

iOS Developer Program

(5 days – Based on Swift Programming Language)

Day 1:

1. Introductions
 - a. Meet your instructor
 - b. Course overview
2. Lesson 1 : Getting ready with development environment
 - a. Mobile development and cool things first
 - b. Download and install XCode
3. Lesson 2 : Swift playground and XCode know how
 - a. Creating projects
 - b. Getting familiar with development environment, user controls, story board
 - c. Building a simple story board
 - d. Building an app by dropping controls
4. Lesson 3 : UIKit and Swift programming language
 - a. UIAlert, UIButton, UI Label, UITextField
Lab exercise
 - b. UIImageView, UISegmentedControl, UIActionSheet, UIActivityIndicatorView
Lab exercise
 - c. UIStepper, UIWebView
Lab exercise
 - d. UINavigationController, UITabBar
Lab exercise
 - e. UITableViewGrouped, UITableView
Lab exercise
5. Project : Calculator

iOS Developer Program

Day 2:

6. Lesson 6: Swift Programming Language

- a. Variables, Constants
- b. Numbers
- c. Conditional statements, switch, for and while loops

Lab exercise

- d. Functions, arrays

Lab exercise

- e. Dictionaries, Sets

Lab exercise

- f. Tuples and Optionals

Lab exercise

- g. Enumerations, Closures

Lab exercise

- h. Getters and Setters

Lab exercise

7. Lesson 7: Classes and Object Oriented Programming

- i. Classes and Access Levels

Lab exercise

- j. Subclasses and Structures

Lab exercise

8. Project: Payroll Calculator Application

iOS Developer Program

Day 3:

9. Lesson 8: Design Patterns with Swift Programming Language

k. Introduction to Patterns

l. Behavioral patterns

i. Chain of responsibility, Command, Interpreter

Lab exercise

ii. Iterator, Mediator, Memento

Lab exercise

iii. Observer, State, Strategy

Lab exercise

iv. Visitor

Lab exercise

m. Creational patterns

i. Abstract Factory, Builder

Lab exercise

ii. Factory Method

Lab exercise

iii. Prototype

Lab exercise

iv. Singleton

Lab exercise

n. Structural patterns

i. Adaptor

Lab exercise

iOS Developer Program

Lab exercise

ii. Bridge

Lab exercise

iii. Composite, Decorator

Lab exercise

iv. Façade, Protection proxy

Lab exercise

v. Virtual proxy

Lab exercise

10. Lesson 9: Software Architecture and Architectural Patterns

o. What is software architecture

p. Non-functional requirements

q. MVC pattern

r. Importance of APIs and loose coupling

s. Microservices architecture vs monolithic for the Cloud based applications

11. Project: Swift project based on MVC

iOS Developer Program

Day 4:

12. Lesson 10: Swift with backend

- a. Swift applications with backend services
- b. Swift application with json data
Lab exercise
- c. Swift application with parse
Lab exercise
- d. Swift with back-end REST services
Lab exercise

13. Lesson 11: Swift Project

- a. Project work: Event Management
 - i. Invites module
 - ii. Activities module
 - iii. Volunteers module
 - iv. Fund Raising and Donor Management module

iOS Developer Program

Day 5:

14. Lesson 12 : Test driven development:

- a. Writing test cases for swift applications
- b. Lab exercise

15. Lesson 13 : Source code management and Github

- a. XCode and source repository
- b. Source code management checkin and check out, pull requests etc.
- c. Lab exercise

16. What about security

- a. Application Security
- b. Device security
- c. Lab exercise login screen project

17. Conclusion and Next steps