




## Intro to Programming - Java, Part 2



### 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. We recommend you complete the unit assignment before you attempt the unit test, the assignment will help you prepare. You will have access to the final exam when all of the unit tests are complete, and the assignments are completed and graded.

Allow 2-3 days for an assignment to be graded. Read the full course instructions to understand how this course works and is graded.

-  [Instructions for the Course](#)
-  [How This Course Works and Suggested Timeline](#)
-  [Ask The Teacher](#)

Meet your teacher for this course and ask a question.

### Unit 1 - Arrays

In this unit we will learn:

- What arrays are.
- How to declare, create and initialize an array object.
- How to get the array limits.
- How to copy the elements of an array object to another array using the `System.arraycopy()` method.
- How to use the command line arguments.
- How to declare, create and use an array of arrays (two dimensional arrays).
- The difference between a rectangular and non-rectangular two dimensional array.

#### 1.1 Single Dimensional Arrays

 1.1 Quiz 

#### 1.2 The Command Line Arguments

 1.2 Quiz 

### 1.3 Two Dimensional Arrays

1.3 Quiz



### 1.4 Non-Rectangular, Two Dimensional Arrays

1.4 Quiz



### Unit 1 Assignment - The Mailman Program



## Unit 2. Error and Exceptions in Java

In this unit, you will be exposed to common programming errors, like compile time (AKA Syntax Errors), logical and runtime errors. These errors are normally encountered during the creation of a Java Program, it is important that you do not get frustrated and know how to handle and debug errors using our IDE. You will also be exposed to the Error and the Exception Objects and some of their sub types, we will teach you how to handle them. Lastly, you will learn the use of the assert keyword that is commonly used for testing.

### 2.1 Overview on Java Programming Errors

2.1 Quiz



### 2.2 Debugging your Java Source Code

2.2 Quiz



### 2.3 The Error and Exception Objects

2.3 Quiz



### 2.4 Creating and Declaring Exceptions

2.4 Quiz



### 2.5 Assertion Checks (The assert keyword)

2.5 Quiz



### Unit 2 Assignment - Pythagorean Algorithm



## 3. Classes and Objects

In this unit, you should be able to familiarize yourself with Java's Object Oriented Programming Concepts like Abstraction, Encapsulation, Inheritance and Polymorphism. Grasping them is key to understanding how Java works. Basically, Java OOP concepts let us create working methods and variables, then re-use all or part of them without compromising security.

### 3.1 Introduction to Object-Oriented Programming Concepts in Java

3.1 Quiz



### 3.2 Classes & Objects

3.2 Quiz



### 3.3 Constructors and the Garbage Collector

3.3 Quiz



### 3.4 Encapsulation and Access Modifiers in Java

3.4 Quiz



### 3.5 Inheritance

3.5 Quiz



### 3.6 Overriding Methods

3.6 Quiz



### 3.7 Inheritance and Constructors (Constructor Chaining)

3.7 Quiz



3.8 Polymorphism

3.8 Quiz

3.9 The Static Keyword

3.9 Quiz

3.10 The toString(), equals() and hashCode() methods of the Object Class

3.10 Quiz

Unit 3 Assignment - Ticket App

## 4. Advance Object Oriented Programming (OOP) Concepts and Input/Output Statements

In this unit you will learn the basic to intermediate concepts of Object Oriented Programming and the essential keywords that you need to know to implement them.

4.1 Wrapper Classes

4.1 Quiz

4.2 The Enum Keyword

4.2 Quiz

4.3 The Final Keyword

4.3 Quiz

4.4 The Abstract Keyword

4.4 Quiz

4.5 Interfaces

4.5 Quiz

4.6 How to Accept Inputs from the Keyboard Using GUI Components

4.6 Quiz

4.7 The BufferedReader and InputStreamReader Classes

4.7 Quiz

4.8 The Scanner Class

4.8 Quiz

4.9 File I/O

4.9 Quiz

Unit 4 Assignment - A Vote Consolidation System

## Unit 5: Creating your Java Technology GUI Application

GUI stands for Graphical User Interface.

In this unit you will learn the principles of GUI Programming. Learn how to use the different containers, components and Layout Managers in creating your GUI Application. After creating your GUI Application, you will then learn how to provide the event handling techniques that will provide functionality on your UI components.

5.1 Introduction to the AWT Framework


5.1 Quiz

5.2 Event Handling Techniques

5.2 Quiz

 5.3 Packaging your Java Desktop App to a JAR File

 5.3 Quiz

 Unit 5 Assignment - Creating an RGB Color Calculator


## The Final Exam


Once you have completed all of the unit tests and all of your assignments have been graded, the final exam will become visible.

**Warning:** You have only ONE attempt at the final.

Are you ready to take the final? We highly recommend you take the practice final first and if you are weak in any area, review the relevant course material again. You have unlimited attempts at the practice final, it will help you to prepare.

Good Luck!!

 Final Assignment - Character Counter

 Practice Final

## Course Completion

The "Certificate" and "Request a Course Completion Record" links below are not active, they cannot be accessed until you have completed the final. 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 Transcript](#)

**Restricted** Not available unless: The activity **Final Exam** is marked complete

 [Certificate of Completion](#)

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