




## Intro to Programming: Java, Part 1



### How to Take This Course

Complete all the quizzes and the assignment in each unit. Once the quizzes for a unit are complete, you will have access to the unit test. You will have access to the final exam when all of the unit tests are complete, and all the assignments are completed and graded.






All assignments are mandatory, please allow at least **2-3 days for grading**. Read the full course instructions so you understand [how this course works](#).

-  How This Course Works
-  Instructions for the Course
-  Ask The Teacher

### 1. Program Design

In this unit the students will learn:

- The importance of programming and the role that it plays in our everyday lives.
- The success stories of individual who made a significant change in our society by being a coder.
- The different classification of programming languages.
- About the Java programming language and how it works.
- Etiquette and good coding habits one should learn.
- How to setup the Java Development Kit (JDK) and an Integrated Development Environment (IDE) to start coding.

-  1.1 The Importance of Programming
  -  1.1 Quiz
-  1.2 Types of Programming Languages
  -  1.2 Quiz
-  1.3 What is Java?

1.3 Quiz

1.4 How Java Code is Processed by the Computer

1.4 Quiz

1.5 Etiquettes in Programming

1.5 Quiz

Unit 1 Assignment - Integrated Development Environments

## 2. Number Systems and Logic

In this unit the students will learn:

- The importance of the different types of Number System in the Computer Systems.
- The common types of Number Systems: *Binary, Decimal, Octal and Hexadecimal*.
- Number System Conversion: from one number system to another.
- The importance of 'signed' and 'unsigned' numerical values.
- How to create and use a process flow chart in graphically depicting a programming logic.
- The order of operations to solve complex numeric equation that involves several operations.

2.1 The Decimal, Binary and Hexadecimal Number System

2.1 Quiz

2.2 Introduction to Binary

2.2 Quiz

2.3 The Hexadecimal Number System

2.3 Quiz

2.4 Introduction to Octal

2.4 Quiz

2.5 Number System Conversion

2.5 Quiz

2.6 Signed and Unsigned Numbers

2.6 Quiz

2.7 Process Flow Charts

2.7 Quiz

2.8 Order of Operation

2.8 Quiz

Unit 2 Assignment - Numbering Systems

## 3. Basic Java Syntax

In this unit the students will learn:

- The fundamentals of coding and the basic Java syntax.
- How to create their very first Java Program: the "*Hello World*" Program.
- The concept of Methods and how to implement them.
- The habit of adding Comments in your code.

3.1 Setting the Java Development Kit (JDK), Eclipse IDE and The HelloWorld Program

3.1 Quiz

3.2 Introduction to ishell

3.2 Introduction to jshell	3.2 Quiz	<input type="checkbox"/>
3.3 Java Program Structure	3.3 Quiz	<input type="checkbox"/>
3.4 Keywords and Identifiers	3.4 Quiz	<input type="checkbox"/>
3.5 Variables	3.5 Quiz	<input type="checkbox"/>
3.6 Data Types - Primitive Type and Reference Type	3.6 Quiz	<input type="checkbox"/>
3.7 Strings	3.7 Quiz	<input type="checkbox"/>
3.8 Methods in Java	3.8 Quiz	<input type="checkbox"/>
3.9 Passing Simple Parameters in Java Methods	3.9 Quiz	<input type="checkbox"/>
3.10 Commenting - Single-line, Multi-line and JavaDoc	3.10 Quiz	<input type="checkbox"/>
Unit 3 Assignment - Creating your First Java Class		<input type="checkbox"/>

## 4. Operators

In this unit students will learn:

- How to change the data type of a primitive variable using casting operators.
- How to implement the Mathematical operators in Java that is composed of Unary operators and the Arithmetic Operators.
- The use of logical and relational operators for condition checking.
- The use of short-circuit, ternary, assignment and the shot-hand operators for solving programming problems.

4.1 Casting Operator	4.1 Quiz	<input type="checkbox"/>
4.2 Arithmetic Operators	4.2 Quiz	<input type="checkbox"/>
4.3 Relational Operators	4.3 Quiz	<input type="checkbox"/>
4.4 Logical and Short Circuit Operators	4.4 Quiz	<input type="checkbox"/>
4.5 Assignment and Short Hand Operators	4.5 Quiz	<input type="checkbox"/>
4.6 Ternary Operator	4.6 Quiz	<input type="checkbox"/>
Unit 4 Assignment - Practice Programming: The Smallest and Largest Value		<input type="checkbox"/>

## 5. Control Structures

In this unit the students will learn:

- The concepts of flow control structures in Java.
- The different kinds of control flow statements and how to implement them.
- How to apply logical thinking by adding versatility to your program.
- How to give decision-making abilities to your program.

### 5.1 Control Flow Statements - If, If-else, if-else-if and Nested If statements

5.1 Quiz

### 5.2 The switch-case Statement

5.2 Quiz

### 5.3 The Concept Behind Control Loops

5.3 Quiz

### 5.4 The While Loop

5.4 Quiz

### 5.5 The do-while Loop

5.5 Quiz

### 5.6 For Loop

5.6 Quiz

### 5.7 The Break Statement

5.7 Quiz

### 5.8 The Continue Statement

5.8 Quiz

### 5.9 Labeled Breaks and Labeled Continue Statements

5.9 Quiz

### Unit 5 Assignment - Guessing Game

## Final Exam

### Final Assignment - Write a Program to Calculate Weight

Practice Final

Final Exam

**Restricted** Not available unless:

- The activity **Unit 1 Test** is marked complete
- The activity **Unit 2 Test** is marked complete
- The activity **Unit 3 Test** is marked complete
- The activity **Unit 4 Test** is marked complete
- The activity **Unit 5 Test** is marked complete
- The activity **Unit 1 Assignment - Integrated Development Environments** is marked complete
- The activity **Unit 2 Assignment - Numbering Systems** is marked complete
- The activity **Unit 3 Assignment - Creating your First Java Class** is marked complete
- The activity **Unit 4 Assignment - Practice Programming: The Smallest and Largest Value** is marked complete
- The activity **Unit 5 Assignment - Guessing Game** is marked complete
- The activity **Final Assignment - Write a Program to Calculate Weight** is marked complete


## Course Completion

The "Certificate" and "Request a Course Completion Record" links below are not active, they cannot be accessed until you have achieved at least 60% for the course total. Upon satisfying this requirement, the links will become active and you can use them.

Before you go, we would appreciate your opinion on the course, please take 1 minute to complete the feedback form. We hope you enjoyed this course!

 [Course Feedback](#)


Thank you for taking this course! Let us know what you think about it.

 [Request a Course Completion Record](#)

If you need SVHS to send proof of your course completion directly to your school, complete this form.

If you need a hard copy mailed to your school please make a note of this on the form, use the field 'instructions for SVHS'. Don't forget to provide the mailing address of your school.

**Restricted** Not available unless: You achieve a required score in **Course total**

 [Certificate of Completion](#)

**Restricted** Not available unless: You achieve a required score in **Course total**