



KIDS & TEENS FREELANCING TRAINING INSTITUTE

Kotlin Course Outline

Module 1: What is Kotlin?

- Introduction to Kotlin as a modern programming language
 - Real-life example: Writing apps for Android using Kotlin
 - Why Kotlin is preferred over Java for new Android projects
 - Setting up Kotlin on your computer using IDEs like IntelliJ or Android Studio
 - Activity: Write and run your first “Hello, Kotlin!” program
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Module 2: Variables, Data Types & Operators

- Declaring variables using `val` and `var`
 - Understanding basic data types: Int, String, Boolean, etc.
 - Real-life example: Storing user information in an app
 - Using operators for math and logic
 - Activity: Create a small program to collect and display user data
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Module 3: Control Flow – Making Decisions

- Using `if`, `else`, `when` statements
 - Loops: `for`, `while`, `do-while`
 - Real-life example: Checking login input or calculating quiz results
 - Activity: Build a simple decision-making calculator
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Module 4: Functions and Parameters

- Defining and calling functions
- Using parameters and return values
- Real-life example: Creating a function to calculate BMI or score

- Activity: Write reusable functions and call them from `main()`
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Module 5: Classes and Object-Oriented Concepts

- Understanding classes, objects, and constructors
 - Real-life example: Defining a class for users, books, or products
 - Introduction to inheritance and interfaces
 - Activity: Create and use your own class in a Kotlin program
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Module 6: Collections and Data Handling

- Arrays, Lists, Maps, and Sets
 - Real-life example: Managing a to-do list or contact list
 - Looping through collections and modifying them
 - Activity: Build a contact manager using collections
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Module 7: Null Safety and Error Handling

- Understanding nullable types and the safe call operator
 - Try-catch blocks and exception handling
 - Real-life example: Handling user input or API errors gracefully
 - Activity: Write a program that handles user errors without crashing
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Module 8: Kotlin for Android Basics

- Using Kotlin to build basic Android apps
 - Real-life example: Creating a simple calculator or greeting app
 - Exploring Android Studio layout and Kotlin integration
 - Activity: Build your first Android app using Kotlin
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Bonus Materials

- Kotlin syntax cheat sheet and shortcuts
- Real-world mini projects (BMI calculator, quiz app, to-do app)
- Free resources and IDE installation guides
- Certificate of Completion for Kotlin Programming

