

BCACC03-ANDROID PROGRAMMING

Course Outcome

Upon completion of the course students should be able to:

- Install and configure Android application development tools.
- Design and develop user Interfaces for the Android platform.
- Save state information across important operating system events.
- Apply Java programming concepts to Android application development.

Refreshing Java

- Java introduction
- OOPs Concepts
- Abstract class & Interface
- Exception handling
- Multi threading(Thread class & Runnable Interface)

Android

Introduction to Android

- Why Android?
- Android Run Time
- Android Studio
- Introduction to Gradle

Fundamentals

- Basic Building blocks – Activities, Services, Broadcast

Receivers & Content providers

- UI Components- Views & notifications

- Components for communication -Intents & Intent Filters
- Android API levels(versions & version names)

Application Structure

- AndroidManifest.xml
- uses-permission
- Activity/services/receiver declarations
- Resources & R.java
- Layouts & Drawable Resources
- Activities and Activity lifecycle

Emulator

- Launching emulator
- Editing emulator settings
- Emulator shortcuts
- Logcat usage
- Introduction to Android Device Monitor (ADM)
- File explorer

Intents

- Explicit Intents
- Implicit intents

Basic UI design, Styles & Themes

- Form widgets
- Text Fields
- Layouts

- o RelativeLayout ,TableLayout, FrameLayout,
LinearLayout, Nested layouts
- o [dip,dp,sip,sp] versus px
- o styles.xml
- o drawable resources for shapes,gradients(selectors)
- o Style attribute in layout file

- Applying themes via code and manifest file
- AlertDialogs & Toast\
- Time and Date
- Images and media

Menu

- Option menu And Action Bar(menu in action bar)
- Context menu and contextual action mode
- Popup menu
- menu from xml
- menu via code
- Linkify
- MatchFilter & TransformFilter

Adapters

- ArrayAdapter
- BaseAdapters
- ListView and ListActivity
- Custom listview

- GridView using adapters
- Gallery using adapters
- Android Session and Session management

Content Providers

- SQL
- DML & DDL Queries in brief
- SQLiteDatabase
- SQLiteOpenHelper
- Cursor
- SQLite Programming
- Reading and updating Contacts
- Android Debug Bridge(adb) tool
- Broadcast Receivers
- Services

Notifications

- Alarm
- Via service

Customize

- Toast
- Dialogs
- Tabs
- Animated popup panels
- Grid view

- Spinner
- Thread.
- AsyncTask
- XML Parsing
- Android JSON parsing using Volley
- How to create REST API for Android app using PHP
- Mysql
- Accessing Phone services(Call,SMS)

Fragments

- Introduction to fragments
- Fragments Life Cycle
- Fragments in Activity
- Google Maps V2 using Fragments
- Develop Fragment based UI designs (Fragment Tabs,Listview etc)
- Location based Services
- GPS
- Geocoding
- Network connectivity services
- Sensors(Accelerometer, Gyroscope).
- Using Wi-Fi& Bluetooth.
- Google Cloud Messaging for Android.
- App Widgets.