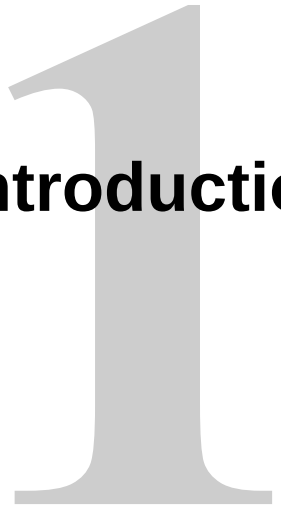


Introduction

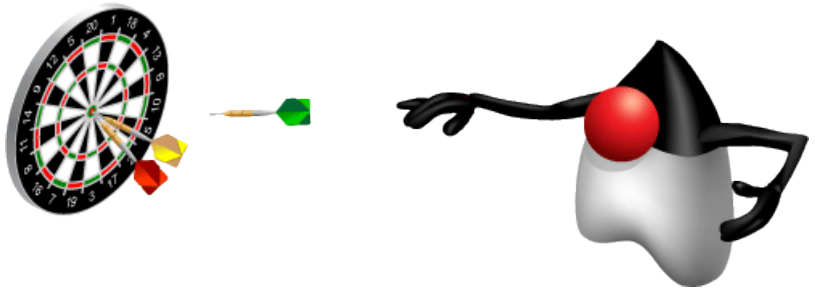
Course Goals

- This course covers the core APIs that you use to design object-oriented applications with Java. This course also covers writing database programs with JDBC.
- Use this course to further develop your skills with the Java language and prepare for the Oracle Certified Professional, Java SE 8 Programmer Exam.

Course Objectives

After completing this course, you should be able to do the following:

- Create Java technology applications that leverage the object-oriented features of the Java language, such as encapsulation, inheritance, and polymorphism
- Execute a Java application from the command line
- Create applications that use the Collections framework
- Search and filter collections by using Lambda Expressions
- Implement error-handling techniques by using exception handling



Course Objectives

- Implement input/output (I/O) functionality to read from and write to data and text files and understand advanced I/O streams
- Manipulate files, directories, and file systems by using the NIO.2 specification
- Perform multiple operations on database tables, including creating, reading, updating, and deleting, by using the JDBC API
- Create high-performing multithreaded applications that avoid deadlock
- Use Lambda Expression concurrency features

Audience

The target audience includes those who have:

- Completed the *Java SE 8 Fundamentals* course or have experience with the Java language, and can create, compile, and execute programs
- Experience with at least one programming language
- An understanding of object-oriented principles
- Experience with basic database concepts and a basic knowledge of SQL

Prerequisites

To successfully complete this course, you must know how to:

- Compile and run Java applications
- Create Java classes
- Create object instances by using the `new` keyword
- Declare Java primitive and reference variables
- Declare Java methods by using return values and parameters
- Use conditional constructs such as `if` and `switch` statements
- Use looping constructs such as `for`, `while`, and `do` loops
- Declare and instantiate Java arrays
- Use the Java Platform, Standard Edition API Specification (Javadocs)

Class Introductions

Briefly introduce yourself:

- Name
- Title or position
- Company
- Experience with Java programming and Java applications
- Reasons for attending

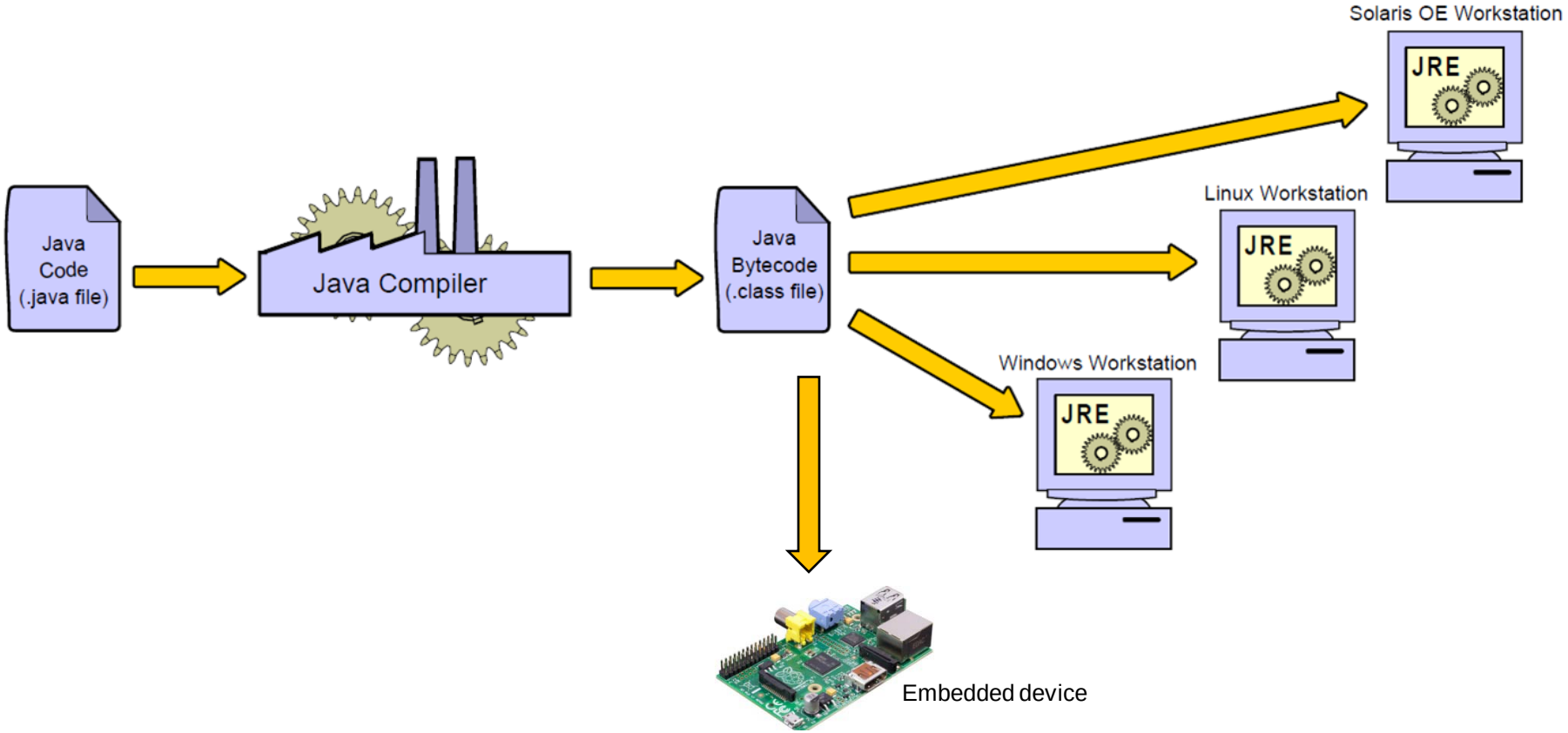
Course Environment

Classroom PC

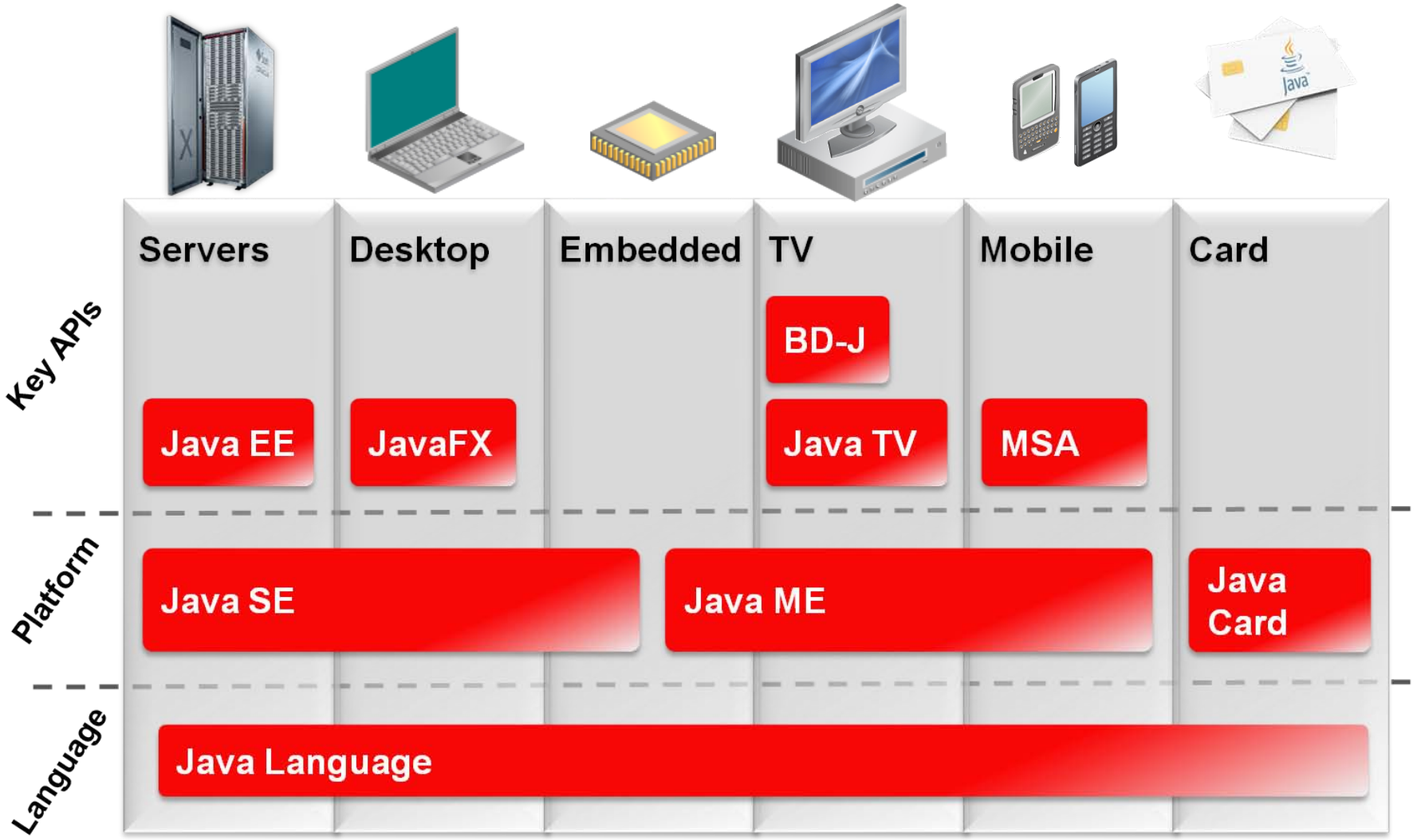
Core Apps
- JDK 8
- NetBeans 8.0

Additional Tools
- Firefox
- Java DB (Derby)
- Oracle Linux

Java Programs Are Platform-Independent



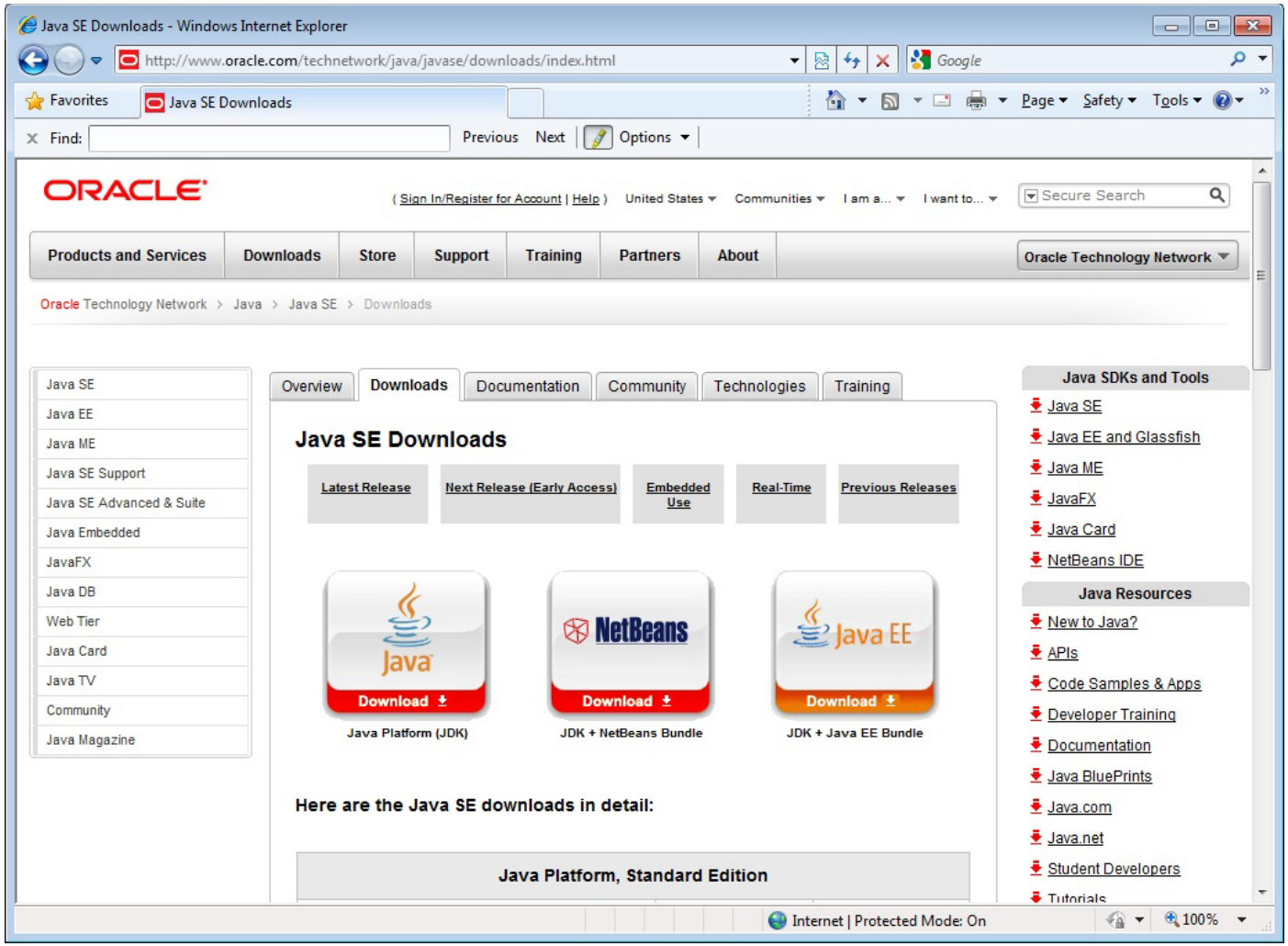
Java Technology Product Groups



Java SE Platform Versions

Year	Developer Version (JDK)	Platform
1996	1.0	1
1997	1.1	1
1998	1.2	2
2000	1.3	2
2002	1.4	2
2004	1.5	5
2006	1.6	6
2011	1.7	7
2014	1.8	8

Downloading and Installing the JDK



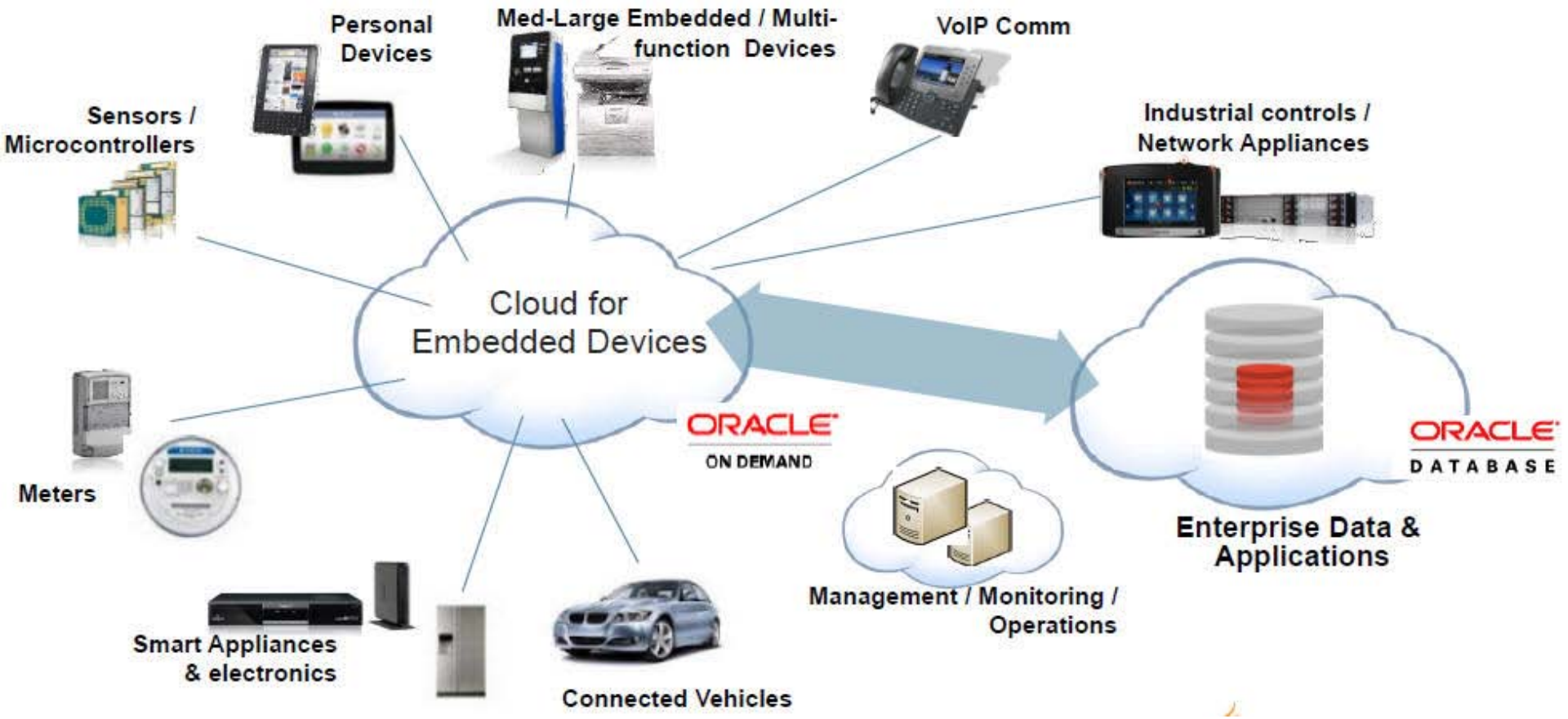
Java in Server Environments

Java is common in enterprise environments:

- Oracle Fusion Middleware
  - Java application servers
    - GlassFish
    - WebLogic
- Database servers
  - MySQL
  - Oracle Database

The Internet of Things

Devices on the “edge” represent a huge growth opportunity.



The Java Community

The Java Community Process (JCP)

The JCP is used to develop new Java standards:

- http://jcp.org
- Free download of all Java Specification Requests (JSRs)
- Early access to specifications
- Public review and feedback opportunities
- Open membership

OpenJDK

OpenJDK is the open-source implementation of Java:

- http://openjdk.java.net/
- GPL licensed open-source project
- JDK reference implementation
- Where new features are developed
- Open to community contributions
- Basis for Oracle JDK

Oracle Java SE Support

Java is available free of charge. However, Oracle does provide pay-for Java solutions:

- The Java SE Support Program provides updates for end-of-life Java versions.
- Oracle Java SE Advanced and Oracle Java SE Suite:
  - JRockit Mission Control
  - Memory Leak Detection
  - Low Latency GC (Suite)
  - JRockit Virtual Edition (Suite)

Additional Resources

Topic	Website
Education and Training	http://education.oracle.com
Product Documentation	http://www.oracle.com/technology/documentation
Product Downloads	http://www.oracle.com/technology/software
Product Articles	http://www.oracle.com/technology/pub/articles
Product Support	http://www.oracle.com/support
Product Forums	http://forums.oracle.com
Product Tutorials	http://www.oracle.com/technetwork/tutorials/index.html
Sample Code	https://www.samplecode.oracle.com
Oracle Technology Network for Java Developers	http://www.oracle.com/technetwork/java/index.html
Oracle Learning Library	http://www.oracle.com/goto/oll

Summary

In this lesson, you should have learned about:

- The course objectives
- Software used in this course
- Java platforms (ME, SE, and EE)
- Java SE version numbers
- Obtaining a JDK
- The open nature of Java and its community
- Commercial support options for Java SE