

Android Technology

4 Months

Introduction To Mobile Apps

- Why we Need Mobile Apps
- Different Kinds of Mobile Apps
- Briefly about Android

Introduction Android

- History Behind Android Development
- What is Android?
- Pre-requisites to learn Android
- Brief Discussion on Java Programming

Android Architecture

- Overview of Android Stack
- Android Features
- Introduction to OS layers

Deep Overview in Android Stack

- Linux Kernel
- Libraries
- Android Runtime
- Application Framework
- Dalvik VM

Installing Android Machine

- Configuring Android Stack
- Creating Eclipse Environment
- Integrating Android with Eclipse IDE
- Exploring Eclipse IDE

Creating First Android Application

- Creating Android Project
- Debugging Application through DDMS
- Setting up environment
- AVD Creation
- Executing Project on Android Screen

Android Components

- Activities
- Services
- Broadcast Receivers
- Content Providers

Hello World App

- Creating your first project
- The manifest file
- Layout resource
- Running your app on Emulator

Building UI with Activities

- Activities
- Views, layouts and Common UI components
- Creating UI through code and XML
- Activity lifecycle
- Intents
- Communicating data among Activities

Advanced UI

- Selection components (GridView, ListView, Spinner)
- Adapters, Custom Adapters
- Complex UI components
- Building UI for performance
- Menus
- Creating custom and compound Views

Notifications

- Toast, Custom Toast
- Dialogs
- Status bar Notifications

Material Design

- Design Fundamentals Understand and apply the fundamentals of Android design to your app.
- Surfaces Understand how to use surfaces to structure the hierarchy and interaction of elements in an app.
- Bold Graphic Design Understand and apply branding guidelines (including key lines, metrics, fonts, typographic scale, color palette and themes/styles).

Styles And Themes

- Creating and Applying simple Style
- Inheriting built-in Style and User defined style
- Using Styles as themes

Resources and Assets

- Android Resource
- Using resources in XML and code
- Localization
- Handling Runtime configuration changes

Intent, Intent Filters and Broadcast Receivers

- Role of filters
- Intent-matching rules
- Filters in your manifest
- Filters in dynamic Broadcast Receivers
- Creating Broadcast receiver

Receiving System Broadcast

- Understanding Broadcast action, category and data
- Registering Broadcast receiver through code and through XML
- Sending Broadcast

Data Storage

- Shared Preferences
- Android File System
- Internal storage
- External storage

SQLite

- IntroducingSQLite
- SQLiteOpenHelper and creating a database
- Opening and closing a database
- Working with cursors Inserts, updates, and deletes
- Network

Content Providers

- Accessing built in content providers
- Content provider MIME types
- Searching for content
- Adding, changing, and removing content
- Creating content provider
- Working with content files

Services

- Overview of services in Android
- Implementing a Service
- Service lifecycle
- Inter Process Communication (AIDL Services)

Multimedia in Android

- Multimedia Supported audio formats
- Simple media playback
- Supported video formats
- Simple video playback

Location Based Services and Google Maps

- Using Location Based Services
- Finding current location and listening for changes in location
- Proximity alerts
- Working with Google Maps
 - Showing google map in an Activity
 - Map Overlays
 - Itemized overlays
 - Geocoder
 - Displaying route on map

Web Services and WebView

- Consuming web services
- Receiving HTTP Response (XML, JSON)
- Parsing JSON and XML
- Using WebView

Sensors

- How Sensors work
- Using Orientation and Accelerometer sensors
- Best practices for performance

WiFi

- Monitoring and managing Internet connectivity
- Managing active connections
- Managing WiFi networks

Telephony Services

- Making calls
- Monitoring data connectivity and activity
- Accessing phone properties and status
- Controlling the phone
- Sending messages

Camera

- Taking pictures
- Media Recorder
- Rendering previews

Bluetooth

- Controlling local Bluetooth device
- Discovering and bonding with Bluetooth devices
- Managing Bluetooth connections
- Communicating with Bluetooth

Android Application Deployment

- Android Application Deployment on Android Market(Project)