

JAVA+ANDROID

CURRICULUM

6 WEEKS

INTRODUCTION TO JAVA

- Understanding Requirement: Why Java
- Why Java is important to the Internet
- JAVA on LINUX Platform

INTRODUCTION TO JAVA VIRTUAL MACHINE

- Java Virtual Machine Architecture
- Class loading process by Classloaders
- Role of Just in Time Compiler (JIT)
- Execution on Engine

AN OVERVIEW OF JAVA AND BUZZWORDS

- Data Types, Variables ad Arrays
- Operators
- Control statements
- Object oriented Paradigms
- Abstraction
- The Three OOP Principles
- (Encapsulation, Inheritance and Polymorphism)

JAVA CLASSES AND OOP IMPLEMENTATION

- Class Fundamentals
- Command Line Arguments
- Learning static initializer
- Declaration on of Objects
- Instance Variable Hiding
- Overloading and Overriding of Methods
- Understanding of Access Controls:
 - Private, Public and Protected
 - Learning Nested and Inner Classes
 - Dynamic method Dispatching
 - Using Abstract Classes

- Using final to prevent Overriding & Inheritance
- Garbage Collection

PACKAGES AND INTERFACES

- Defining a Package
- Understanding CLASSPATH
- Access Protection
- Importing Packages
- Defining and implementing an Interface
- Abstract classes Vs Interfaces
- Generics
- Annotations
- Vargs
- For Each

INTRODUCTION TO ARRAY

- Single dimension array
- Multi dimension array

EXCEPTION HANDLING

- Fundamentals of exception on handling
- Types of exceptions
- Learning exception handlers
- Try and catch
- Multiple catch clauses
- Nested try statements
- Throw, throws and finally

STRING HANDLING

- Learning String Operations
- Learning Character Extraction
- Learning String Comparison
- Understanding of StringBuffer Class

WINDOWS PROGRAMMING

Swing

- Introduction to JFC
- Controls

Event Delegation Model

- Event Classes
- Event Listeners

Applet

- Applet Basics
- Architecture and Skelton
- Simple Applet Display Methods
- The HTML Applet Tag

INTRODUCTION TO EVENT HANDLING

- Event Delegation Model
- Event Classes
- Event Listeners
- Adapter Classes

MULTITHREADED PROGRAMMING

- The Java Thread Model
- **Creating a Thread:**
 - Extending Thread, Implementing Runnable
 - Creating Multiple Threads and Context Switching
- **Synchronization:**
 - Methods and Statement
 - Interthread Communication

MANAGING INPUT AND OUTPUT IN JAVA

- Introduction to I/O streams
- File Handling
- Binary Streams
- Character Streams
- Data Streams
- Serialization

COLLECTION API

- Collection Overview
- The Collection Interfaces (List, Set, SortedSet)
- The Collection Classes (ArrayList, LinkedList, HashSet, TreeSet)
- Accessing a Collection via an Iterator
- Working with Maps

ANDROID APPLICATION DEVELOPMENT

OBJECTIVE

- Introduction to Android
- What is Android
- Applications in Android
- Open Handset Alliance
- Android Layers and their Work
- How to Properly Install Android SDK on Your Windows
- Install Android SDK in Windows
- How to create first android mobile app
- Create Android Application
- Android Views
- Buttons and their properties
- EditText Attributes
- CheckBox
- A Custom View
- Radio Button
- Introduction to Services in Android
- An introduction to Text-To-Speech in Android
- Android: Speech To Text
- Android camera application
- Bluetooth
- Wifi
- DATABASE
- PROJECT (EMPLIZONE)
- Company Client relationship and product management
- Project Snapshots

HISTORY OF ANDROID, ANDROID STRUCTURE AND WORKING TECHNOLOGY

- Android OS Architecture
- Android OS version
- SDK installation for Android
- App sound base
- Android process Architecture
- Android Application components.

ANDROID VIEWS

- What are Views
- View and XML Relations
- Views connection with the widgets
- Activity methods and connections
- Layout In flators, views and View Group

ANDROID UI DESIGNING & SERVICES

- Views UI Design
- Fragment and UI Relation, view Reusability and off loading work from main thread.
- Services Structure and its Introduction
- Unbinded and Binded Services with examples
- Approaches for Binding a services

INTENT

- In text Introduction
- Types of Intent with Examples
- Accessing Recognizer Intent (Speech to Text)
- Accessing Implict Intent (camera services)
- Callback Implicit Intent Methods for service data capture
- Services interaction-
 - Text to speech
 - Wifi-service (Managers)
 - Bluetooth Adapter

DATABASE

- Introduction on to types of Database
- Sqlite Database Introduction on
- Sqlite Open Helper and Sqlite Database
- Classes work
- Cursor Opera on and classes
- Cursor Methods
- CRUD Operations
- Database full Structure

PROJECT