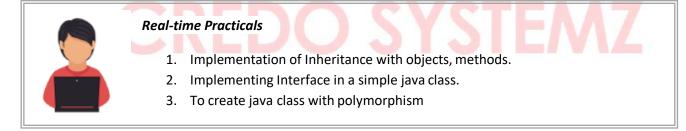**ANDROID TRAINING COURSE CONTENT**

SECTION 1 : INTRODUCTION

- ➢ Android – What it is?
- ➢ History of Android
- ➢ Importance of Java language for Android Apps
- ➢ Other mobile OS-es
- ➢ Android Versions & different development tools

SECTION 2 : JAVA FUNDAMENTALS

- ➢ OOPS basics
- ➢ Classes & Objects
- ➢ Components of a Class
- ➢ Structure of a Class & Java File
- ➢ Inheritance
- ➢ Interfaces
- ➢ Polymorphism
- ➢ Overloading
- ➢ Overriding

Real-time Practicals

1. Implementation of Inheritance with objects, methods.
2. Implementing Interface in a simple java class.
3. To create java class with polymorphism

SECTION 3 : SIGNIFICANCE OF ANDROID PROJECT STRUCTURE

- ➢ Source Folder
- ➢ Generated Folder
- ➢ Assets folder
- ➢ Resources folder
- ➢ Android Manifest XML
- ➢ Gradle file, SDK versions
- ➢ Android Flavours

Real-time Practicals

1. Experience with android studio initial setup, creating new project, folder structure and manifest.

SECTION 4 : ANDROID VIEWS & WIDGETS

- ➢ Button View
- ➢ EditText View
- ➢ TextView View
- ➢ Image View
- ➢ Spinner

SECTION 5 : ANDROID LAYOUTS

- ➢ Layout XML files
- ➢ Absolute Layout
- ➢ Constraint Layout
- ➢ Relative Layout
- ➢ Linear Layout
- ➢ Frame Layout
- ➢ Tab Layout
- ➢ Table Layout
- ➢ List Layout (List View)

Real-time Practicals

1. Design a template with the use of Layouts and views

SECTION 6 : ANDROID ACTIVITY

- ➢ Activities & Fragments
- ➢ Activity Life Cycle
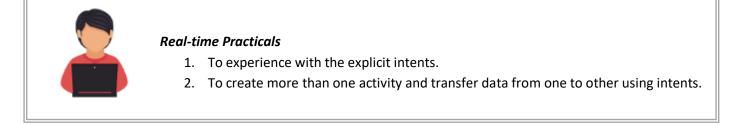- ➢ Activity – How to create your activity

Real-time Practicals

1. To create first activity that follows the activity life cycle.
2. To create an activity with multiple fragments.

SECTION 7 : INTENT & INTENT FILTERS

- ➤ Intents – How and When to use them
- ➤ Intent Objects – Action, Data & Category
- ➤ Intent Filters – Matching Rules / Tests
- ➤ Explicit Intent & Implicit Intent

Real-time Practicals
1. To experience with the explicit intents.
2. To create more than one activity and transfer data from one to other using intents.

SECTION 8 : ADAPTERS

- ➤ Adapters – How and when to use them
- ➤ Array Adapter
- ➤ Base Adapter

Real-time Practicals
1. Implement adapters and its types

SECTION 9 : MENUS & MESSAGES

- ➤ Adding option menus
- ➤ Adding popup menus
- ➤ Showing dialogs
- ➤ Raising toasts

Real-time Practicals
1. Implement Menus and dialogs.

SECTION 10 : BROADCAST RECEIVERS

- ➤ Broadcast Receivers
- ➤ Listening for specified broadcasts
- ➤ System broadcasts
- ➤ Custom & User defined broadcasts

- ➢ Sticky Broadcasts
- ➢ Pending Intents

SECTION 11 : SERVICES

- ➢ Introducing Services
- ➢ Service Life Cycle
- ➢ Implementing Services

SECTION 12 : MATERIAL DESIGN – CONCEPTS

- ➢ Introduction for Material Design
- ➢ Components of Material Design
- ➢ Implementing Services

SECTION 13 : SQLITE – DATABASE ACCESS

- ➢ Introducing SQLite
- ➢ SQLiteOpenHelper and creating a database
- ➢ Opening and closing a database
- ➢ Working with cursors
- ➢ Inserts, updates, and deletes

SECTION 14 : EXTERNAL DATABASE ACCESS USING RESTFUL WEB SERVICE

- ➢ Introduction to AsyncTask Class
- ➢ Progress Dialog
- ➢ RESTful Web service using PHP scripts
- ➢ JSON and JSON Parsers
- ➢ InputStream Reader, BufferedStreamReader and String Buffer uses
- ➢ Adapters

Real-time Practicals

    1.   To Learn about accessing external database, JSON parsing with the help of REST API.

SECTION 15 : BROWSER BASED APPS – WEB VIEWS
- ➤ Simulating Web Browsers inside Apps
- ➤ Enabling Javascript and browser history in Web Views
- ➤ Limitation of WebViews
- ➤ Platform Independence

SECTION 16 : PUBLISH AN ANDROID APPLICATION TO GOOGLE PLAY

- ➤ Account Registration
- ➤ Payment
- ➤ Good coding and design practices
- ➤ Maintenance and experimentation with Categories

Live Project:

    1.   Develop an android application with your own concept and publish it in Google Play.

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