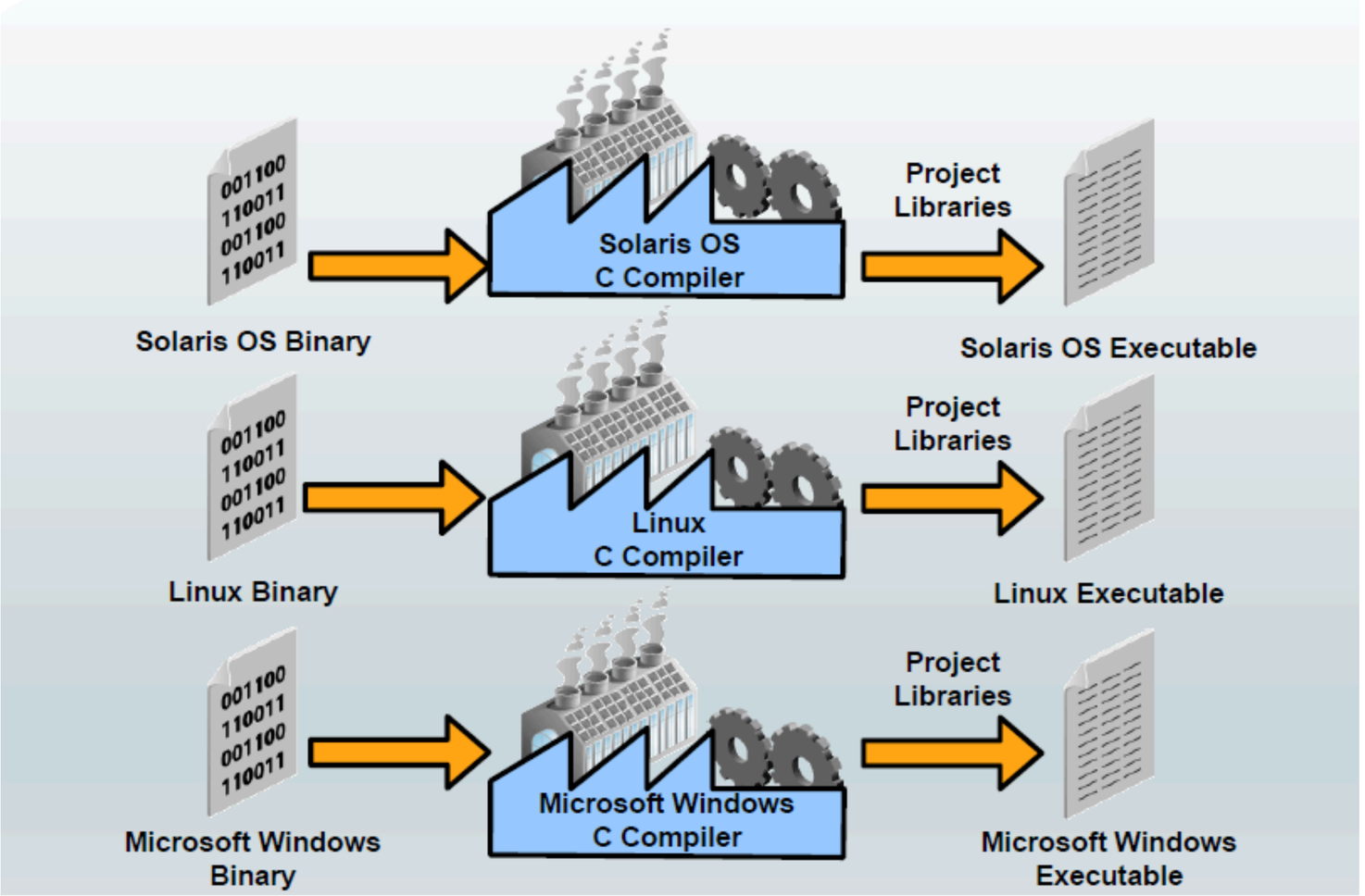
- A computer program is a set of instructions that run on a computer or other digital device.
- At the machine level, the program consists of binary instructions (1s and 0s).
  - Machine code
- Most programs are written in high-level code (readable).
  - Must be translated to machine code



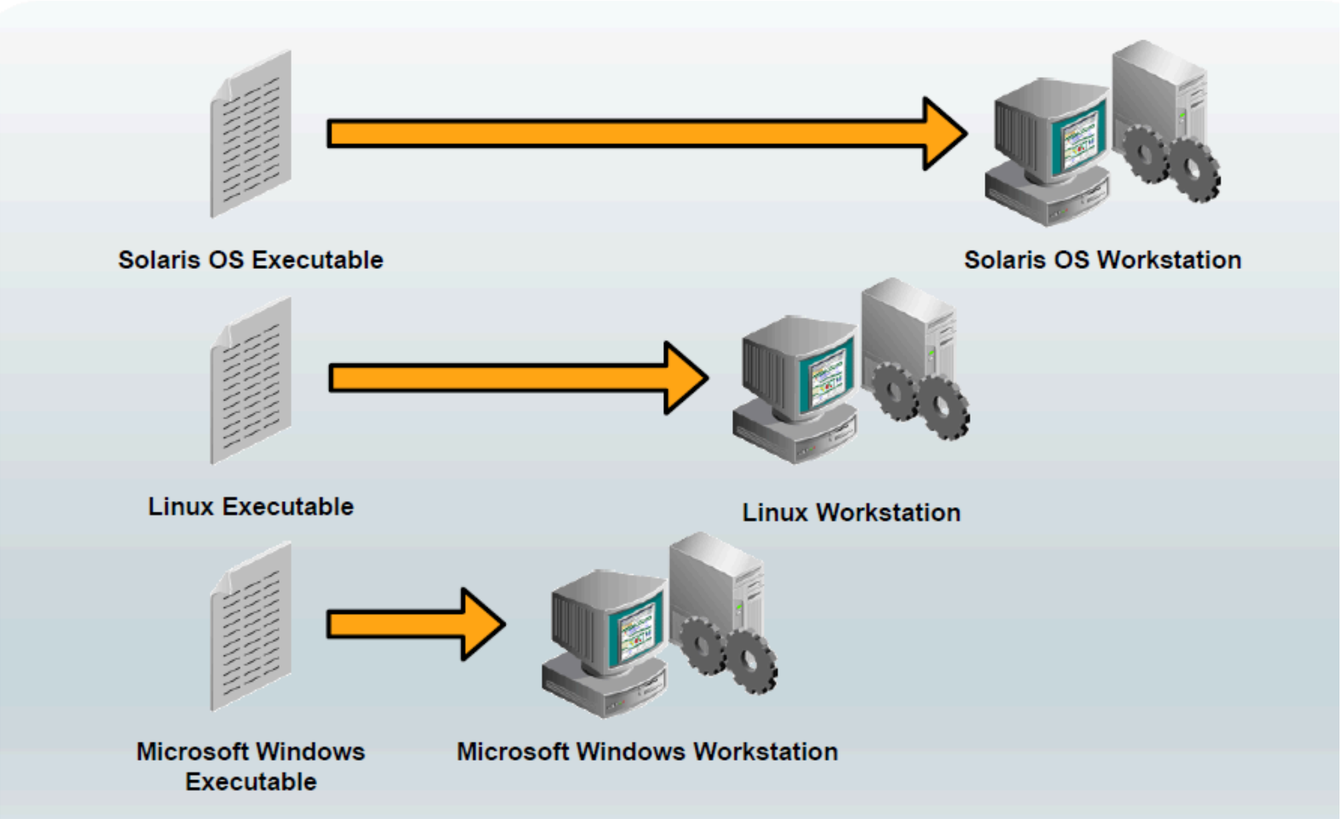
Translating High-Level Code to Machine Code



Linked to Platform-Specific Libraries



Platform-Dependent Programs

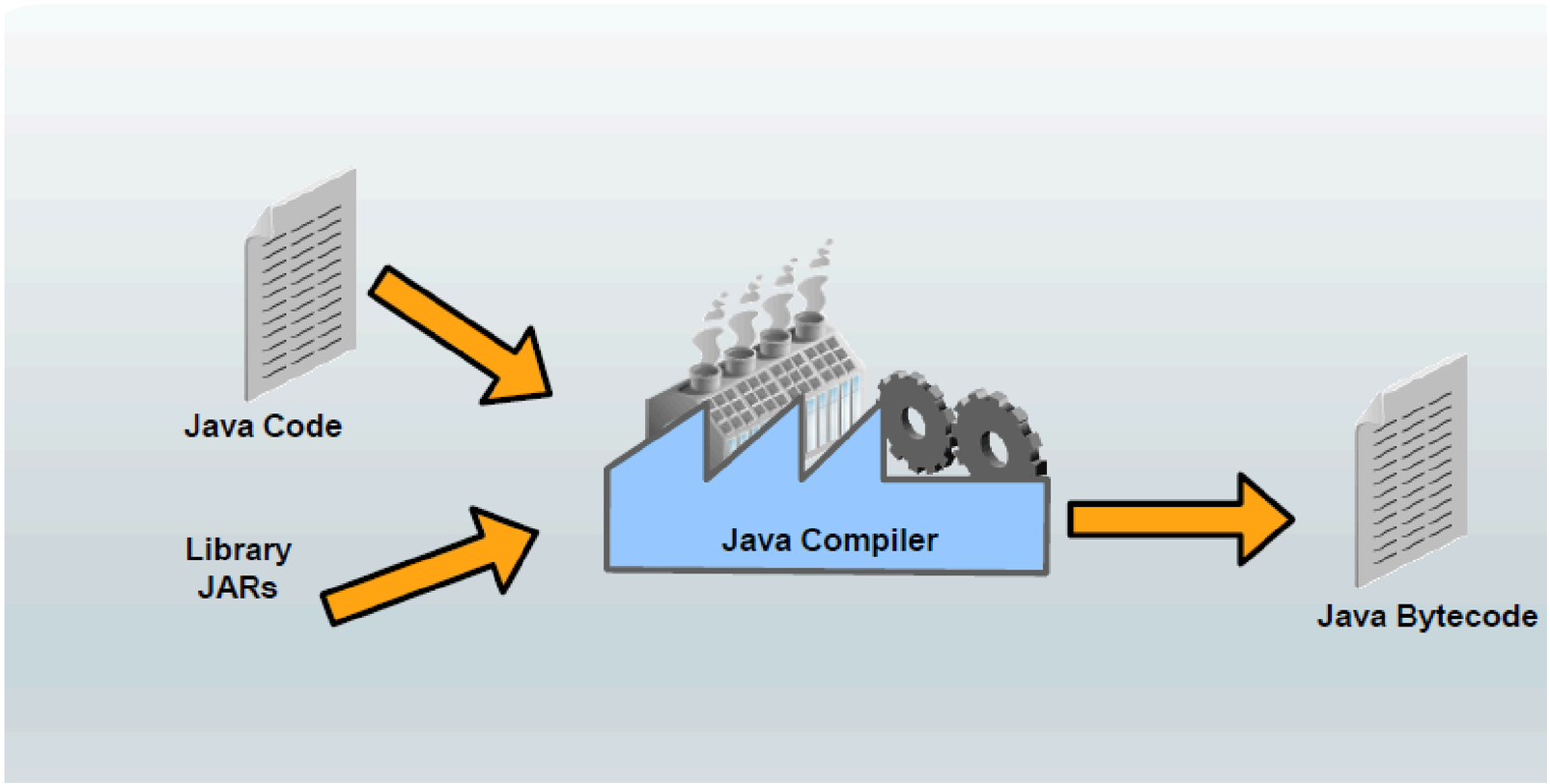


Key features of Java Language

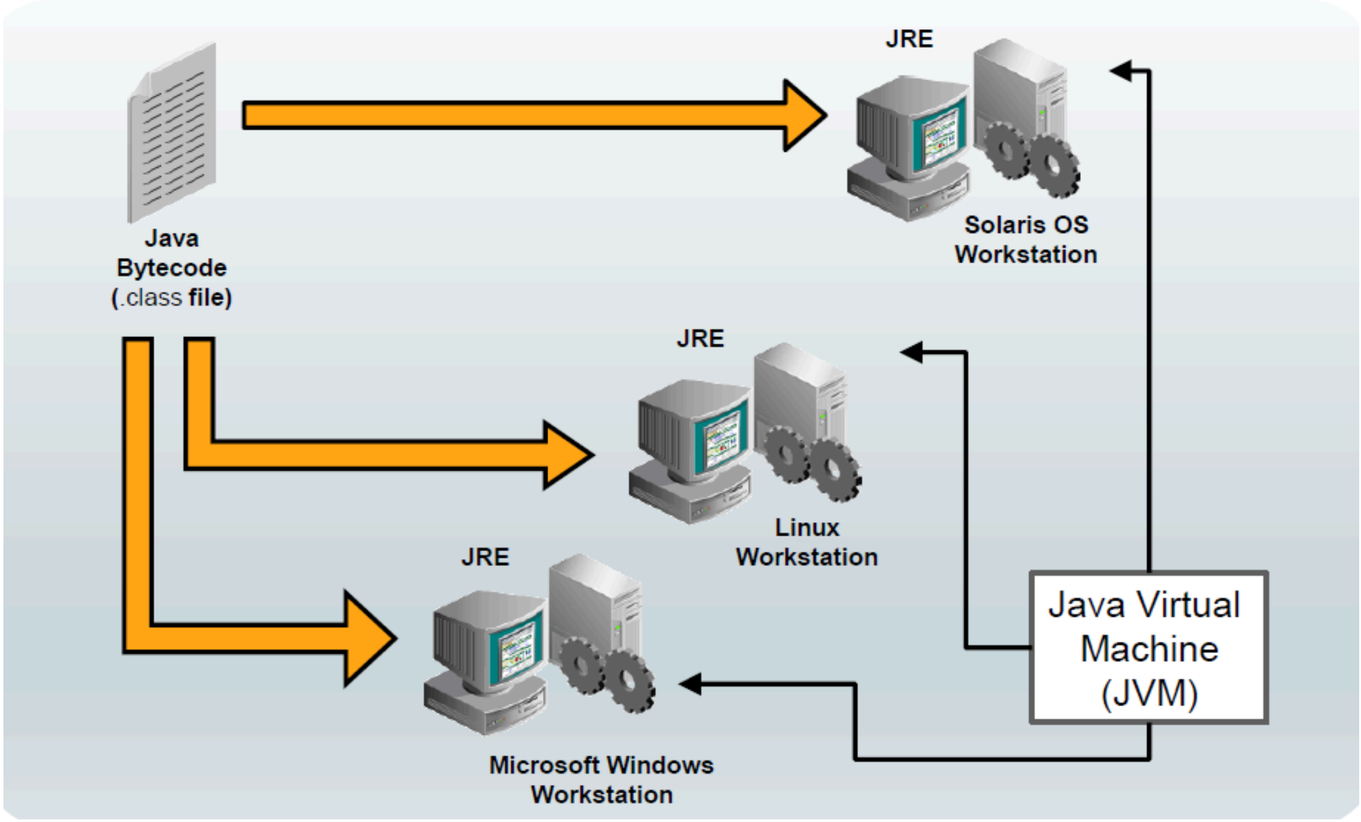
Some of the features that set Java apart from most other languages are that:

- It is platform-independent
- It is object-oriented

Java Is Platform-Independent

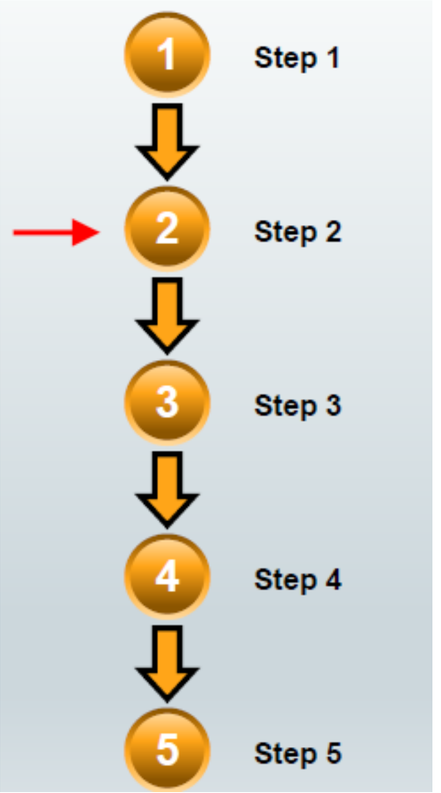


Java Programs Run In a Java Virtual Machine



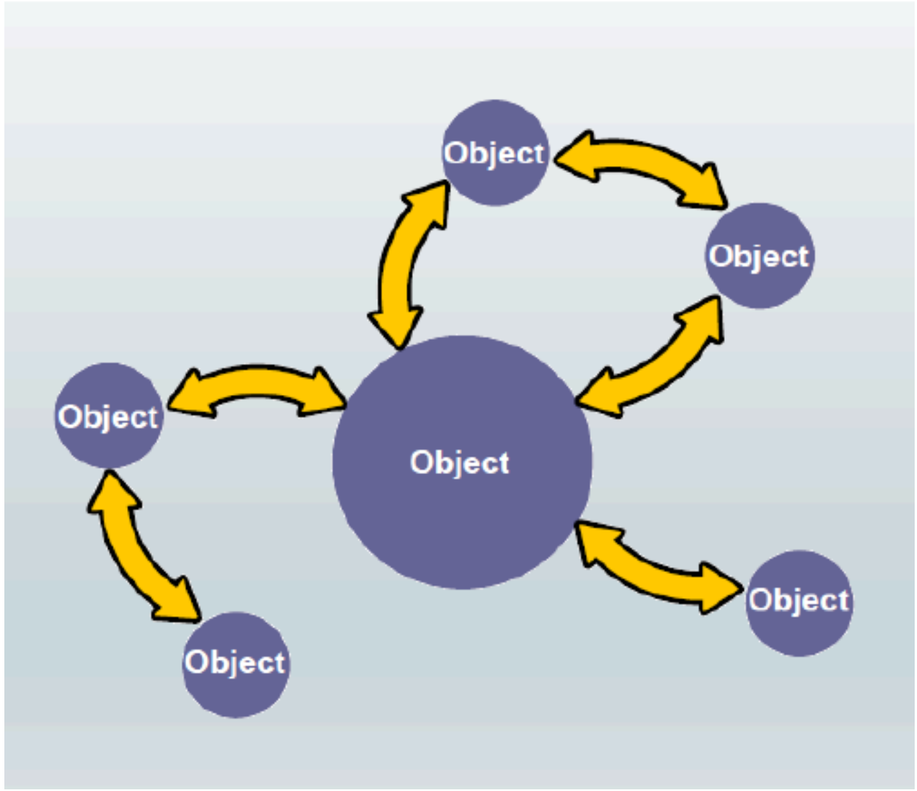
Procedural Programming Languages

- Many early programming languages followed a paradigm called Procedural Programming.
- These languages use a sequential pattern of program execution.
- Drawbacks to procedural programming:
  - Difficult to translate real-world use cases to a sequential pattern
  - Difficult to maintain programs
  - Difficult to enhance as needed



Java Is an Object-Oriented Language

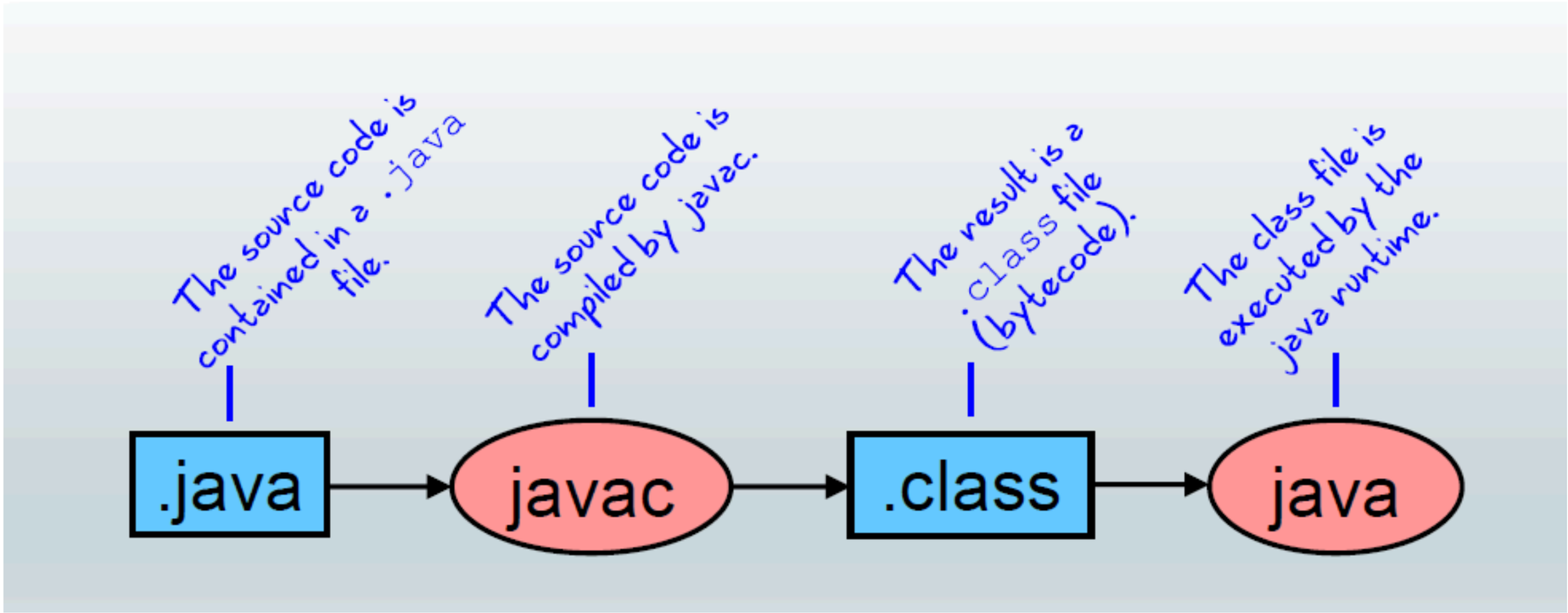
- Interaction of objects
- No prescribed sequence
- Benefits:
  - Modularity
  - Information hiding
  - Code reuse
    - Maintainability



Verifying the Java Development Environment

- Download and install the Java Development Kit (JDK) from oracle.com/java.
- Examine the environment.
- Compile and run a Java application by using the command line.

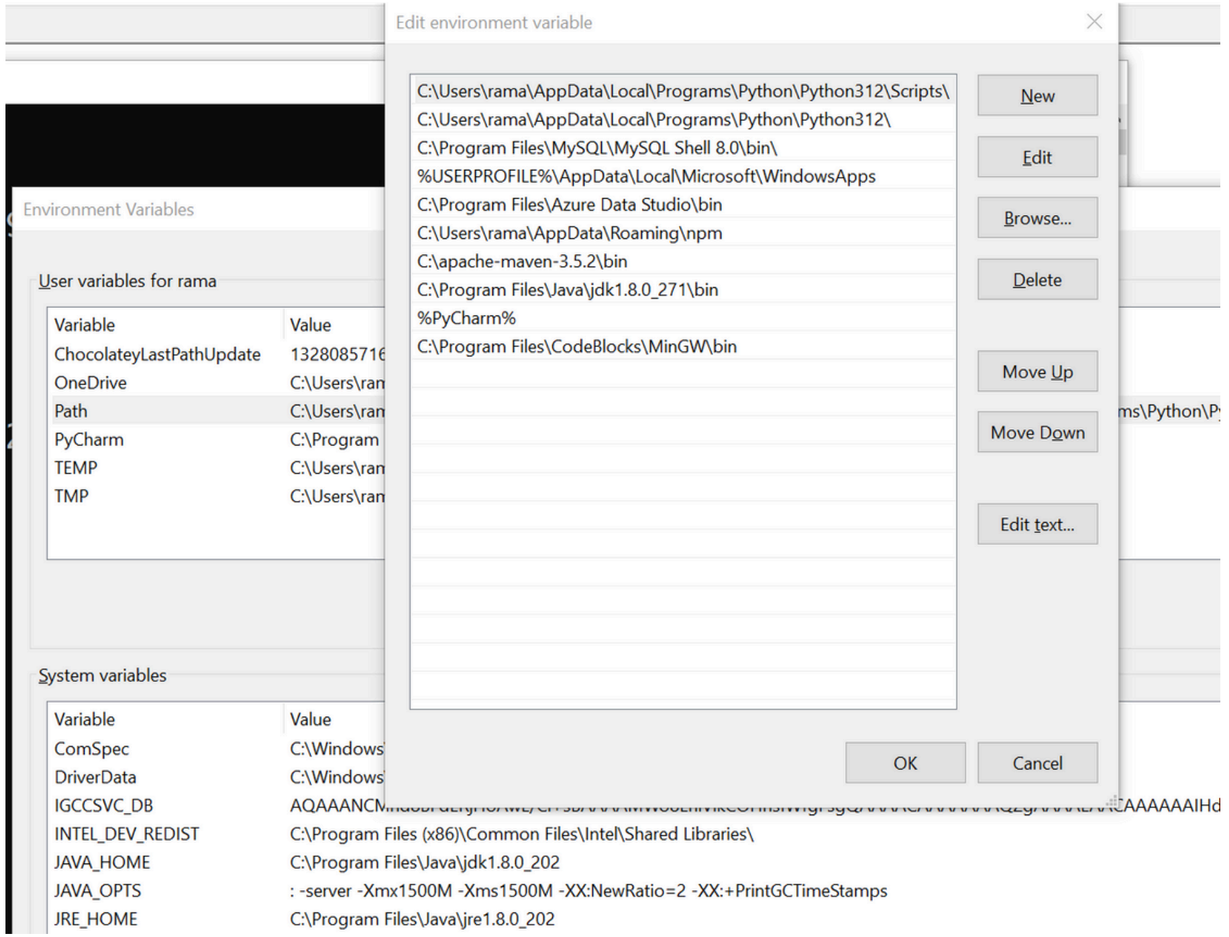
Compiling and Running a Java Program



Verifying the Java Development Environment

```
C:\rd>dir Program.java
 Volume in drive C is OS
 Volume Serial Number is 94D0-3025

 Directory of C:\rd

03/17/2024  05:35 PM               109 Program.java
               1 File(s)            109 bytes
               0 Dir(s)  28,686,270,464 bytes free

C:\rd>javac Program.java

C:\rd>java Program
hello world

C:\rd>
```

Verifying the Java Development Environment



Quiz

- Which of the following is correct? (Choose all that apply.)
  a. javac OrderClass
  b. java OrderClass
  c. javac OrderClass.java
  d. java OrderClass.java

Summary

- In this lesson, you should have learned how to:
  - Describe the distinction between high-level language and machine code
  - Describe what platform-independence means
  - Describe how a Java program is compiled and to what format
  - Explain what it means to say that Java is an object-oriented language
  - Determine the version number of a Java install
    i. Compile and run a Java program from the command line