teramatrix

Android Assignments

Overview

Here's a collection of android assignments for the android training. Each assignment have its deadline along with the details. It is mandatory to submit the given task in the given timeline. Every submission of assignment must have an APK file, flow diagram and code documentation.
The training program consists of the following topics...

- Android & Android Studio Introduction
- Gradle Project Structure for Android
- Android Manifest & Permissions
- Android R file
- Activity & Fragments
- Views & Layouts
- Intents & Intent Filters
- Shared Preferences
- SQLite Database
- Service & Async Tasks

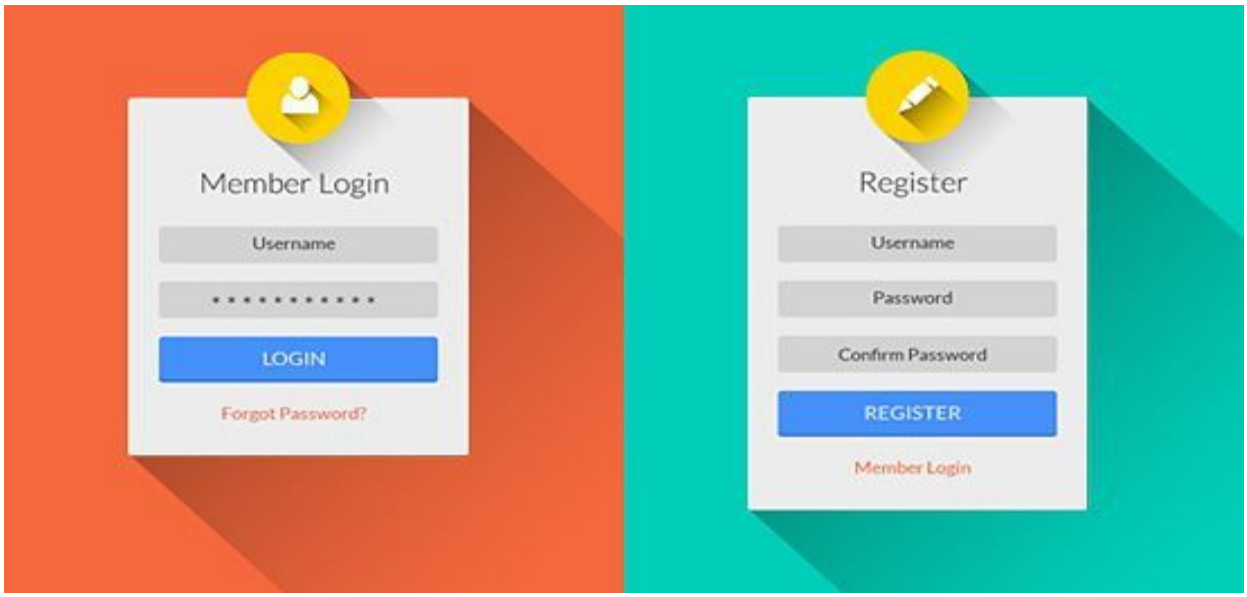
Advance Android Features

- RESTful APIs with JSON
- Google Play Services
- Material Design
- Broadcast Receivers
- Content Providers

All assignments have been designed to cover all the above list.

Assignment 1

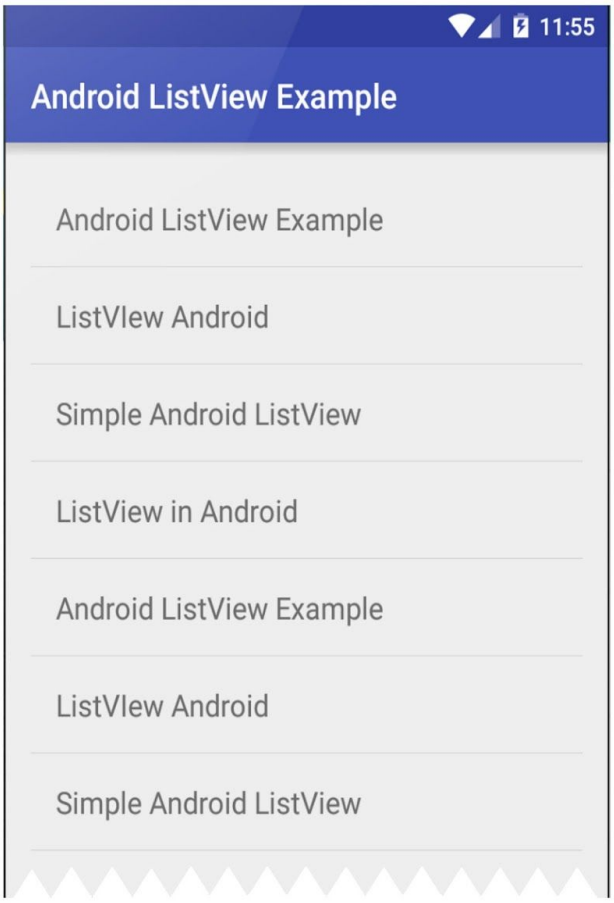
Design Login and Registration screens as designed in the following image.



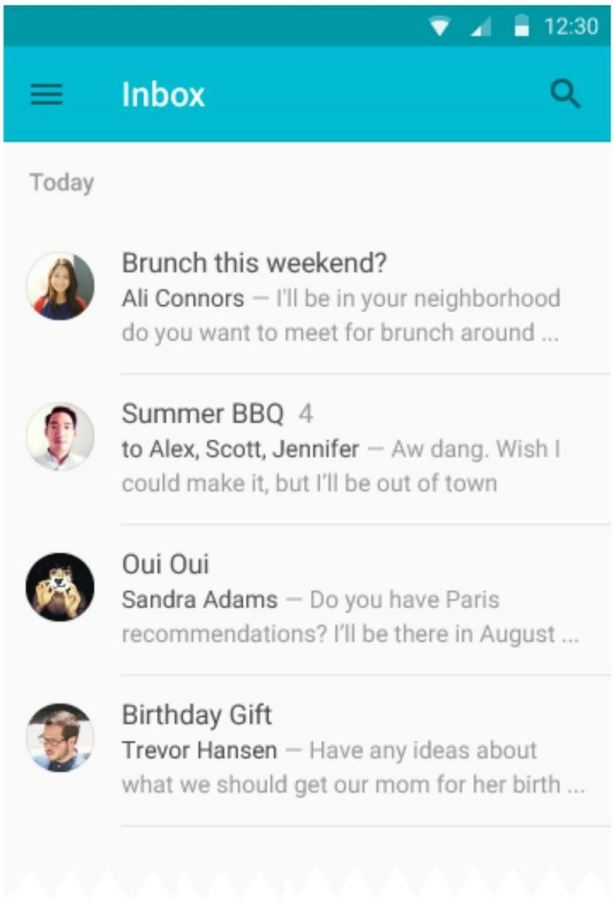
Note that it is just UI design and both screens are separate android activities. Don't use fragments in the screen and redirect app to the home screen after click on login button. Always keep in mind that your UI will be optimised and visible for different screen size.

Assignment 2

Design two lists using android's ListView control. Lists must be similar to the below image. These are two different screens.



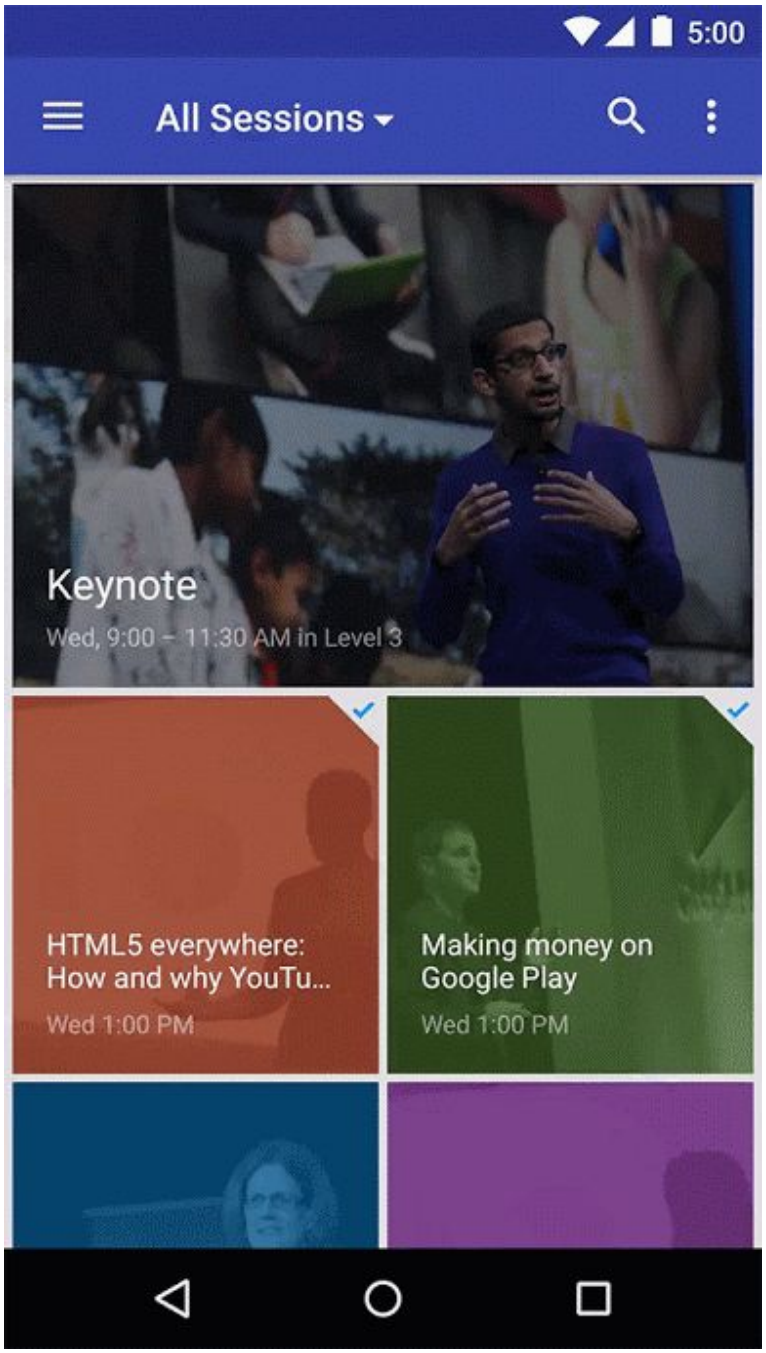
Default ListView



Custom ListView

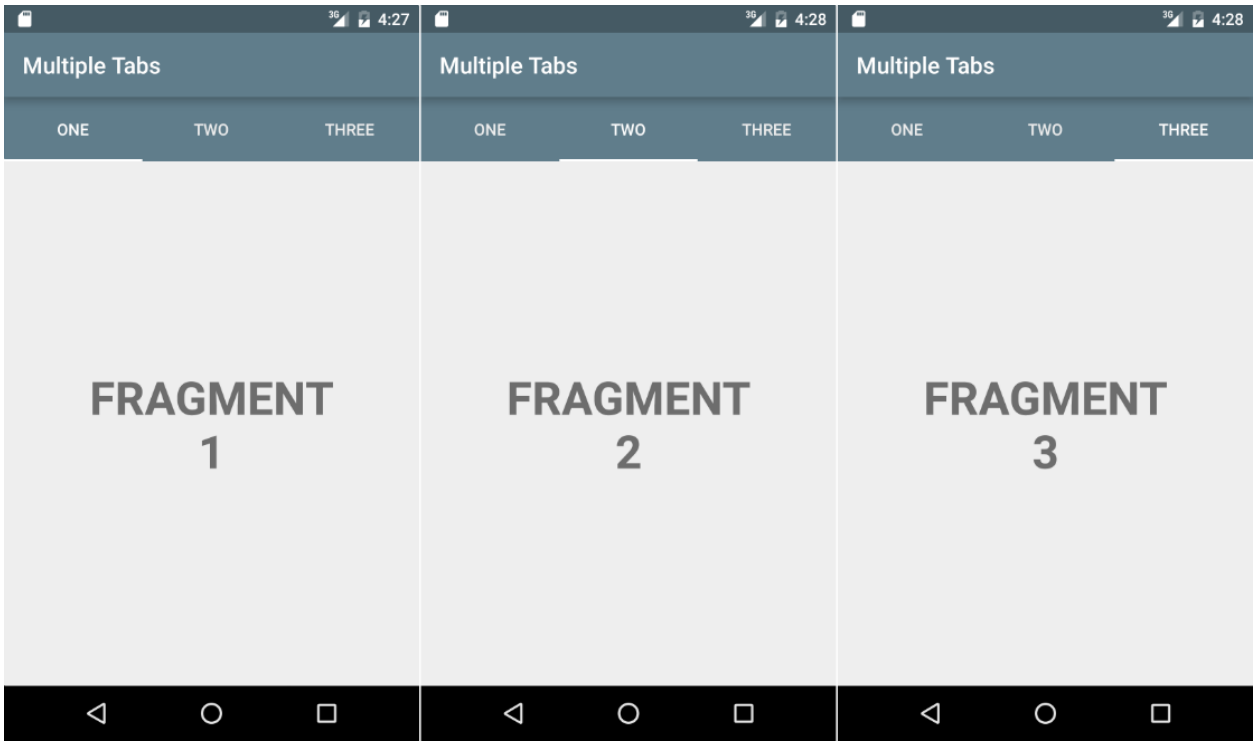
Assignment 3

Design home screen with navigation drawer. Keep in mind that there is only a single activity on which the Drawer is placed and as user clicks on any drawer item, corresponding fragment will be loaded on home screen. Please refer the following screen design for this assignment.



Assignment 4

Create an activity and place ViewPager on it. In the below screen, there is a ViewPager with TabLayout containing three tabs ONE, TWO and THREE respectively.



Assignment 5

Using login and registration form of Assignment 1, make application to register and login user. As user clicks on register button, store data in SharedPreferences and at login screen, match/verify user data with data stored in SharedPreferences. This will be complete login process. And on next startup of application, check whether user is logged in or not. If user is already logged in then redirect to home screen rather than login screen.

For Reference...

1. https://developer.android.com/training/basics/data-storage/shared-preferences.html
2. http://androidexample.com/Android_SharedPreferences_Basics/index.php?view=article_discription&aid=126&aaid=146
3. http://www.tutorialspoint.com/android/android_shared_preferences.htm

Assignment 6

Using SQLite database, perform following operations on local database...

1. Insert
2. Read
3. Delete
4. Update

Every database operation should have its separate screen. For example a form will be designed for insert and delete operations and a list will be there for all record list etc.

Assignment 7

Implement a **GridView** of Images just like android gallery. Images will be downloaded from the server using **AsyncTask**. You can choose any image urls for the app. After click on any grid item, app will be redirected to next screen that will display the particular image in larger view.

Tips : Images should be lesser in size to load quickly. No need to take HD images.

Assignment 8

Play music using android background **Service**. No need to make a rich UI or controls. Just focus on the concept of Android Services. Before implementing service, please read Service LifeCycle carefully.

For Reference...

1. http://www.tutorialspoint.com/android/android_services.htm
2. https://developer.android.com/guide/components/services.html

Assignment 9

Make two HTTP calls of RESTful APIs using third party library **OkHttp**. First call will illustrate HTTP GET request and second must be for HTTP POST request.

For this example you can approach the following APIs...

1. GET Request
   Url http://i.teramatrix.in:668/Api/Route

2. POST Request
   Url http://i.teramatrix.in:668/Api/Global?state=ttpl
   Body token=teramatrix

These both APIs will return data in **JSON** format. Parse this **JSON** into ArrayList or Array of objects whatever you want. Then populate a list using this data model.

Additional : While calling these APIs, you can put a progress bar on the screen to disable user interaction for better user experience.

For Reference...

1. http://square.github.io/okhttp/

Assignment 10

Time to use Google Play Services. Let's begin with **Google Map** that is most widely used play service in android applications. So place a google map on an activity and mark your current location on it just like following image...