Swift Programming Training Certification Course Outline

Module 1: Introduction to Swift

- First, understand what Swift programming language is.
- Next, install Xcode and set up environment.
- Then, explore Swift syntax and structure.
- Finally, write your first simple Swift program.

Module 2: Variables and Data Types

- First, declare variables using var and let.
- Next, understand Int, Double, String, and Bool types.
- Then, assign and modify variable values correctly.
- Finally, print values using simple print statements.

Module 3: Operators and Expressions

- First, use arithmetic operators for calculations.
- Next, apply comparison operators in conditions.
- Then, use logical operators for decision making.
- Finally, combine expressions to solve problems.

Module 4: Control Flow

- First, write if and else conditions clearly.
- Next, use switch statements for multiple cases.
- Then, apply for loops for repetition.
- Finally, control loops using break and continue.

Module 5: Functions

- First, define simple functions with parameters.
- Next, return values from functions properly.
- Then, call functions with correct arguments.
- Finally, organize code using reusable functions.

Module 6: Collections

- First, create arrays to store multiple values.
- Next, use dictionaries to store key value pairs.
- Then, access and update collection elements.
- Finally, loop through collections efficiently.

Module 7: Optionals

- First, understand why Swift uses optionals.
- Next, declare optional variables properly.
- Then, unwrap optionals using safe methods.
- Finally, avoid crashes by handling nil values.

Module 8: Object Oriented Programming

- First, create classes with properties.
- Next, define methods inside classes.
- Then, initialize objects using constructors.
- Finally, apply inheritance for code reuse.

Module 9: Protocols and Extensions

- First, define protocols for common behavior.
- Next, implement protocols in classes.
- Then, extend existing types using extensions.
- Finally, organize modular and clean code.

Module 10: Error Handling

- First, define errors using enum types.
- Next, throw errors from functions properly.
- Then, catch errors using do catch blocks.
- Finally, handle failures without crashing applications.

Module 11: Introduction to iOS App Development

- First, create a simple iOS project.
- Next, design interface using Storyboard.
- Then, connect UI elements with Swift code.
- Finally, run application on simulator successfully.

Module 12: Certification and Final Assessment

- First, review all Swift programming concepts carefully.
- Next, complete final coding assessment project.
- Then, submit project for evaluation.
- Finally, receive official Swift Programming Certificate.

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