**PRACTICAL # 02**

**OBJECT:**

Hello Android Project

**THEORY:**

Android applications are developed using Android SDK, which allows development in Java. Java is an Object Oriented, Cross-platform programming language. Java uses Java Virtual Machine to run its programs while Android applications use Delvik Virtual Machine.

After installing Android Studio, use the SDK Manager to download and install multiple versions of the Android SDK. With multiple versions of the SDK you can also write a version of your app that uses older features. Use the Android Device Manager to set up device emulators.

**Create Android Project:**

In Android Studio, open File → New → New Project

You will be presented with New Project Window, where you can set project name and package name as shown in figure 1.

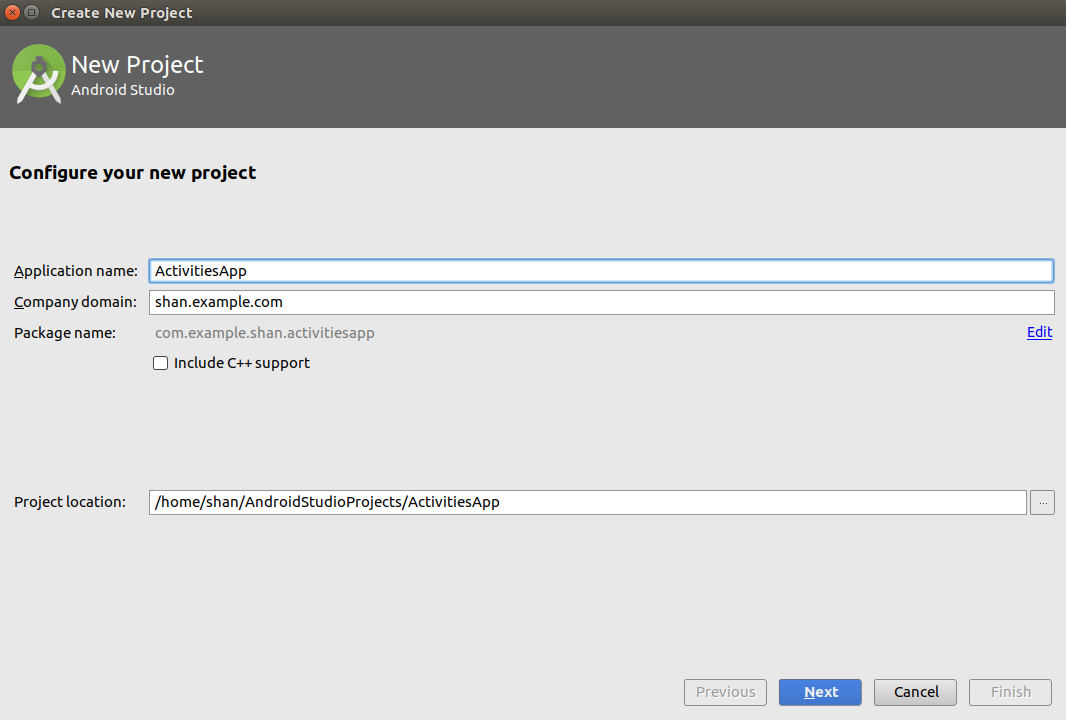


Figure1: Creating new Android project

After clicking next button, you will be asked for the device and Android API level for which you want to develop the application as shown in figure 2.

Here select Phone and Tablet, while any new API level should be selected.

If you want to test application on your android phone, use corresponding API level as of your Phone version.

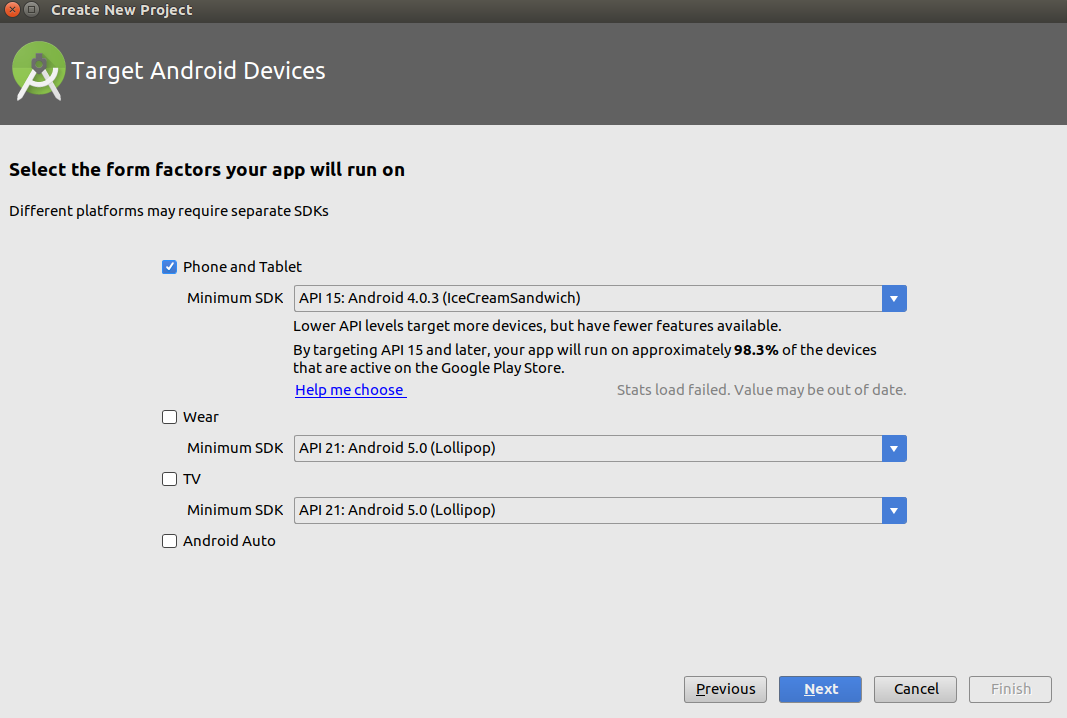


Figure 2: Setting new project target Android version

Next you will be given option to choose one of the predefined activity types as shown in figure 3. The templates include Basic Activity, Empty Activity and so on, or if you don’t want any activity, select Add No Activity option. Select Empty Activity here.

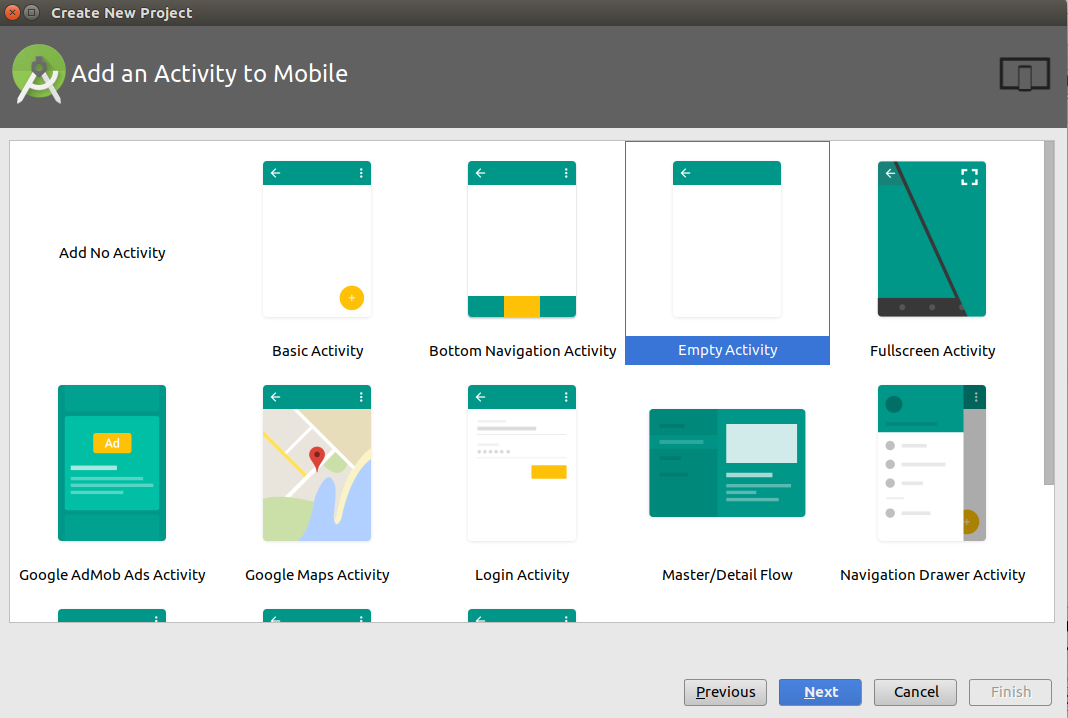


Figure 3: Select initial application layout

Next name this main activity, and its corresponding UI layout component as shown in figure 4.

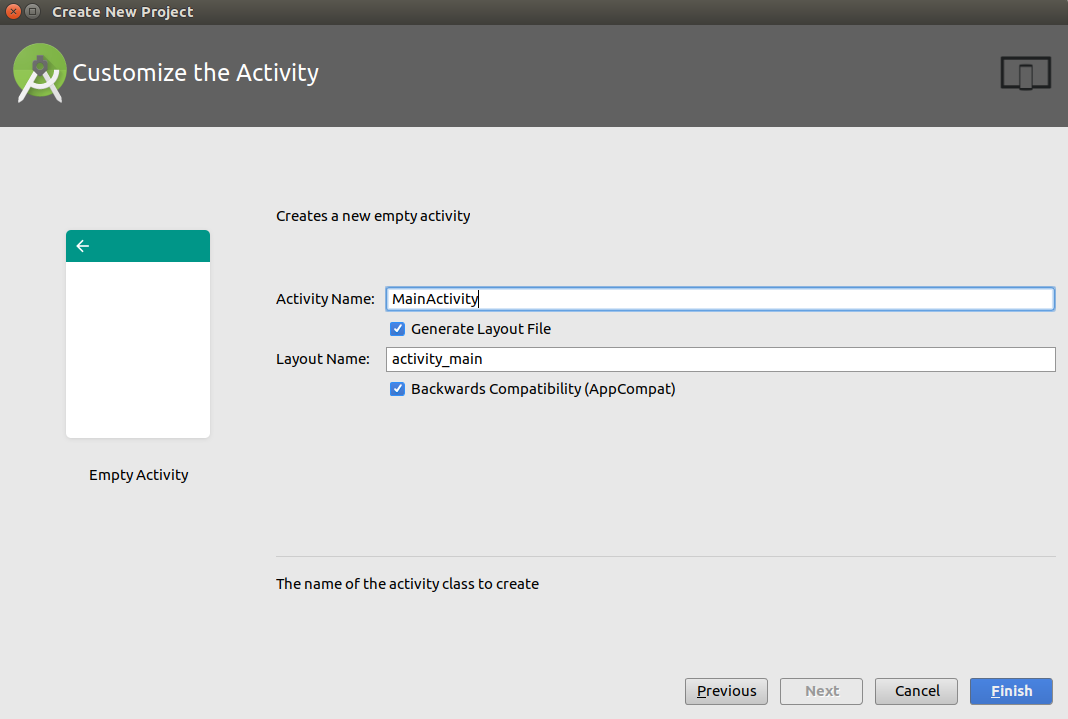
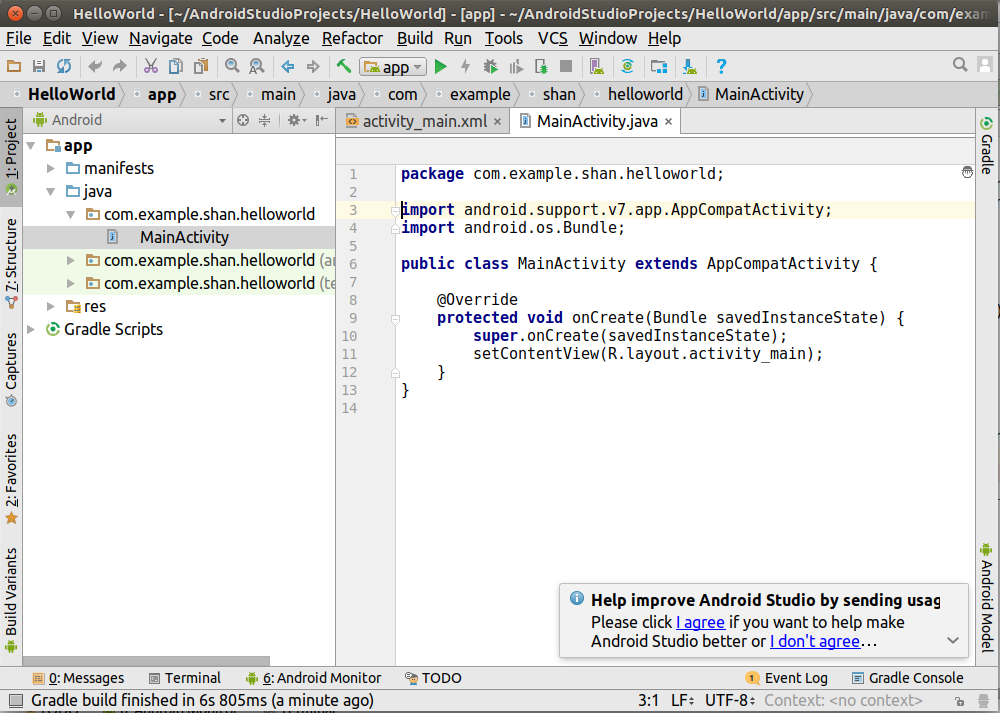


Figure 4: Naming the first activity and corresponding layout file

After finishing the dialog in Figure 4, the Hello World project is created as shown in Figure 5.

Figure 5: Hello World Project

**Android Project Structure**

Activities: The Activities are the main Java classes, that contain the Android code with which we are going to develop, what do we want the application to do.

Layouts: The Layouts are the design files in which the application screen designs are stored. These are xml files containing the Android xml code with which we are going to develop, how will our application views look like.

Values: The variable name values.

Manifests - AndroidManifest.xml

This is the main application configuration file, in XML format

The manifest file (AndroidManifest.xml) specifies:

App’s Activities, Services, etc.

Permissions requested by app

Intent filters

Content providers

Minimum API required

Hardware features required, e.g., camera with autofocus

External libraries to which app is linked, e.g., Google Maps library

**ACTIVITIES**

**Activity 1**

Create a hello world android project. Observe the different components in the project structure as discussed. Also try the break-points for debugging.

**REVIEW QUESTIONS**

1. How do you create a new Android Project?
2. What are the main components in an Android Project?
3. Where the design files put the project?
4. What is the purpose of Android Manifest file?