

# **Objective C**

# **Course Contents:**

#### 1. Introduction

#### 2. Programming in Objective-C

- Compiling and Running Programs
- Explanation of Your First Program
- Displaying the Values of Variables

#### 3. Classes, Objects, and Methods

- What is an Object, Anyway?
- Instances and Methods
- An Objective-C Class for Working with Fractions
- The @Interface Section
- The @Implementation Section
- The program Section
- Accessing Instance Variables and Data Encapsulation

#### 4. Data Types and Expressions

- Data Types and Constants
- Arithmetic Expressions
- Assignment Operators
- A Calculator Class

#### 5. Program Looping

- The for Statement
- · The while Statement
- · The do Statement
- The break Statement
- The continue Statement

#### 6. Making Decisions

- The If statement
- The Switch Statement
- Boolean Variables
- The Conditional Operator

#### 7. More on Classes

- Separate Interface and Implementation Files
- Synthesized Access or Methods
- Accessing Properties Using the Dot Operator
- · Multiple Arguments to Methods
- Local Variables
- · The Self Keyword
- Allocating and Returning Objects from Methods



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#### 8. Inheritance

- · Finding Right Methods
- Extension through Inheritance: Adding New Methods
- Overriding Methods
- Abstract Classes

# 9. Polymorphism, Dynamic Typing, and Dynamic Binding

- Dynamic Binding and the id Type
- Compile Time Versus Runtime Checking
- The id Data Type and Static Typing

# 10. More on Variables and Data Types

- Initializing Objects
- Scope Revisited
- Enumerated Data Types
- The typedef Statement
- Data Type Conversions
- Bit Operators

#### 11. Categories and Protocols

- Categories
- Class Extensions
- Protocols and Delegation
- Composite Objects

#### 12. The Preprocessor

- The #define Statement
- The #import Statement
- Conditional Compilation

# 13. Underlying C Language Features

- Arrays
- Functions
- Blocks
- Structures
- Pointers
- They're Not Objects!
- Miscellaneous Language Features
- How Things Work

# 14. Numbers, Strings, and Collections

- Number Objects
- String Objects
- Array Objects
- Dictionary Objects
- Set Objects



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#### 15. Working with Files

- Managing Files and Directions: NSFileManager
- Working with Paths: NSPathUtilities.h
- Basic File Operations: NSFileHandle
- The NSURL Class
- The NSBundle Class

# 16. Memory Management and Automatic Reference Counting

- Automatic Garbage Collection
- Manual Reference Counting
- The Event Loop and Memory Allocation
- Automatic Reference Counting (ARC)
- Strong Variables
- Weak Variables
- @autoreleasepool Blocks

### 17. Copying Objects

- The copy and mutableCopy Methods
- Shallow Versus Deep Copying
- Implementing the <NSCopying> Protocol
- Copying Objects in Setter and Getter Methods

#### 18. Archiving

- Archiving with XML Properties Lists
- Archiving with NSKeyedArchiver
- Writing Encoding and Decoding Methods
- Using NSData to Create Custom Archives
- Using the Archives to Copy Objects

# 19. Introduction to Cocoa and Cocoa Touch

- Framework Layers
- Cocoa Touch

#### 20. Writing iOS Applications

- The iOS SDK
- Your First iPhone Application
- An iPhone Fraction Calculator