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# Android_Project_Structure

To implement android apps, Android Studio is the official IDE (Integrated Development Environment) which is freely provided by Google for android app development.

Once we setup android development environment using android studio and if we create a sample application using android studio, our project folder structure will be like as shown below. In case if you are not aware of creating an application using an android studio please check this Android Hello World App.
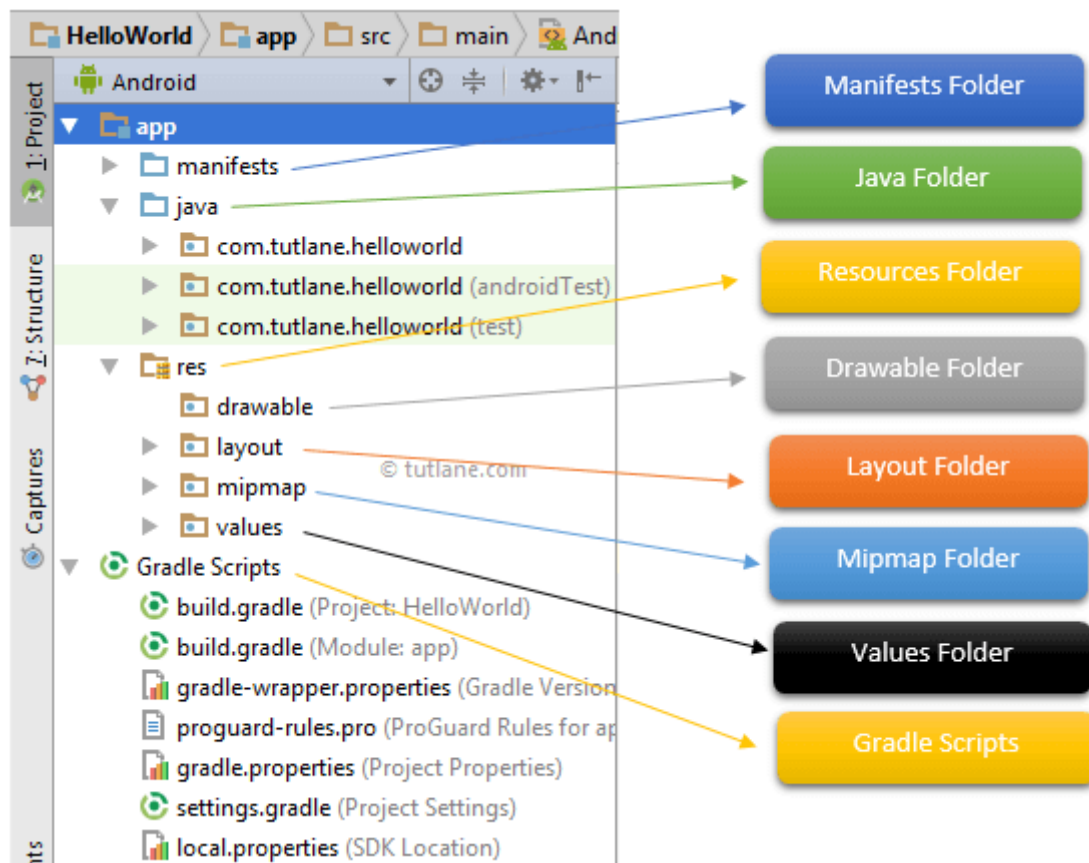
The Android project structure on the disk might be differs from the above representation. To see the actual file structure of the project, select Project from the Project dropdown instead of Android.

The android app project will contain different types of app modules, source code files, and resource files. We will explore all the folders and files in the android app.

## Java Folder

This folder will contain all the java source code (.java) files which we'll create during the application development, including JUnit test code. Whenever we create any new project/application, by default the class file MainActivity.java will create automatically under the package name "com.tutlane.helloworld" like as shown below.
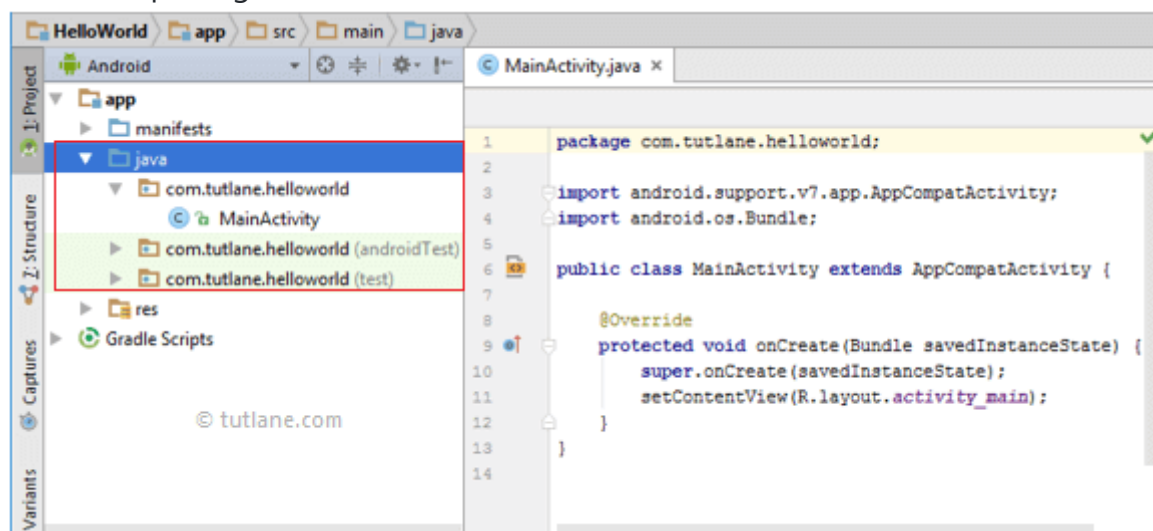
# res (Resources) Folder

It's an important folder that will contain all non-code resources, such as bitmap images, UI strings, XML layouts like as shown below.
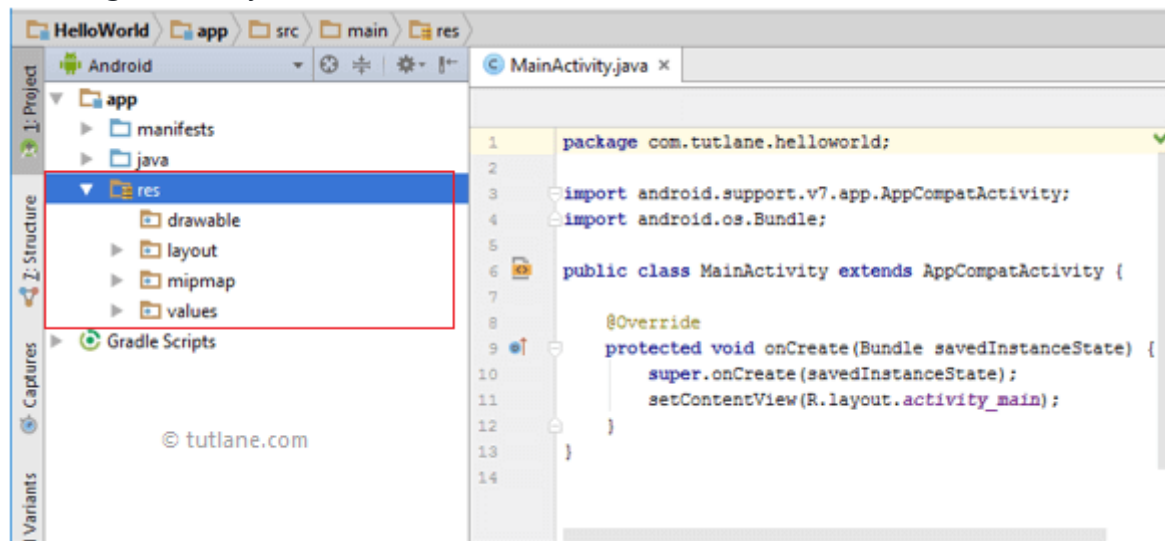


The res (Resources) will contain a different type of folders that are

# Drawable Folder (res/drawable)

It will contain the different types of images as per the requirement of application. It's a best practice to add all the images in a drawable folder other than app/launcher icons for the application development.

# Layout Folder (res/layout)

This folder will contain all XML layout files which we used to define the user interface of our application. Following is the structure of the layout folder in the android application.
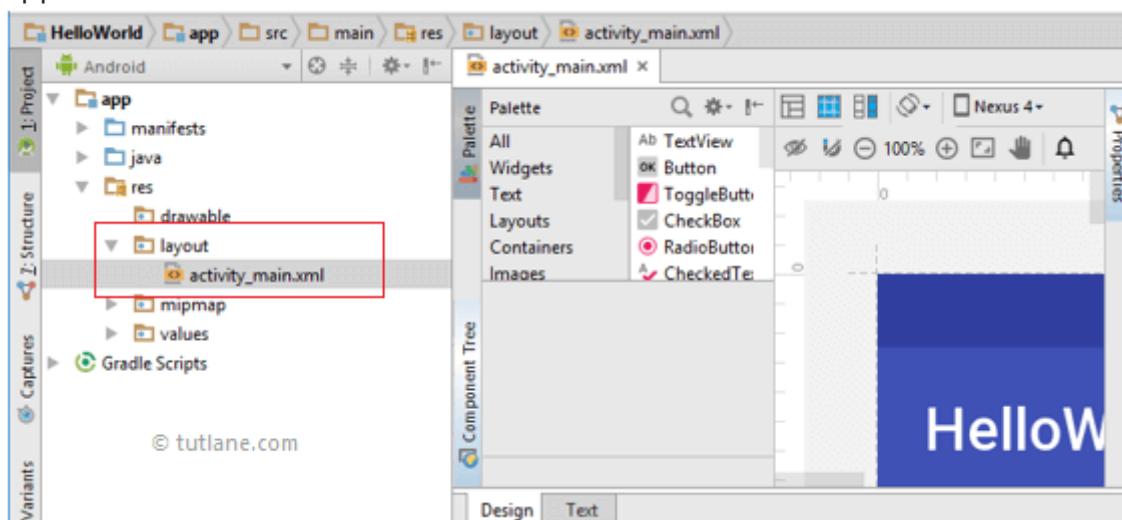


# Mipmap Folder (res/mipmap)

This folder will contain app / launcher icons that are used to show on the home screen. It will contain different density type of icons such as hdpi, mdpi, xhdpi, xxhdpi, xxxhdpi, to use different icons based on the size of the device.

Following is the structure of the mipmap folder in the android application.
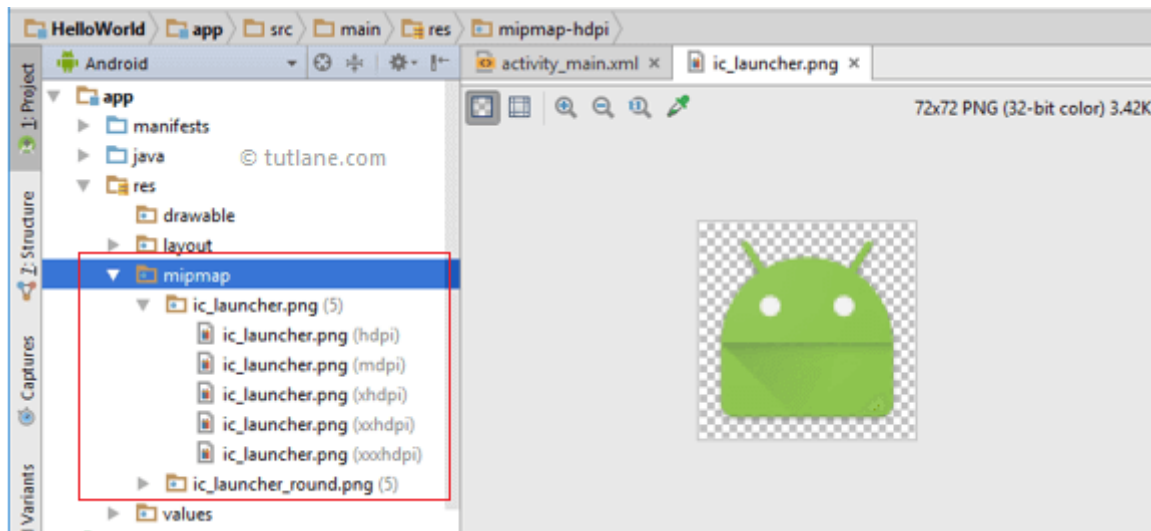


Values Folder (res/values) This folder will contain various XML files, such as strings, colors, style definitions and a static array of strings or integers. Following is the structure of the values folder in android application.
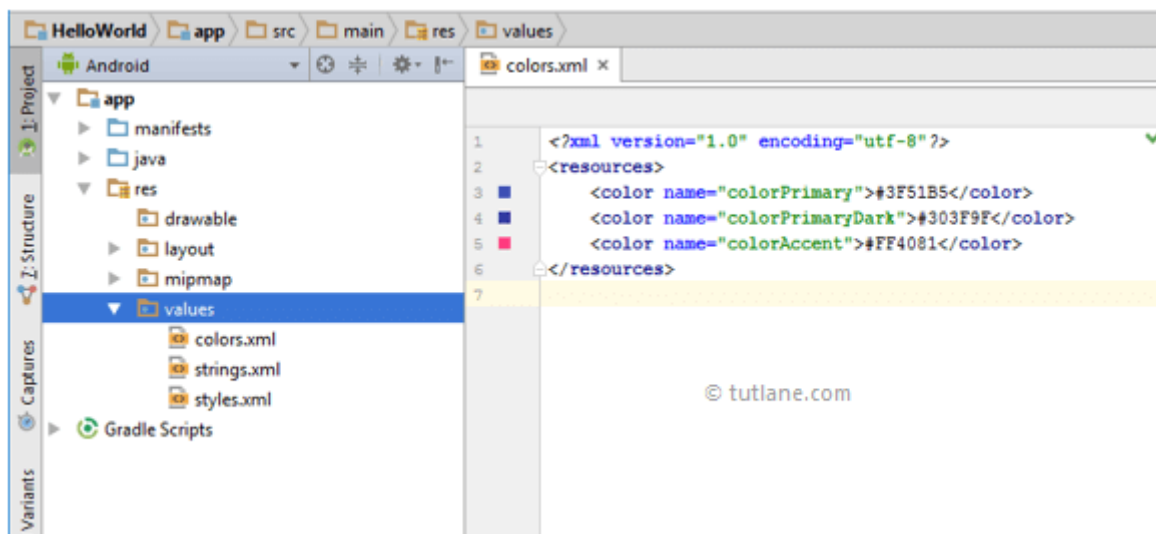


Manifests Folder This folder will contain a manifest file (AndroidManifest.xml) for our android application. This manifest file will contain information about our application such as android version, access permissions, metadata, etc. of our application and its components. The manifest file will act as an intermediate between android OS and our application.Following is the structure of the manifests folder in the android application.
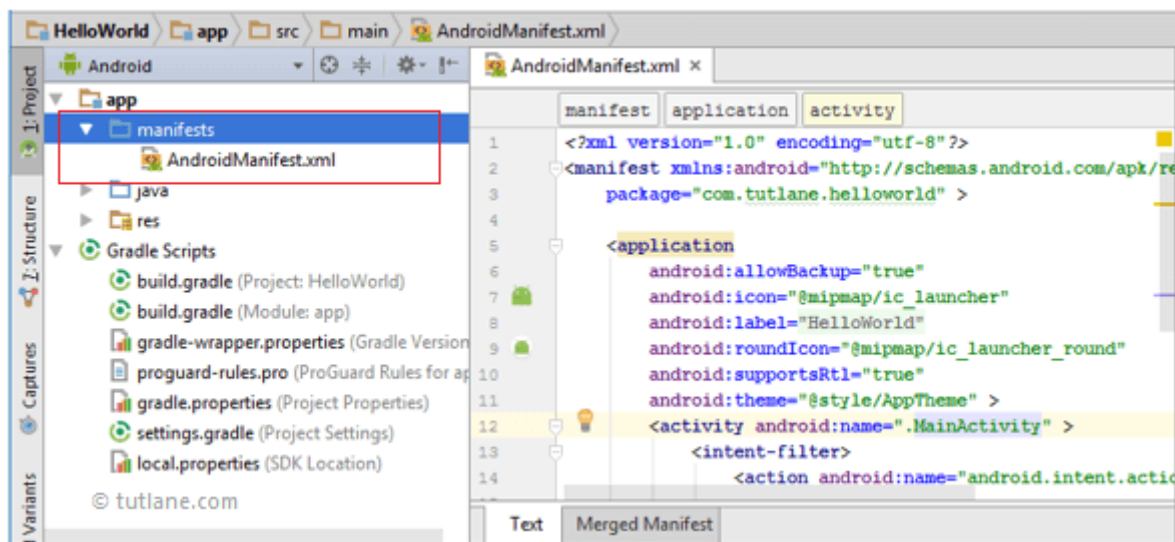
Gradle Scripts In android, Gradle means automated build system and by using this we can define a build configuration that applies to all modules in our application. In Gradle build.gradle (Project), and build.gradle (Module) files are useful to build configurations that apply to all our app modules or specific to one app module.Following is the structure of Gradle Scripts in the android application.
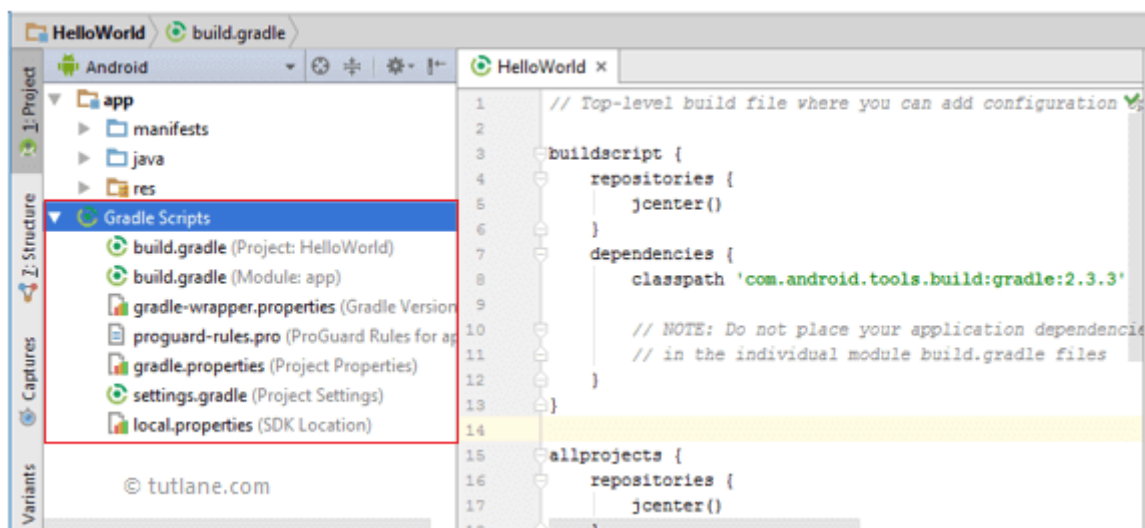


Following are the important files which we need to implement an app in android studio.

Android Layout File (activity_main.xml) The UI of our application will be designed in this file and it will contain Design and Text modes. It will exists in the layouts folder and the structure of activity_main.xml file in Design mode like as shown below.
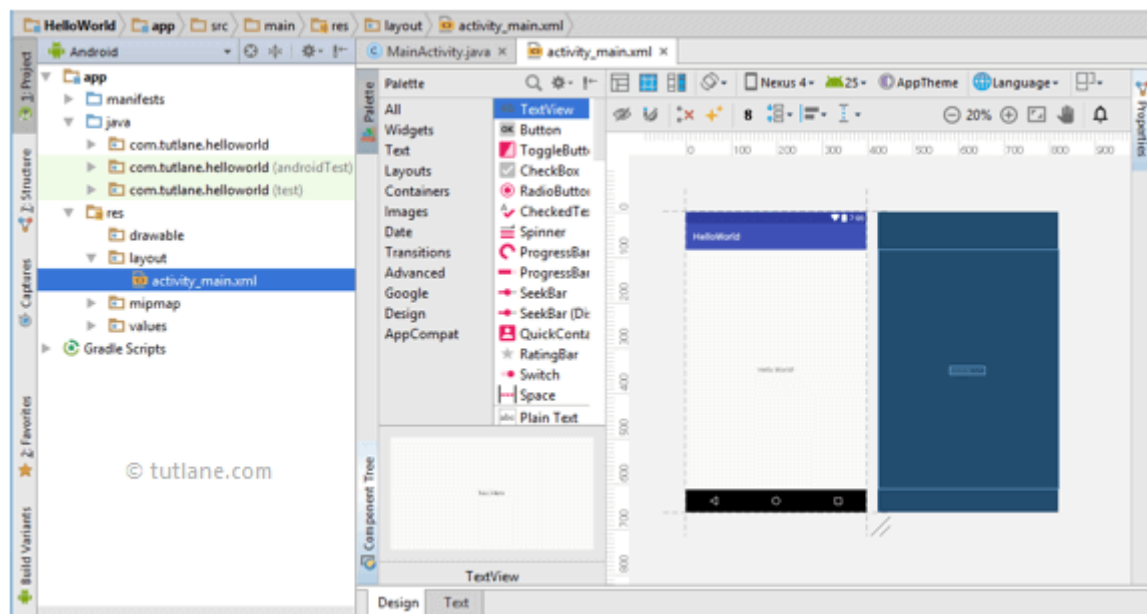
We can make required design modifications in activity_main.xml file either using Design or Text modes. If we switch to Text mode activity_main.xml file will contain a code like as shown below.

```xml
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.androi
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.tutlane.helloworld.MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="paren
        app:layout_constraintTop_toTopOf="parent" />
</android.support.constraint.ConstraintLayout>
```

Android Main Activity File (MainActivity.java) The main activity file in the android application is MainActivity.java and it will exist in the java folder. The MainActivity.java file will contain the java code to handle all the activities related to our app.

Following is the default code of MainActivity.java file which is generated by our HelloWorld application.

package com.tutlane.helloworl import android.support.v7.app.AppCompatActivit import android.os.Bundle; public class MainActivity extends AppCompatActivity @Override protected void onCreate(Bundle savedInstanceState) super.onCreate(savedInstanceState setContentView(R.layout.activity_main

**Android Manifest File (AndroidManifest**

- Generally, our application will contain multiple activities and we need to define all those activities in the AndroidManifest.xml file.

- In our manifest file, we need to mention the main activity for our app using the MAIN action and LAUNCHER category attributes in intent filters ().

- In case if we didn't mention MAIN action or LAUNCHER category for the main activity, our app icon will not appear in the home screen's list of apps.

- Following is the default code of AndroidManifest.xml file which is generated by our HelloWorld application.

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.tutlane.helloworld" >

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme" >
        <activity android:name=".MainActivity" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

- se are the main folders and files required to implement an application in android studio.
- If you want to see the actual file structure of the project, select Project from the Project dropdown instead of Android.