Course Outline Android Development for Newbie

# Overview:

This course outline is intended to empower students with android skills, so that they can develop and application and publish it. During this course I will enlighten students how to make an android application using different components provided by android platform. In the end I will show them how to make an application available on play store.

During this course I will cover all expect of android development and will teach them how to build android application from scratch. I assure that after undertaking this course one can easily make an android application and publish it on play store.

# What will be My Strategy to make this course Effective

* I will have my own slides of each topic in which everything is briefly explained.
* I will share handouts of each session. I will show my students by coding myself in front of them.
* I will share reading material, sample codes, tutorial links and detailed explanation of a workable code of each assignment after deadline is passed.
* I will review the code and resolve the bug of the candidates facing problems.
* I have my own google play store account by using that I will encourage my students to make a nice application so that we can publish it on playstore. The best application made at the end of application will be pushed on play store as an award for that student.

# Prerequisites:

I believe the students are of IT background and know programming basics.

# Detailed Overview and Introduction

* Basic introduction of JAVA, Naming conventions in java, standard code writing techniques
* Basic introduction of XML
* How to Install Android Studio (MAC and WINDOWS)
* What is SDK, NDK, GC, JVM, Build Tools

# Learning Basic Android Components

## Activity

* Introduction to Android XML, Creating Views (TextView, EditText, Button, ImageView, LinearLayout, RelativeLayout, Coordinate Layout so on and so forth)
* What is an Activity, Types of Activity, Modes of Activity, Activity life cycle, how activity is called
* What is an intent, different usages of intent, how to pass data in intent from one activity to another
* Assignment on Activity (Code review and bugs solving)

## Click Events and other Action Events

* How to handle click events
* How to handle long press
* Radio Button clicks
* Checkbox and click events
* Button hovers

## Fragments

* What are fragments and why they are used
* Type of fragments
* Usage of fragments
* Fragment life cycle
* How to pass data from activity into fragment

## List View and Recycler View

* What is a list view
* What is an adapter
* What are recyclerview
* What is a view holder
* Click events on list item and recycler view item
* What is difference between list and recycler view

## Data Storing Methods

* Shared Preferences (why is it used and how it is done)
* File writing on external storage card (why it is used and how0
* SQLite Database (why it is used and how)
* Comparison between shared preference, file writing and SQLite Database storage techniques
* When is to use what and how (I will briefly explain it and show them how to code)
* How to retrieve data, insert, update or delete

## TabLayout, Spinners, Navigation Drawer (Support Design Library)

* How to implements and use tablayout
* How to implements and use spinners
* How to implements and use navigation drawer
* Also I will cover some of the material design support widget lib components.

## Broadcast

* What is a broadcast.
* How to implements it.
* When to use it.
* Different types of broadcasts ( local and system level).

## Services

* What is a service
* What are different types of services
* How to implements it and when and where to use.

## Content Providers

* What are content providers
* Why and when to use
* How to implements it

## How to integrate a third party library

* How to integrate third party libraries
* What are most commonly used libraries
* How to use them
* Why to use them

## Network Request

* What is a RESTful web service
* What is JSON
* What is GSON
* How to use GSON for parsing JSON
* Why we need a json
* What is POST and GET
* What is volley and retrofit

## Google Firebase

* What is a firebase
* Firebase notification and messaging
* Firebase real time database
* Firebase android UI library

## Creating and Publishing a working application

* How to create and login base simple application
* How to publish it on play store
* How to maintain it and update it