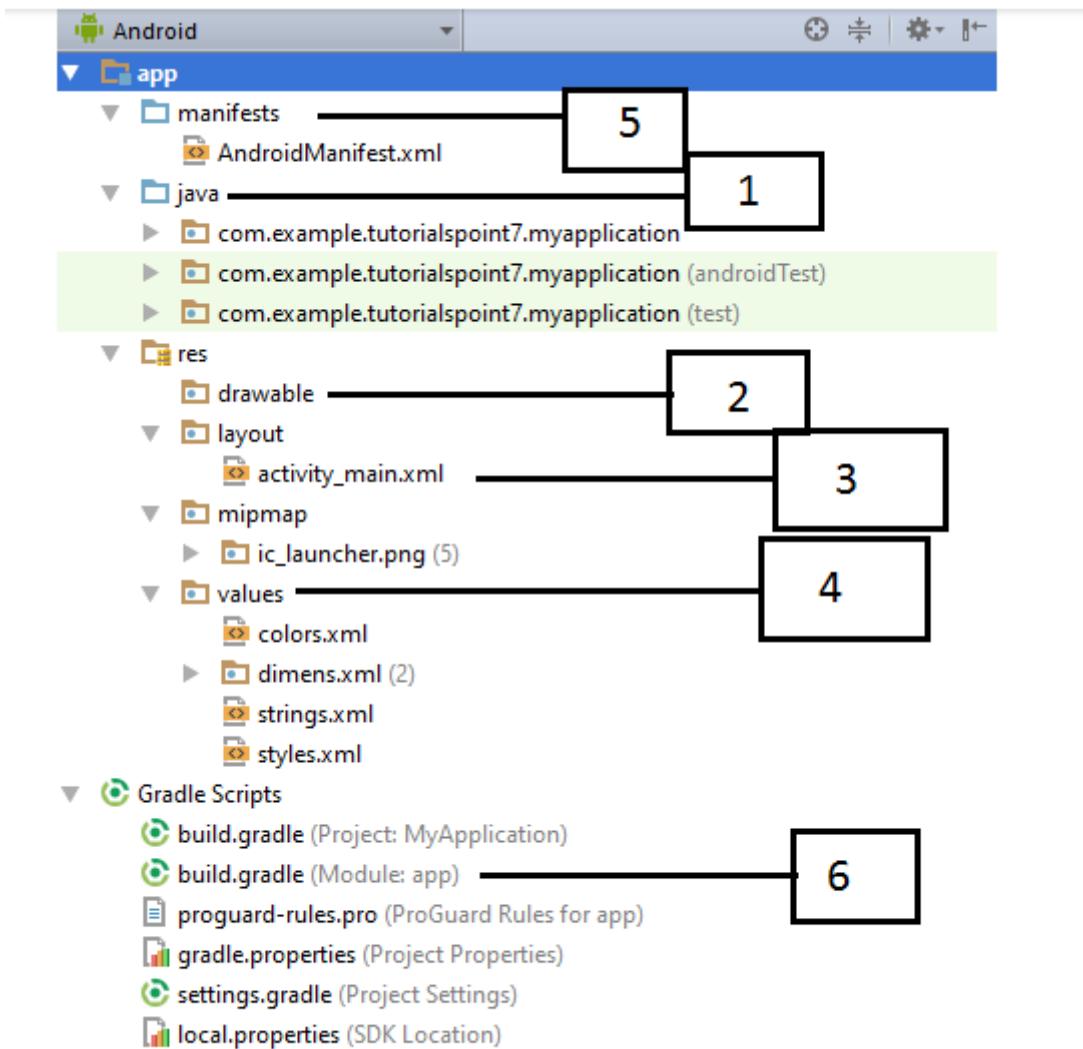




# VIVEKANANDA INSTITUTE OF MANAGEMENT

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## Basic Android



Sr.No.	Folder, File & Description
1	Java

	This contains the <b>.java</b> 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.
<b>2</b>	<b>res/drawable-hdpi</b> This is a directory for drawable objects that are designed for high-density screens. (hdpi stands for high-density pixel density)
<b>3</b>	<b>res/layout</b> This is a directory for files that define your app's user interface.
<b>4</b>	<b>res/values</b> This is a directory for other various XML files that contain a collection of resources, such as strings and colours definitions.
<b>5</b>	<b>AndroidManifest.xml</b> This is the manifest file which describes the fundamental characteristics of the app and defines each of its components.
<b>6</b>	<b>Build.gradle</b> This is an auto generated file which contains compileSdkVersion, buildToolsVersion, applicationId, minSdkVersion, targetSdkVersion, versionCode and versionName

### AndroidMainFest.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.
- 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;
```

```

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" />

            <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"

    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);
}
}

```

### 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 {

    @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" />
```

```
<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 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 {

    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>

</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

/\* Right Click on Drawable resource folder -> Select New -> Click on Drawable Resource File -> Type the File Name custom\_background -> Type Root element shape -> Click on Ok Button \*/

#### 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"/>

</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);
        setContentView(R.layout.activity_main);
    }
}
```

```

// 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**

```
<?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

    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"

    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.

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">

    <TextView
        android:layout_width="match_parent"

```

```
    android:layout_height="wrap_content"

    android:text="User Name"></TextView>

<EditText

    android:id="@+id/etUserName"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

></EditText>

<TextView

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:text="Password"></TextView>

<EditText

    android:id="@+id/etPassword"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"
```

```
></EditText>

<Button

    android:id="@+id/btnsave"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Save" />

<Button

    android:id="@+id/btnnext"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Next" />

</LinearLayout>
```

### MainActivity.java

```
package com.example.eighthprogram;

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

```
import android.content.Context;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    Button btnsave,btnnext;

    EditText etUserName,etPassword;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
    }
}
```

```

setContentView(R.layout.activity_main);

btnsave=(Button) findViewById(R.id.btnsave);

btnnext = (Button) findViewById(R.id.btnnext);

etUserName = (EditText) findViewById(R.id.etUserName);

etPassword = (EditText) findViewById(R.id.etPassword);

btnsave.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        // Writing data to Shared Preferences

        SharedPreferences sharedPreferences =
getSharedPreferences("MyPrefs", Context.MODE_PRIVATE);

        SharedPreferences.Editor editor = sharedPreferences.edit();

        editor.putString("username",
etUserName.getText().toString());

        editor.putString("password",
etPassword.getText().toString());

        editor.apply();
    }
});

```

```

        Toast.makeText(getApplicationContext(), "Saved
successfully", Toast.LENGTH_LONG).show();
    }

}) ;

btnnext.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        Intent intent = new
Intent(getApplicationContext(),MainActivity2.class);

        startActivity(intent);

    }

});

}

```

### activity\_main2.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=".MainActivity2"

    android:orientation="vertical">

        <Button

            android:id="@+id	btnFetch"

            android:layout_width="wrap_content"

            android:layout_height="wrap_content"

            android:text="Fetch" />

        <TextView

            android:layout_width="match_parent"

            android:layout_height="wrap_content"

            android:text="User Name"></TextView>

        <EditText

            android:id="@+id/etUserName"
```

```
    android:layout_width="match_parent"

    android:layout_height="wrap_content"

></EditText>

<TextView

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:text="Password"></TextView>

<EditText

    android:id="@+id/etPassword"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

></EditText>

</LinearLayout>
```

### **MainActivity2.java**

```
package com.example.eighthprogram;

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

```
import android.content.Context;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity2 extends AppCompatActivity {

    Button btnFetch;

    EditText etUserName,etPassword;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main2);

        btnFetch = (Button) findViewById(R.id.btnFetch);

        etUserName = (EditText) findViewById(R.id.etUserName);
```

```

etPassword = (EditText)findViewById(R.id.etPassword);

btnFetch.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View view) {

        // Reading data from Shared Preferences

        SharedPreferences sharedPreferences =
getSharedPreferences("MyPrefs", Context.MODE_PRIVATE);

        String username = sharedPreferences.getString("username", "");

        String password = sharedPreferences.getString("password", "");

        etUserName.setText(username);

        etPassword.setText(password);

    }

});;

}

```

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

### colors.xml

```
<color name="colorAccent">#FF6200EE</color>
```

```
<color name="colorPrimary">#FF3700B3</color>

<color name="colorPrimaryDark">#FF3700B3</color>

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"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:gravity="center">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Hello World!">
    
```

```
    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Course Registration"

    android:textColor="@color/colorAccent"

    android:textSize="30dp"

/>

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Name"

/>
```

```
<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/name"

    android:textAlignment="center"

/>

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

<TextView

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Course">
```

```
/>

<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/course"

    android:textAlignment="center"

/>

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

<TextView

    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"

    android:text="Fee"

    />

<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/fee"

    android:textAlignment="center"

    />

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">
```

```
<Button  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_weight="1"  
    android:id="@+id/bt1"  
    android:text="Ok"  
    android:background="@color/colorPrimary"  
/>  
  
<Button  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_weight="1"  
    android:id="@+id/bt2"  
    android:text="View"  
    android:background="@color/colorAccent"  
/>  
  
</LinearLayout>  
</LinearLayout>
```

### MainActiviy.java

```
package com.example.ninthprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteStatement;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText ed1,ed2,ed3;
    Button b1,b2;

    @Override
```

```

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    ed1 = findViewById(R.id.name);

    ed2 = findViewById(R.id.course);

    ed3 = findViewById(R.id.fee);

    b1 = findViewById(R.id.bt1);

    b2 = findViewById(R.id.bt2);

    b2.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v)

        {

            Intent i = new

Intent(getApplicationContext(),ViewActivity.class);

            startActivity(i);

        }

    });

    b1.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

```

```

        insert();

    }

}) ;

}

public void insert()

{

try

{



String name = ed1.getText().toString();

String course = ed2.getText().toString();

String fee = ed3.getText().toString();

SQLiteDatabase db = openOrCreateDatabase("SliteDb",

Context.MODE_PRIVATE,null);

db.execSQL("CREATE TABLE IF NOT EXISTS records(id INTEGER

PRIMARY KEY AUTOINCREMENT,name VARCHAR,course VARCHAR,fee VARCHAR)");

String sql = "insert into records(name,course,fee)values('" +



name + "','" + course + "','" + fee + "')";

SQLiteDatabase statement = db.compileStatement(sql);



statement.execute();



Toast.makeText(this,"Record addded",Toast.LENGTH_LONG).show();



ed1.setText("");

```

```

        ed2.setText("");
        ed3.setText("");
        ed1.requestFocus();
    }

    catch (Exception ex)
    {
        Toast.makeText(this,"Record Fail",Toast.LENGTH_LONG).show();
    }
}

}

/* Add Student.class file (Right click on package name *)
Student.class
package com.example.ninthprogram;

public class Student {
    String id;
    String name;
    String course;
    String fee;
}

```

```
        String titles;  
  
    }  
  
}
```

### activity\_view.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=".ViewActivity"  
  
    android:orientation="vertical">  
  
    <ListView  
  
        android:layout_width="match_parent"  
  
        android:layout_height="match_parent"  
  
        android:id="@+id/lst1"  
  
    />  
  
</LinearLayout>
```

### ViewActivity.java

```
package com.example.ninthprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import java.util.ArrayList;

public class ViewActivity extends AppCompatActivity {

    ListView lst1;
    ArrayList<String> titles = new ArrayList<String>();
```

```

ArrayAdapter arrayAdapter;

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_view);

    SQLiteDatabase db = openOrCreateDatabase("SliteDb",
Context.MODE_PRIVATE,null);

    lst1 = findViewById(R.id.lst1);

    final Cursor c = db.rawQuery("select * from records",null);

    int id = c.getColumnIndex("id");

    int name = c.getColumnIndex("name");

    int course = c.getColumnIndex("course");

    int fee = c.getColumnIndex("fee");

    titles.clear();

    arrayAdapter = new ArrayAdapter(this,
        androidx.appcompat.R.layout.support_simple_spinner_dropdown_item,titles);

    lst1.setAdapter(arrayAdapter);

    final ArrayList<Student> stud = new ArrayList<Student>();

    if(c.moveToFirst())

{

```

```

do {

    Student stu = new Student();

    stu.id = c.getString(id);

    stu.name = c.getString(name);

    stu.course = c.getString(course);

    stu.fee = c.getString(fee);

    stud.add(stu);

    titles.add(c.getString(id) + " \t " + c.getString(name) + "
\t " + c.getString(course) + " \t " + c.getString(fee) );

} while(c.moveToNext());

arrayAdapter.notifyDataSetChanged();

lst1.invalidateViews();

}

lst1.setOnItemClickListener(new AdapterView.OnItemClickListener() {

    @Override

    public void onItemClick(AdapterView<?> parent, View view, int
position, long id) {

        String aa = titles.get(position).toString();

        Student stu = stud.get(position);

        Intent i = new
Intent(getApplicationContext(),EditActivity.class);
}

```

```

        i.putExtra("id", stu.id);

        i.putExtra("name", stu.name);

        i.putExtra("course", stu.course);

        i.putExtra("fee", stu.fee);

        startActivity(i);

    }

}) ;

}

}

```

### activity edit.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=".EditActivity"

    android:orientation="vertical">

```

```
<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="vertical"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Course Registration"

        android:textColor="@color/colorAccent"

        android:textSize="30dp"

    />

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"

    android:text="ID"

/>

<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/id"

    android:textAlignment="center"

/>

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

<TextView

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"
```

```
    android:text="Name"

  />

<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/name"

    android:textAlignment="center"

  />

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Course"

```

```
 />

<EditText

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:ems="10"

    android:id="@+id/course"

    android:textAlignment="center"

    />

</LinearLayout>

<LinearLayout

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:orientation="horizontal"

    android:gravity="center">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Fee"

        />
```

```
<EditText  
  
    android:layout_width="wrap_content"  
  
    android:layout_height="wrap_content"  
  
    android:layout_weight="1"  
  
    android:ems="10"  
  
    android:id="@+id/fee"  
  
    android:textAlignment="center"  
  
/>  
  
</LinearLayout>  
  
<LinearLayout  
  
    android:layout_width="wrap_content"  
  
    android:layout_height="wrap_content"  
  
    android:orientation="horizontal"  
  
    android:gravity="center">  
  
<Button  
  
    android:layout_width="wrap_content"  
  
    android:layout_height="wrap_content"  
  
    android:layout_weight="1"  
  
    android:id="@+id/bt1"  
  
    android:text="Edit"
```

```
        android:background="@color/colorPrimary"

    />

<Button

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:id="@+id/bt2"

    android:text="Delete"

    android:background="@color/colorAccent"

    />

<Button

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_weight="1"

    android:id="@+id/bt3"

    android:text="Back"

    android:background="@color/colorPrimaryDark"

    />

</LinearLayout>

</LinearLayout>
```

## EditActivity.java

```
package com.example.ninthprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Context;
import android.content.Intent;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteStatement;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class EditActivity extends AppCompatActivity {

    EditText ed1,ed2,ed3,ed4;
    Button b1,b2,b3;

    @Override
```

```

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_edit);

    ed1 = findViewById(R.id.name);

    ed2 = findViewById(R.id.course);

    ed3 = findViewById(R.id.fee);

    ed4 = findViewById(R.id.id);

    b1 = findViewById(R.id.bt1);

    b2 = findViewById(R.id.bt2);

    b3 = findViewById(R.id.bt3);

    Intent i = getIntent();

    String t1 = i.getStringExtra("id").toString();

    String t2 = i.getStringExtra("name").toString();

    String t3 = i.getStringExtra("course").toString();

    String t4 = i.getStringExtra("fee").toString();

    ed4.setText(t1);

    ed1.setText(t2);

    ed2.setText(t3);

    ed3.setText(t4);
}

```

```

b2.setOnClickListener(new View.OnClickListener() {
    @Override

    public void onClick(View v) {
        try

        {

            String id = ed4.getText().toString();

            SQLiteDatabase db =
openOrCreateDatabase("SliteDb", Context.MODE_PRIVATE, null);

            String sql = "delete from records where id = " + id + "";

            SQLiteStatement statement = db.compileStatement(sql);

            statement.execute();

            Toast.makeText(EditActivity.this, "Record
Deleted", Toast.LENGTH_LONG).show();

            ed1.setText("");
            ed2.setText("");
            ed3.setText("");

            ed1.requestFocus();

        }

        catch (Exception ex)
        {
    }
}

```

```

Toast.makeText(EditActivity.this,"Record Fail",Toast.LENGTH_LONG).show();

}

}

});;

b3.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

Intent i = new
Intent(getApplicationContext(),ViewActivity.class);

startActivity(i);

}

});;

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

try {

String name = ed1.getText().toString();

String course = ed2.getText().toString();

String fee = ed3.getText().toString();

String id = ed4.getText().toString();

```

```

        SQLiteDatabase db = openOrCreateDatabase("SliteDb",
Context.MODE_PRIVATE, null);

        String sql = "update records set name = '" + name + "' ,course='"
+ course + "' ,fee=' " + fee + "' where id= " + id + "";

        SQLiteStatement statement = db.compileStatement(sql);

        statement.execute();

        Toast.makeText(EditActivity.this, "Record Updatedddd",
Toast.LENGTH_LONG).show();

        ed1.setText("");
        ed2.setText("");
        ed3.setText("");

        ed1.requestFocus();

    } catch (Exception ex) {

        Toast.makeText(EditActivity.this, "Record Fail",
Toast.LENGTH_LONG).show();

    }

}

}

```

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

### 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">

    <uses-feature

        android:name="android.hardware.telephony"

        android:required="false" />

    <uses-permission android:name="android.permission.SEND_SMS"/>

    <uses-permission android:name="android.permission.RECEIVE_SMS"/>

    <uses-permission android:name="android.permission.READ_SMS"/>

<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.NewSMS"
```

```
tools:targetApi="31">

<activity

    android:name=".MainActivity"

    android:exported="true">

    <intent-filter>

        <action android:name="android.intent.action.MAIN" />

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

    </intent-filter>

</activity>

</application>

</manifest>
```

### activity\_main.xml

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

<RelativeLayout

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

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"
```

```
    android:background="@color/white"

    tools:context=".MainActivity">

<EditText

    android:id="@+id/editTextPhoneNumber"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:hint="Enter phone number"

    android:layout_margin="16dp"/>

<EditText

    android:id="@+id/editTextMessage"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:hint="Enter message"

    android:layout_below="@id/editTextPhoneNumber"

    android:layout_margin="16dp"/>

<Button
```

```
    android:id="@+id/buttonSend"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Send"

    android:layout_below="@+id/editTextMessage"

    android:layout_alignParentEnd="true"

    android:layout_marginEnd="16dp"

    android:onClick="sendMessage"

    tools:ignore="UsingOnClickInXml" />
```

```
<TextView

    android:id="@+id/textViewReceivedMessages"

    android:layout_width="match_parent"

    android:layout_height="wrap_content"

    android:layout_below="@+id/buttonSend"

    android:layout_marginStart="16dp"

    android:layout_marginTop="16dp"

    android:layout_marginEnd="16dp"

    android:layout_marginBottom="16dp"

    android:textColor="@color/black" />
```

```
</RelativeLayout>
```

### MainActivity.java

```
package com.example.newsms;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.content.IntentFilter;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.telephony.SmsMessage;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
```

```
import android.widget.Toast;

import android.Manifest;

public class MainActivity extends AppCompatActivity {

    private static final int SMS_PERMISSION_CODE = 101;

    private EditText editTextPhoneNumber;

    private EditText editTextMessage;

    private TextView textViewReceivedMessages;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        editTextPhoneNumber = findViewById(R.id.editTextPhoneNumber);

        editTextMessage = findViewById(R.id.editTextMessage);

        textViewReceivedMessages =

        findViewById(R.id.textViewReceivedMessages);

        // Request SMS permissions if not granted
    }
}
```

```

    if (!checkSMSPermission()) {
        requestSMSPermission();
    }

    // Register SMS receiver

    IntentFilter intentFilter = new IntentFilter();
    intentFilter.addAction("android.provider.Telephony.SMS_RECEIVED");
    registerReceiver(smsReceiver, intentFilter);
}

@Override
protected void onDestroy() {
    super.onDestroy();
    unregisterReceiver(smsReceiver);
}

// Button click listener for sending SMS

public void sendMessage(View view) {
    String phoneNumber =
    editTextPhoneNumber.getText().toString().trim();
    String message = editTextMessage.getText().toString();
}

```

```

    if (phoneNumber.isEmpty()) {

        Toast.makeText(this, "Please enter a valid phone number",
Toast.LENGTH_SHORT).show();

        return;
    }

    try {

        SmsManager smsManager = SmsManager.getDefault();

        smsManager.sendTextMessage(phoneNumber, null, message, null, null);

        Toast.makeText(this, "Message sent", Toast.LENGTH_SHORT).show();

    } catch (IllegalArgumentException e) {

        Toast.makeText(this, "Invalid phone number format",
Toast.LENGTH_SHORT).show();

    } catch (Exception e) {

        Toast.makeText(this, "Failed to send message",
Toast.LENGTH_SHORT).show();

        e.printStackTrace();
    }
}

// Check if SMS permission is granted

```

```

private boolean checkSMSPermission() {
    return ContextCompat.checkSelfPermission(this,
        Manifest.permission.SEND_SMS) == PackageManager.PERMISSION_GRANTED;
}

}

// Request SMS permission

private void requestSMSPermission() {
    ActivityCompat.requestPermissions(this, new
        String[]{Manifest.permission.SEND_SMS, SMS_PERMISSION_CODE} );
}

}

// SMS receiver

private final BroadcastReceiver smsReceiver = new BroadcastReceiver() {
    @Override
    public void onReceive(Context context, Intent intent) {
        Bundle bundle = intent.getExtras();
        if (bundle != null) {
            Object[] pdus = (Object[]) bundle.get("pdus");
            if (pdus != null) {
                for (Object pdu : pdus) {
                    SmsMessage smsMessage = SmsMessage.createFromPdu((byte[]) pdu);
                }
            }
        }
    }
}

```

```

String senderPhoneNumber = smsMessage.getDisplayOriginatingAddress();

String messageBody = smsMessage.getMessageBody();

        textViewReceivedMessages.append("From: " +
senderPhoneNumber + "\n");

        textViewReceivedMessages.append("Message: " +
messageBody + "\n\n");

    }

}

}

};

}

```

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

**activity mail.xml**

```

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

```

```
<EditText  
  
    android:id="@+id/editTextTo"  
  
    android:layout_width="match_parent"  
  
    android:layout_height="wrap_content"  
  
    android:hint="To"/>  
  
  
  
<EditText  
  
    android:id="@+id/editTextSubject"  
  
    android:layout_width="match_parent"  
  
    android:layout_height="wrap_content"  
  
    android:layout_below="@id/editTextTo"  
  
    android:hint="Subject"/>  
  
  
  
<EditText  
  
    android:id="@+id/editTextMessage"  
  
    android:layout_width="match_parent"  
  
    android:layout_height="wrap_content"  
  
    android:layout_below="@id/editTextSubject"  
  
    android:hint="Message"/>
```

```

<Button

    android:id="@+id/buttonSend"

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:layout_below="@+id/editTextMessage"

    android:text="Send" />

</RelativeLayout>

```

### MainActivity.java

```

package com.example.eleventhprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

```

```

EditText editTextTo, editTextSubject, editTextMessage;

Button buttonSend;

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    editTextTo = findViewById(R.id.editTextTo);

    editTextSubject = findViewById(R.id.editTextSubject);

    editTextMessage = findViewById(R.id.editTextMessage);

    buttonSend = findViewById(R.id.buttonSend);

    buttonSend.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            sendEmail();
        }
    });
}

```

```

    } ) ;

}

@SuppressLint("QueryPermissionsNeeded")

private void sendEmail() {

    String to = editTextTo.getText().toString().trim();

    String subject = editTextSubject.getText().toString().trim();

    String message = editTextMessage.getText().toString().trim();

    Intent intent = new Intent(Intent.ACTION_SEND);

    intent.setType("text/plain");

    intent.putExtra(Intent.EXTRA_EMAIL, new String[]{to});

    intent.putExtra(Intent.EXTRA_SUBJECT, subject);

    intent.putExtra(Intent.EXTRA_TEXT, message);

    if (intent.resolveActivity(getApplicationContext()) != null) {

        startActivityForResult(Intent.createChooser(intent, "Choose an email
client"));

    }

}

```

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

### **activity\_main.xml**

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

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

15.     xmlns:app="http://schemas.android.com/apk/res-auto"
16.     xmlns:tools="http://schemas.android.com/tools"
17.     android:layout_width="match_parent"
18.     android:layout_height="match_parent"
19.     tools:context=".MainActivity"
20.     android:orientation="vertical"
21.     android:padding="16dp">

22.

23.     <TextView android:id="@+id/tvTitle"
24.             android:layout_width="wrap_content"
25.             android:layout_height="wrap_content"
26.             android:textSize="24sp"
27.             android:text="Login Form"
28.             android:layout_gravity="center"/>

29.

30.

31.     <TextView android:id="@+id/tvUserName"
32.             android:layout_width="wrap_content"
33.             android:layout_height="wrap_content"
34.             android:textSize="20sp"
35.             android:text="User Name" />

36.

37.     <EditText
38.             android:id="@+id/etUsername"
```

```
39.         android:layout_width="match_parent"
40.         android:layout_height="wrap_content"
41.         android:hint="Username"
42.         android:inputType="text"
43.         android:padding="8dp"
44.         android:layout_marginTop="16dp"
45.         android:layout_marginBottom="30dp"/>"
46.
47.     <TextView android:id="@+id/tvPassword"
48.             android:layout_width="wrap_content"
49.             android:layout_height="wrap_content"
50.             android:textSize="20sp"
51.             android:text="Password" />
52.
53.     <EditText
54.             android:id="@+id/etPassword"
55.             android:layout_width="match_parent"
56.             android:layout_height="wrap_content"
57.             android:hint="Password"
58.             android:inputType="textPassword"
59.             android:padding="8dp"
60.             android:layout_marginTop="16dp"
61.             android:layout_marginBottom="30dp"/>"
62.
63.     <Button
64.             android:id="@+id/btnLogin"
65.             android:layout_width="match_parent"
66.             android:layout_height="wrap_content"
67.             android:text="Login"
68.             android:textSize="18sp"
```

```

69.         android:layout_marginTop="16dp"/>
70.
71.
72.     <TextView android:id="@+id/tvMessage"
73.             android:layout_width="wrap_content"
74.             android:layout_height="wrap_content"
75.             android:textSize="20sp"
76.             android:text="Password" />
77.
78. </LinearLayout>
```

### MainActivity.java

```

package com.example.thirdprogram;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

    EditText etUsername, etPassword;
    Button btnLogin;
    TextView tvMessage;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        etUsername = findViewById(R.id.etUsername);
        etPassword = findViewById(R.id.etPassword);
        btnLogin = findViewById(R.id.btnLogin);
        tvMessage = findViewById(R.id.tvMessage);
    }
}
```

```

setContentView(R.layout.activity_main);

btnLogin = (Button) findViewById(R.id.btnLogin);
etUsername = (EditText) findViewById(R.id.etUsername);
etPassword = (EditText) findViewById(R.id.etPassword);

tvMessage = (TextView) findViewById(R.id.tvMessage);

btnLogin.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View view) {

        if(etUsername.getText().toString().equals(""))
        {
            etUsername.setError("Enter User name");
        } else if (etPassword.getText().toString().equals(""))
        {
            etPassword.setError("Enter Password");
        }

        else if(etUsername.getText().toString().equals("vit") &&
etPassword.getText().toString().equals("vit"))
        {
            tvMessage.setText("Valid Login");
        }
        else
        {
            tvMessage.setText("INvalid login");
        }
    }
});
```

}