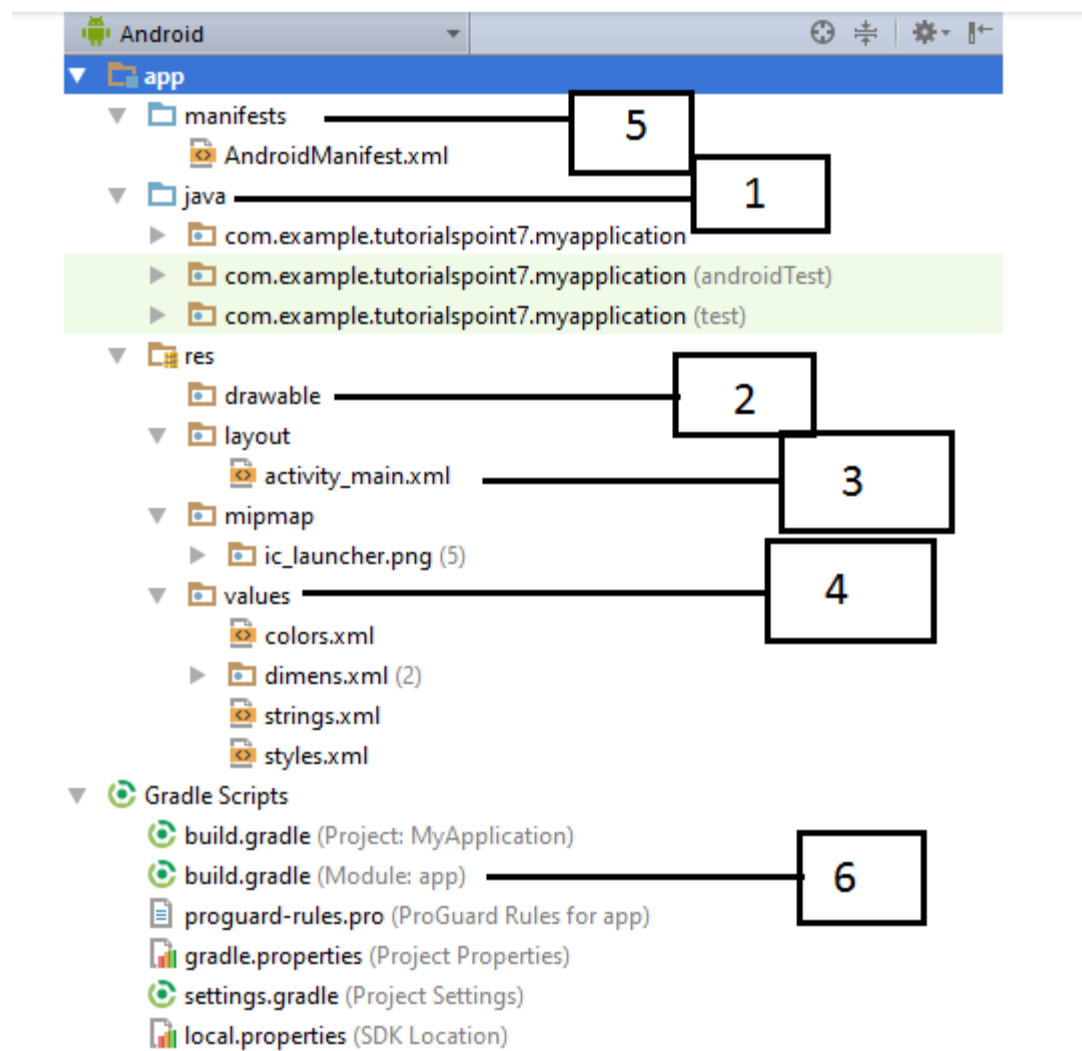


Basic Android



Sr.No.	Folder, File & Description
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1	Java This contains the .java source files for your project. By default, it includes an <i>MainActivity.java</i> source file having an activity class that runs when your app is launched using the app icon.
2	res/drawable-hdpi This is a directory for drawable objects that are designed for high-density screens. (hdpi stands for high-density pixel density)
3	res/layout This is a directory for files that define your app's user interface.
4	res/values This is a directory for other various XML files that contain a collection of resources, such as strings and colours definitions.
5	AndroidManifest.xml This is the manifest file which describes the fundamental characteristics of the app and defines each of its components.
6	Build.gradle This is an auto generated file which contains compileSdkVersion, buildToolsVersion, applicationId, minSdkVersion, targetSdkVersion, versionCode and versionName

AndroidManifest.XML

- Describes essential details about the app, like its name, package name, version, and permissions.
- Defines each part of the app, such as activities, services, broadcast receivers, and content providers.
- Lists permissions required by the app to access device features or data.
- Specifies which components can respond to which types of intents, enabling inter-component communication.
- Declares configurations like supported device orientations, minimum and target SDK versions, hardware requirements, and more.
- Launch Activity : Specifies the main activity that serves as the entry point when the app is launched.



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- Dependencies : Declares dependencies on libraries or other apps required for proper functioning.
- Security : Defines security settings such as allowing or denying access to components by other apps.
- Every Android app must have a manifest file; it's crucial for the Android system to understand and manage the app's behaviour.

1. Creating Hello World Application

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
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=".MainActivity">

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Hello World!"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:textSize="30dp"/>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.helloworldapplication;

import androidx.appcompat.app.AppCompatActivity;
```



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```
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

2. Creating an application that displays message based on the screen orientation.

AndroidManifest.xml

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

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportsRtl="true"
        android:theme="@style/Theme.SecondProgram"
        tools:targetApi="31">
        <activity
            android:name=".NextActivity"
            android:exported="false" android:screenOrientation="landscape" />

        <activity
            android:name=".MainActivity"
            android:exported="true"
            android:screenOrientation="portrait">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
```



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```

        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>

</application>

</manifest>

```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity">

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="8dp"
        android:layout_marginTop="112dp"
        android:onClick="onClick"
        android:text="Launch next activity"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.612"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText1"
        app:layout_constraintVertical_bias="0.613" />

```

```

<TextView
    android:id="@+id/editText1"

```



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```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_centerHorizontal="true"
android:layout_marginEnd="8dp"
android:layout_marginStart="8dp"
android:layout_marginTop="124dp"
android:ems="10"
android:textSize="22dp"
android:text="This activity is portrait orientation"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.502"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
package com.example.secondprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void onClick(View v) {
        Intent intent = new Intent(MainActivity.this,NextActivity.class);
        startActivity(intent);
    }
}
```



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```
}
```

activity_next.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
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=".NextActivity">

<TextView
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="8dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="180dp"
    android:text="this is landscape orientation"
    android:textSize="22dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.502"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

NextActivity.java

```
package com.example.secondprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class NextActivity extends AppCompatActivity {
```



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```

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_next);
}
}

```

3. Creating an application to develop Login window using UI controls.

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView android:id="@+id/tvTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:text="Login Form"
        android:layout_gravity="center"/>

    <TextView android:id="@+id/tvUserName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20sp"
        android:text="User Name" />

```



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```
<EditText
    android:id="@+id/etUsername"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Username"
    android:inputType="text"
    android:padding="8dp"
    android:layout_marginTop="16dp"
    android:layout_marginBottom="30dp"/>
```

```
<TextView android:id="@+id/tvPassword"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="Password" />
```

```
<EditText
    android:id="@+id/etPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Password"
    android:inputType="textPassword"
    android:padding="8dp"
    android:layout_marginTop="16dp"
    android:layout_marginBottom="30dp"/>
```

```
<Button
    android:id="@+id/btnLogin"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Login"
    android:textSize="18sp"
    android:layout_marginTop="16dp"/>
```

```
</LinearLayout>
```

4. Create an application to implement new activity using explicit intent and implicit



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intent.

/* Explicit Intent: This involves navigating from one activity to another within the same application.

Implicit Intent: This involves triggering an action that can be handled by another application. */

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity"
    android:orientation="vertical"
    android:padding="30dp">

    <Button
        android:id="@+id/btnExplicitContent"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Explicit Content"
        android:textSize="30sp"
        android:layout_marginTop="30dp"></Button>

</LinearLayout>
```

MainActivity.java

```
package com.example.fourthprogram;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
```



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Button **btnExplicitContent**;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

 setContentView(R.layout.**activity_main**);

btnExplicitContent=findViewById(R.id.**btnExplicitContent**);

btnExplicitContent.setOnClickListener(**new** View.OnClickListener() {

@Override

public void onClick(View view) {

 Intent intent = **new** Intent(MainActivity.**this**, SecondActivity.**class**);

 startActivity(intent);

 }

 });

}

}

activity_second.xml

<?xml version="1.0" encoding="utf-8"?>

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"

 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=".SecondActivity"

 android:orientation="vertical"

 android:padding="30dp">

<Button

 android:id="@+id/btnImplicitContent"

 android:layout_width="match_parent"

 android:layout_height="wrap_content"

 android:text="Implicit Content"

 android:textSize="30sp"

 android:layout_marginTop="30dp"></Button>



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</LinearLayout>

SecondActivity.java

```
package com.example.fourthprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class SecondActivity extends AppCompatActivity {

    Button btnImplicitContent;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);

        btnImplicitContent=findViewById(R.id.btnImplicitContent);

        btnImplicitContent.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                Uri webpage = Uri.parse("https://www.google.com");
                Intent intent = new Intent(Intent.ACTION_VIEW, webpage);
                startActivity(intent);

            }
        });
    }
}
```

5. Create an application that displays custom designed Opening Screen

drawable/custom_background.xml

```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android" android:shape="rectangle">

    <gradient
        android:startColor="#3F51B5"
        android:endColor="#2196F3"
        android:angle="45"/>
```



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</shape>

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity"
    android:background="@drawable/custom_backgorund">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome to App"
        android:textSize="20sp"
        android:layout_centerInParent="true"/>

</RelativeLayout >
```

MainActivity.java

```
package com.example.fifthprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.view.Window;
import android.view.WindowManager;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```



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```

// Hide the title bar
requestWindowFeature(Window.FEATURE_NO_TITLE);
// Make the activity full screen
getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN,
    WindowManager.LayoutParams.FLAG_FULLSCREEN);
setContentView(R.layout.activity_main);

Handler handler=new Handler();
handler.postDelayed(new Runnable() {
    @Override
    public void run() {
        Intent intent=new Intent(MainActivity.this,MainActivity2.class);
        startActivity(intent);
        finish();
    }
},3000);
}
}

```

Create one more MainActivity2.java (activity_main2.xml)

6. Create an UI with all views.

7. Create menu in application.

res/menu/main_menu.xml

```

<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/action_settings"
        android:title="Settings"
        android:icon="@drawable/ic_setting" />
</menu>

```

activity_main.xml



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```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Menu Page"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

package com.example.seventhprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    @Override

```



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```

public boolean onCreateOptionsMenu(Menu menu) {
    getMenuInflater().inflate(R.menu.main_menu, menu);
    return true;
}

@Override
public boolean onOptionsItemSelected(MenuItem item) {
    int id = item.getItemId();

    // Handle item selection
    if (id == R.id.action_settings) {
        // Open settings activity or perform desired action
        Intent intent = new Intent(getApplicationContext(), MainActivity2.class);
        startActivity(intent); // Start MainActivity2
        return true;
    }

    return super.onOptionsItemSelected(item);
}
}

```

activity_main2.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    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=".MainActivity2">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Settings Page"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"

```



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```
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity2.java

```
package com.example.seventhprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

8. Read / Write the Local data.

9. Create / Read / Write data with database (SQL Lite)

10. Create an application to send SMS and receive SMS.

11. Create an application to send an E-mail.

12. Display Map based on the current / given location.

13. Create a sample application with Login module (Check user name and password) on successful login change Textview "Login Successful". On login fail alert using



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Toast "login fail".

14. Learn to deploy android applications.



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