

# Java Foundations

## About This Course



## Objectives

- This lesson covers the following objectives:
  - Identify course goals and objectives
  - Understand the course environment
  - Describe the course learning strategy



## Course Goals

- Demonstrate knowledge of basic programming language concepts
- Demonstrate knowledge of the Java programming language
- Implement basic Java programming and object-oriented concepts



## Course Goals

- NetBeans
  - A tool used for writing code
  - Installation instructions are provided later
- Java Puzzle Ball
  - A game used throughout the course



## Your Code

- You'll type your code in NetBeans
- NetBeans code looks like this:



```
2  public class HelloWorld {  
3  
4      public static void main(String[] args) {  
5          System.out.println("Hello World!");  
6      }  
7  }
```

## Course Outline

- Section 1: What Is Java?
  - Lesson 1: About This Course
  - Lesson 2: Java: A Brief History
  - Lesson 3: Setting Up Java
- Section 2: Java Basics
  - Lesson 1: The Software Development Process
  - Lesson 2: What Is My Program Doing?
  - Lesson 3: Introduction to Object-Oriented Programming Concepts



# Course Outline

- Section 3: Data Types
  - Lesson 1: What Is a Variable?
  - Lesson 2: Numeric Data Types
  - Lesson 3: Textual Data Types
  - Lesson 4: Converting Between Data Types
  - Lesson 5: Keyboard Input

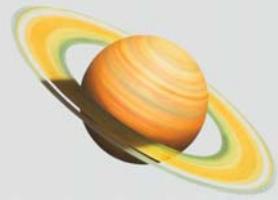


# Course Outline

- Section 4: Important Classes from the Java API
  - Lesson 1: What Is a Method?
  - Lesson 2: The Import Declaration and Packages
  - Lesson 3: The String Class
  - Lesson 4: The Random Class
  - Lesson 5: The Math Class
- Section 5: Decision Statements
  - Lesson 1: Boolean Expressions and if/else Constructs
  - Lesson 2: Conditional Execution
  - Lesson 3: switch Statements

## Course Outline

- Section 6: Loop Statements
  - Lesson 1: for Loops
  - Lesson 2: while and do/while Loops
  - Lesson 3: break and continue Statements
- Section 7: Classes
  - Lesson 1: Creating a Class
  - Lesson 2: Instantiating Objects
  - Lesson 3: Overloading Methods
  - Lesson 4: Object Interaction and Encapsulation
  - Lesson 5: static Variables and Methods



## Course Outline

- Section 8: Arrays, ArrayLists, and Exceptions
  - Lesson 1: Arrays
  - Lesson 2: ArrayLists
  - Lesson 3: Exception Handling
  - Lesson 4: Debugging Concepts
- Section 9: GUI Applications with JavaFX
  - Lesson 1: Introduction to JavaFX
  - Lesson 2: Colors and Shapes
  - Lesson 3: Graphics, Audio, and Mouse Events



## What You Could Do After Taking This Course

- Enjoy creating simple programs
- Appreciate an engineer's perspective
- Take more advanced courses

## Certification

- Consider testing for an Oracle Certification:
  - Exam: Java Foundations (1Z0-811)
  - Credential: Java Foundations Certified Junior Associate

## Summary

- In this lesson, you should have learned how to:
  - Identify course goals and objectives
  - Understand the course environment
  - Describe the course learning strategy

