Community Institute of Commerce & Management Studies

(Affiliated to Bengaluru City University, Approved by AICTE, New Delhi & Recognized by Government of Karnataka)

CERTIFICATE

NAME : **CLASS :**

REGISTER NUMBER :

This is certified to be the bonafied work of the Student in the Mobile Application Development Laboratory during the academic year 2024-2025.

Number of Practicals Certified ..... out of ..... in the subject of .....

.....

Teacher In-Charge

....

Examiner's Signature **Head Of BCA Department**

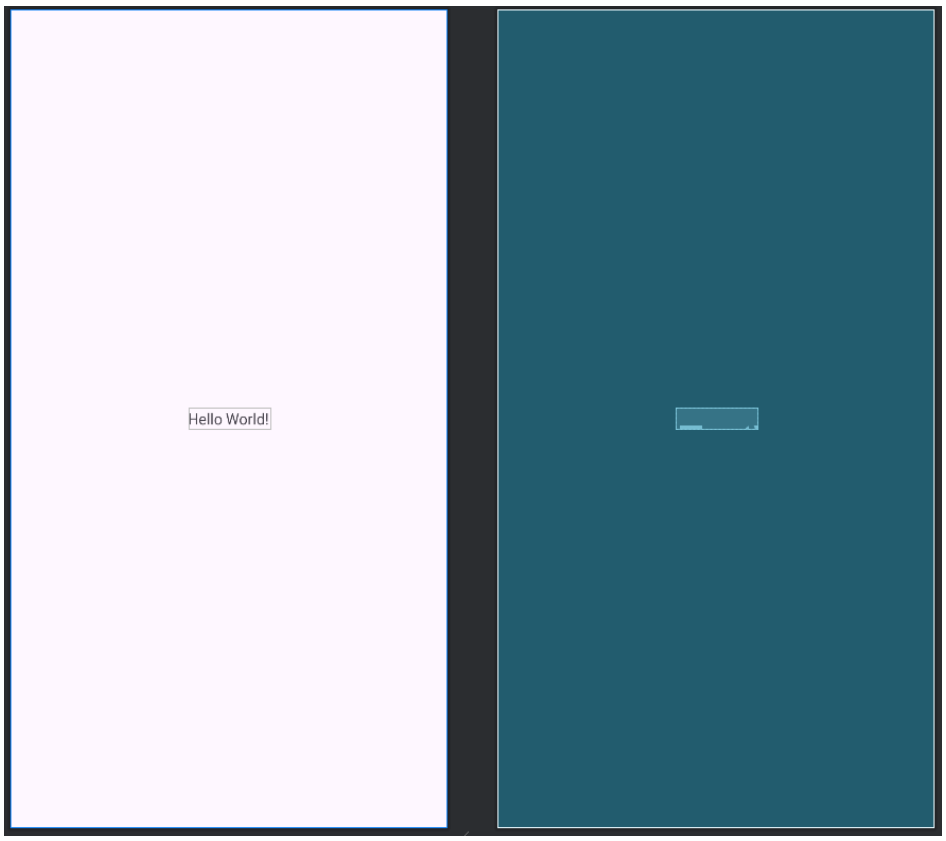
Date : .....

INDEX

Pgm No.	*Date*	*Title of Program*	*Page No.*
1	13-03-2025	Creating “Hello World” Application.	2-4
2	17-03-2025	Creating an application that displays message based on the screen orientation.	5-7
3	19-03-2025	Developing a Login Window Using UI Controls.	8-10
4	24-03-2025	Create an application to implement new activity using explicit intent, implicit intent and content provider.	11-14
5	01-04-2025	Create an application that displays custom designed Opening Screen.	15-17
6	07-04-2025	Create an UI with All Views.	18-22
7	08-04-2025	Create menu in Application.	23-26
8	09-04-2025	Read/Write the local data.	27-31
9	17-04-2025	Create/Read/Write data with database(SQLite).	32-34
10	21-04-2025	Create an application to send SMS and Receive SMS.	35-38
11	22-04-2025	Create an application to send a Email.	39-42
12	25-04-2025	Display Map based on the Current/given location.	43-46
13	28-04-2025	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”.	47-50
14	29-04-2025	Create an application to demonstrate table layout.	51-54

Program 01: Creating “Hello World” Application.

Design:



Code:

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

<TextView
    android:id="@+id/textview"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="20dp"
    android:text=" Hello World " />

</RelativeLayout>
```

MainActivity.java

```
package com.helloworld;
  import android.os.Bundle;
  import androidx.appcompat.app.AppCompatActivity;
  public class MainActivity1 extends AppCompatActivity
  {
     @Override
     protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
     }
  }
```

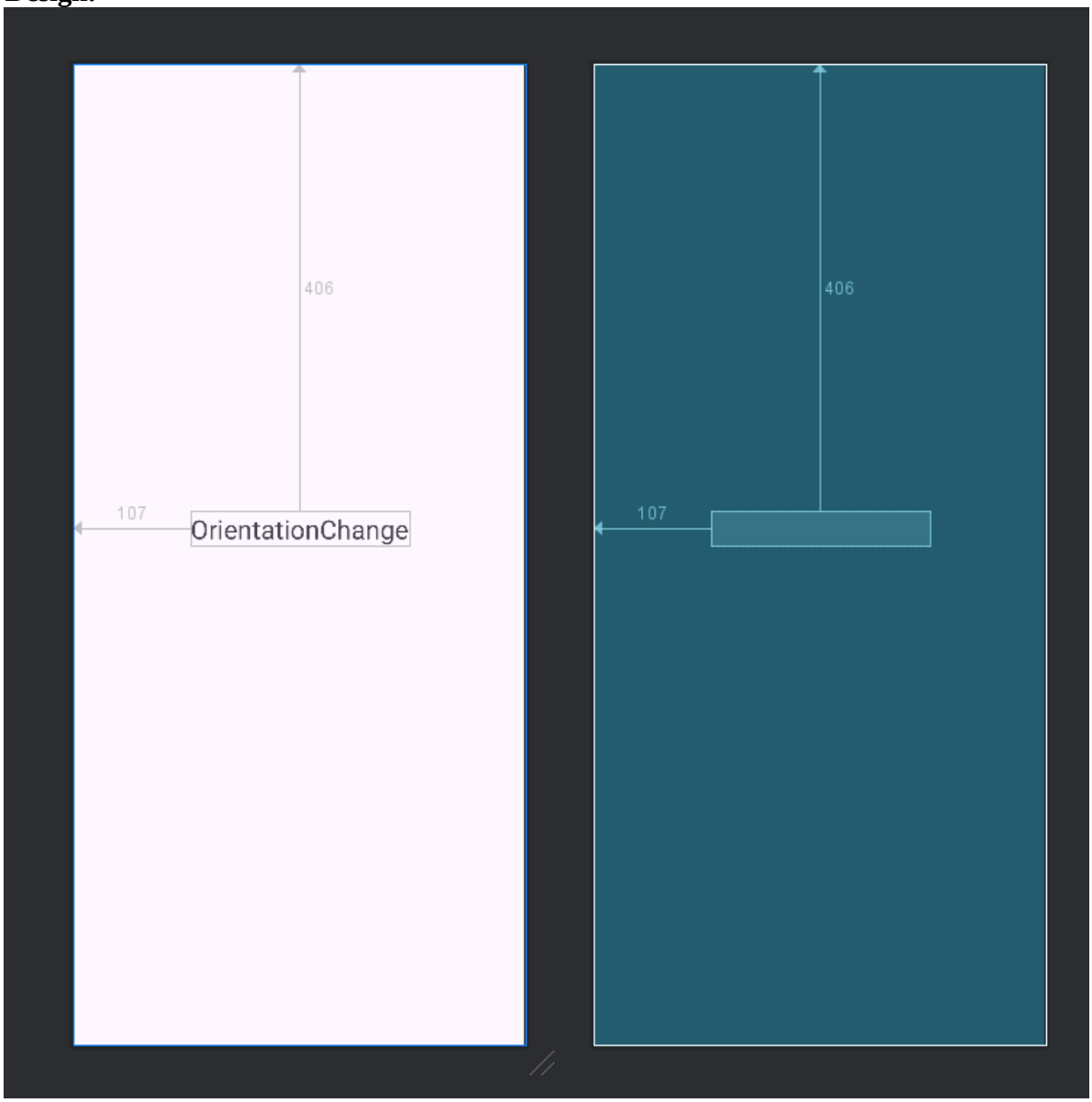
AndroidManifest.xml

```
<?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:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Helloworld"
        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>
```

Output:

Program 02: Creating an application that displays message based on the screen orientation

Design:



activity_main.xml

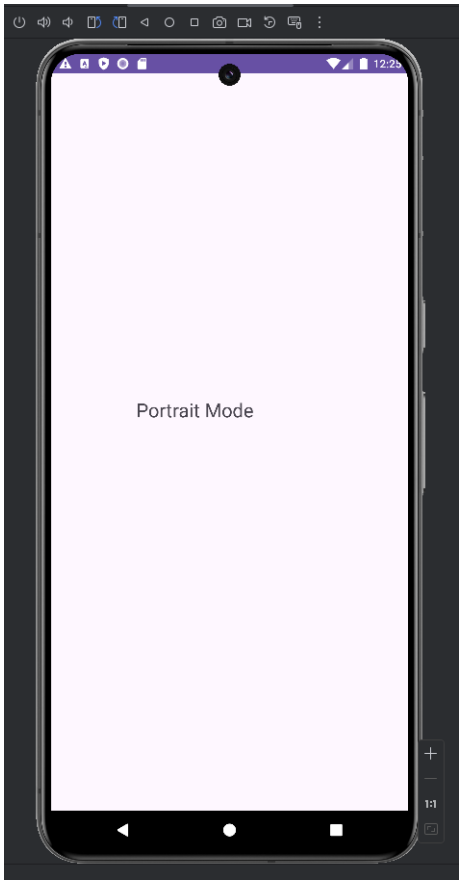
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
```

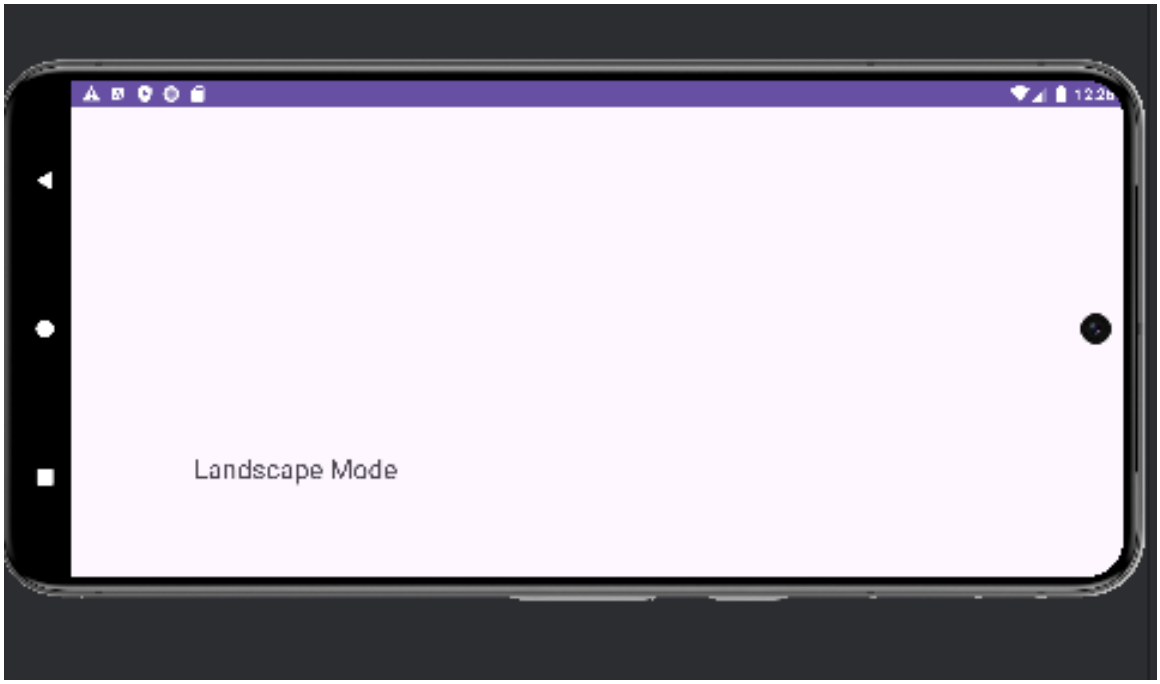
```
<TextView
      android:id="@+id/orientationchange"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_alignParentStart="true"
      android:layout_alignParentTop="true"
      android:layout_marginStart="107dp"
      android:layout_marginTop="406dp"
      android:text="OrientationChange"
      android:textSize="24sp" />
</RelativeLayout>
```

MainActivity.java

```
package com.example.orientationchange;
import android.graphics.Point;
import android.os.Bundle;
import android.view.Display;
import android.view.WindowManager;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      TextView orientationMessage=findViewById(R.id.orientationchange);
      WindowManager wm=(WindowManager) getSystemService(WINDOW_SERVICE);
      Display d=wm.getDefaultDisplay();
      Point size=new Point();
      d.getSize(size);
      int w=size.x;
      int h=size.y;
      if (w>h) {
         orientationMessage.setText("Landscape Mode");
      }
      else {
         orientationMessage.setText("Portrait Mode");

      }
   }
}
```

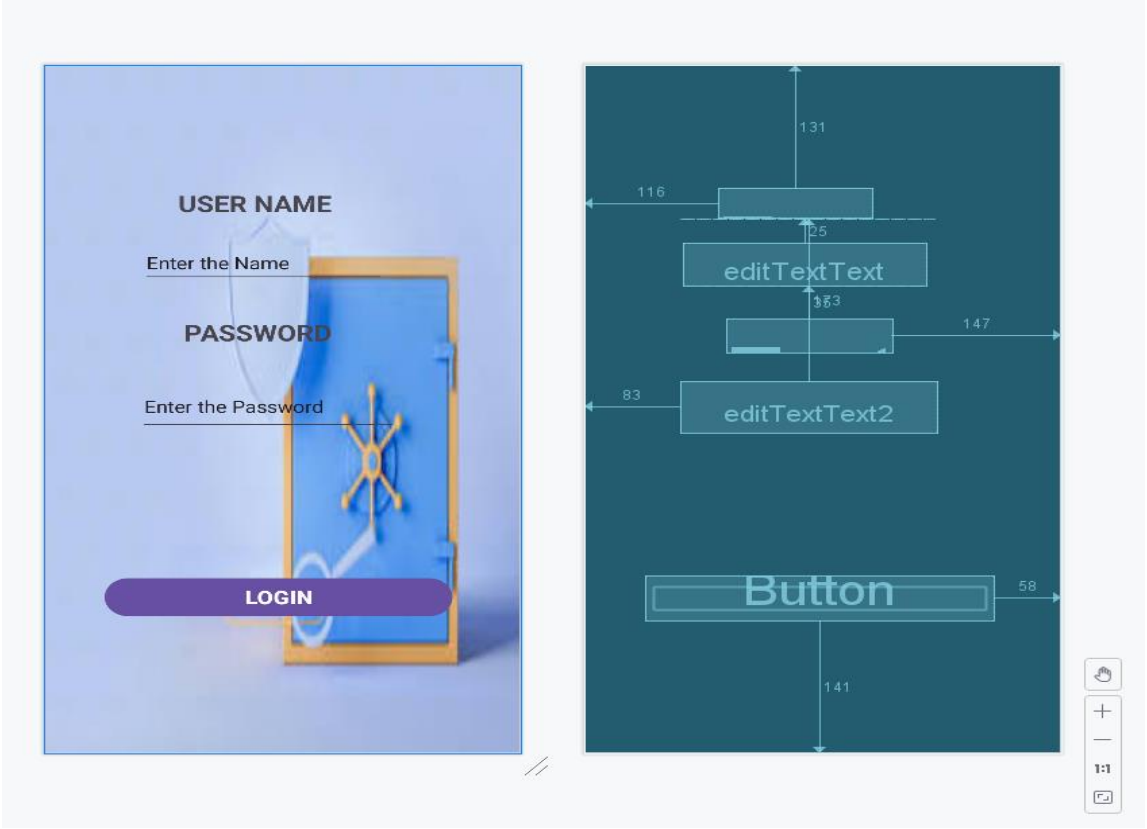
OUTPUT





Program 03: Developing a Login Window Using UI Controls

Design:



activity_main.xml

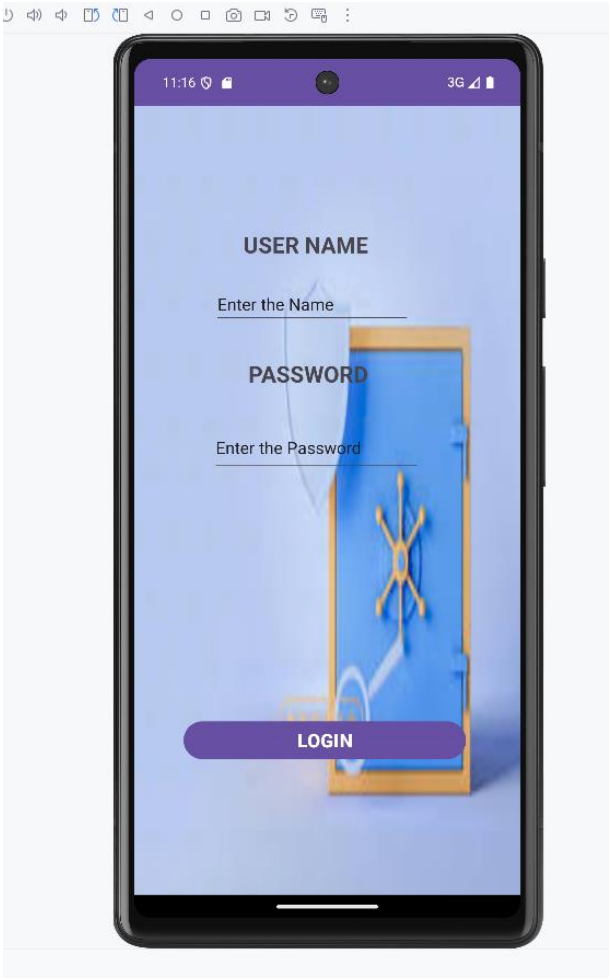
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/images"
    tools:context=".MainActivity">


    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="116dp"
        android:layout_marginTop="131dp"
        android:text="USER NAME"
        android:textSize="24sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/textView"
        android:layout_marginStart="85dp"
```

```
        android:layout_marginTop="25dp"
        android:ems="10"
        android:inputType="text"
        android:text="Enter the Name" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="143dp"
        android:layout_height="36dp"
        android:layout_below="@id/editTextText"
        android:layout_alignParentEnd="true"
        android:layout_marginTop="35dp"
        android:layout_marginEnd="147dp"
        android:text="PASSWORD"
        android:textSize="24sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editTextText2"

        android:layout_width="222dp"
        android:layout_height="55dp"
        android:layout_below="@id/textView"
        android:layout_alignParentStart="true"
        android:layout_marginStart="83dp"
        android:layout_marginTop="173dp"
        android:ems="10"
        android:inputType="text"
        android:text="Enter the Password" />

    <Button
        android:id="@+id/button"
        android:layout_width="301dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="58dp"
        android:layout_marginBottom="141dp"
        android:text="LOGIN"
        android:textSize="20sp"
        android:textStyle="bold" />
</RelativeLayout>
```

MainActivity.java

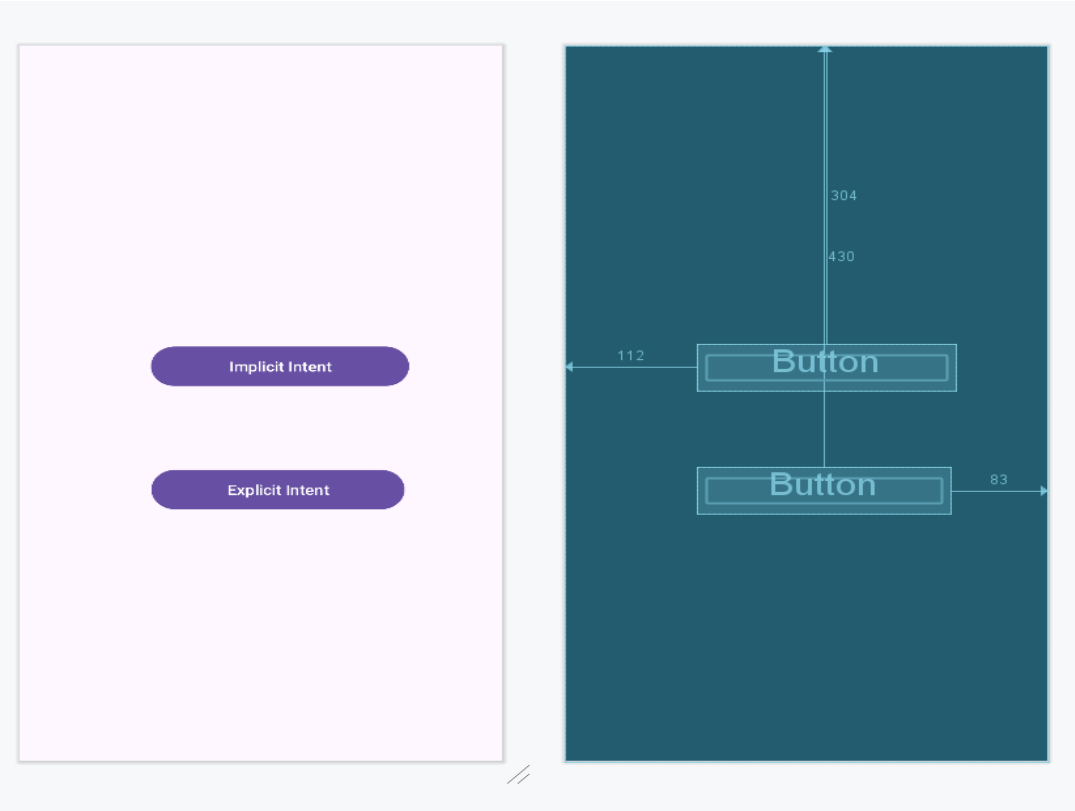
```
package com.example.loginapp;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

    }
}
```

OUTPUT


11:16
3G
USER NAME
Enter the Name
PASSWORD
Enter the Password
LOGIN

Program 04: Create an application to implement new activity using explicit intent and implicit intent.

Design



Code:

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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">


    <Button
        android:id="@+id/button"
        android:layout_width="220dp"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="112dp"
        android:layout_marginTop="304dp"
        android:onClick="onImplicitButtonClicked"
        android:text="Implicit Intent"
        tools:layout_editor_absoluteX="36dp"
        tools:layout_editor_absoluteY="286dp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="216dp"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_marginTop="430dp"
        android:layout_marginEnd="83dp"
        android:onClick="onExplicitButtonClicked"
        android:text="Explicit Intent"
        tools:layout_editor_absoluteX="248dp"
        tools:layout_editor_absoluteY="286dp" />

</RelativeLayout>
```

activity_new.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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">
    <TextView
        android:id="@+id/tV"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="20dp"
        android:text="Welcome to explicit intent"/>

</RelativeLayout>
```

MainActivity.java

```
package com.example.l4;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
   }
   public void onImplicitButtonClicked(View view) {
      Uri url = Uri.parse("https://www.google.com");
      Intent i = new Intent(Intent.ACTION_VIEW, url);
      startActivity(i);
   }
   public void onExplicitButtonClicked(View view) {
      Intent i=new Intent(MainActivity.this,MainActivity2.class);
      startActivity(i);
   }
}
```

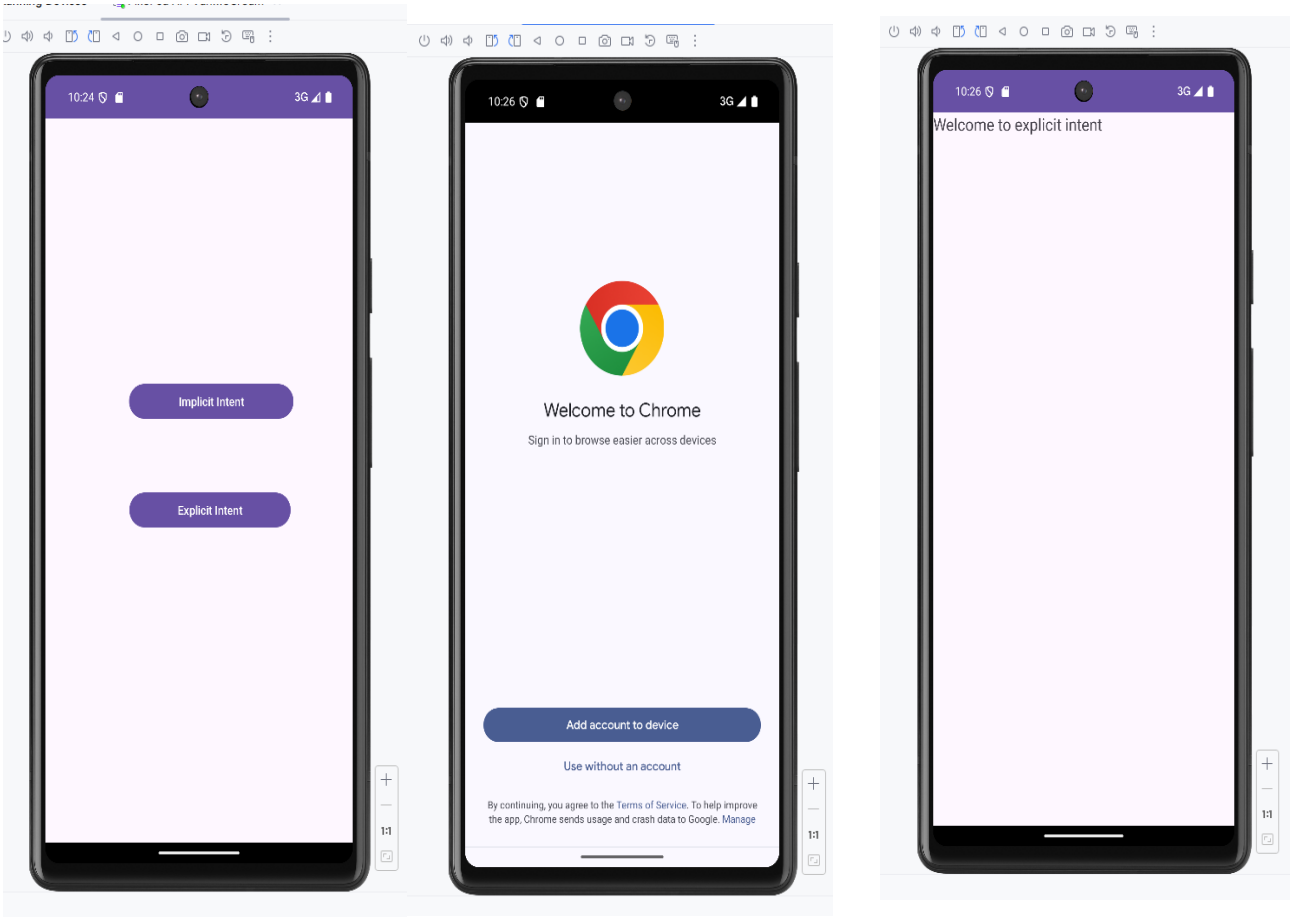
NewActivity.java

```
package com.example.l4;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity2 extends AppCompatActivity
{
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main2);

   }
}
```

AndroidManifest.xml

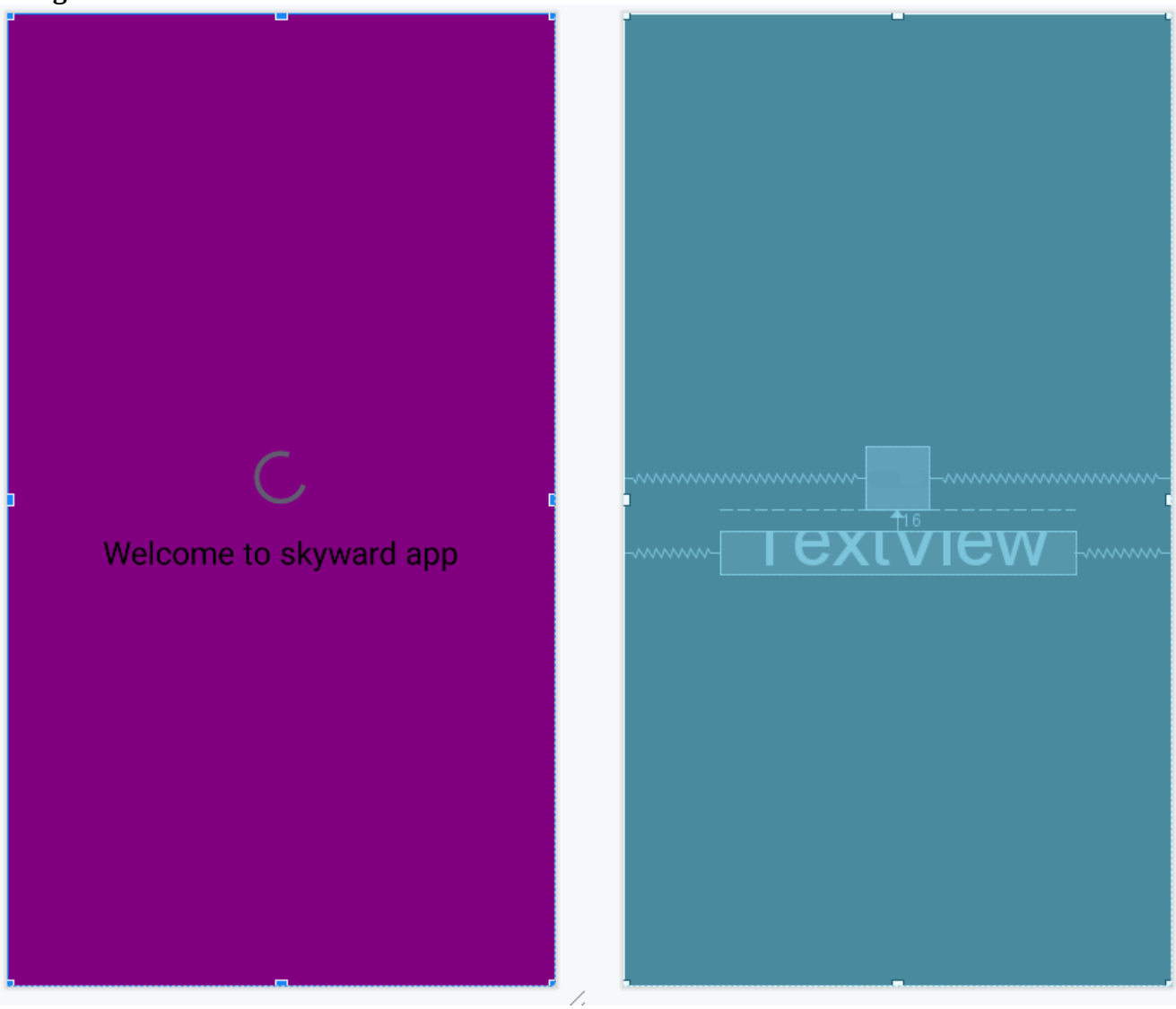
```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:tools="http://schemas.android.com/tools">

   <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:roundIcon="@mipmap/ic_launcher_round"
      android:supportsRtl="true"
      android:theme="@style/Theme.L4"
      tools:targetApi="31">
```

```
        <activity
            android:name=".MainActivity2"
            android:exported="false" />
        <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>
```



Program 05: Create an application that displays custom designed Opening Screen

Design



activity_main.xml

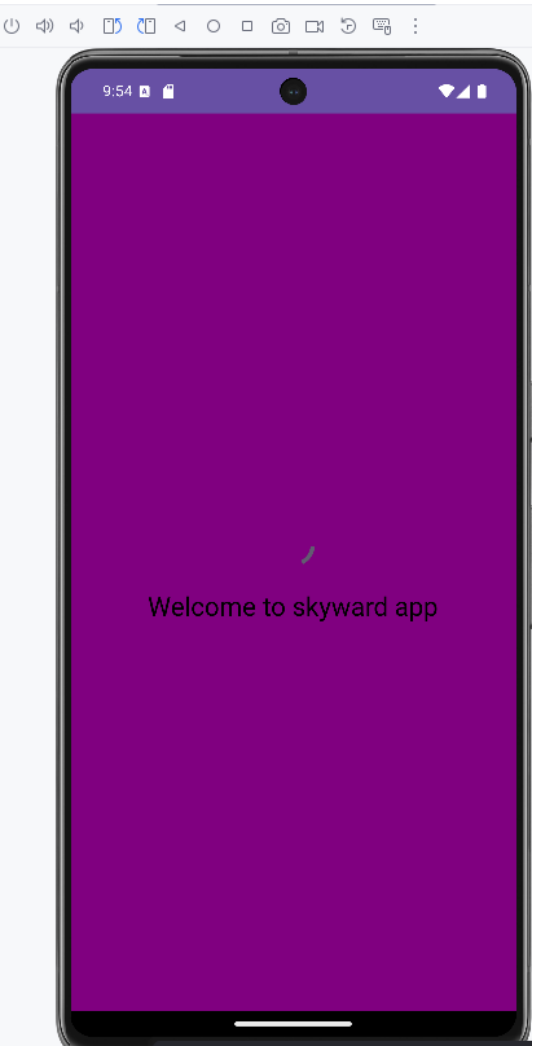
```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <RelativeLayout
        android:id="@+id/splash_screen"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#800080"
        android:gravity="center"
        android:padding="16dp">

        <ProgressBar
            android:id="@+id/progress_Bar"
            style="?android:attr/progressBarStyle"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginStart="16dp"
            android:layout_marginTop="16dp"
            android:layout_centerHorizontal="true"
```

```
        android:indeterminate="true"/>

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome to skyward app"
        android:textSize="24dp"
        android:textColor="#FF000000"
        android:layout_below="@+id/progress_Bar"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp"/>
  </RelativeLayout>

  <LinearLayout
    android:id="@+id/main_content"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:gravity="center"
    android:visibility="gone">

    <TextView
        android:id="@+id/welcome_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="welcome to the main activity"
        android:textSize="18sp"
        android:textColor="#0000FF"/>
  </LinearLayout>
</FrameLayout>
```

MainActivity.java

```
package com.example.splashscreen;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
  private static final int SPLASH_DISPLAY_LENGTH=10000;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    final View splashscreen=findViewById(R.id.splash_screen);
    final View mainContent=findViewById(R.id.main_content);
    new Handler().postDelayed(new Runnable()
    {
      @Override
      public void run()
      {
        splashscreen.setVisibility(View.GONE);
        mainContent.setVisibility(View.VISIBLE);
      }
    },SPLASH_DISPLAY_LENGTH);

  }
}
```

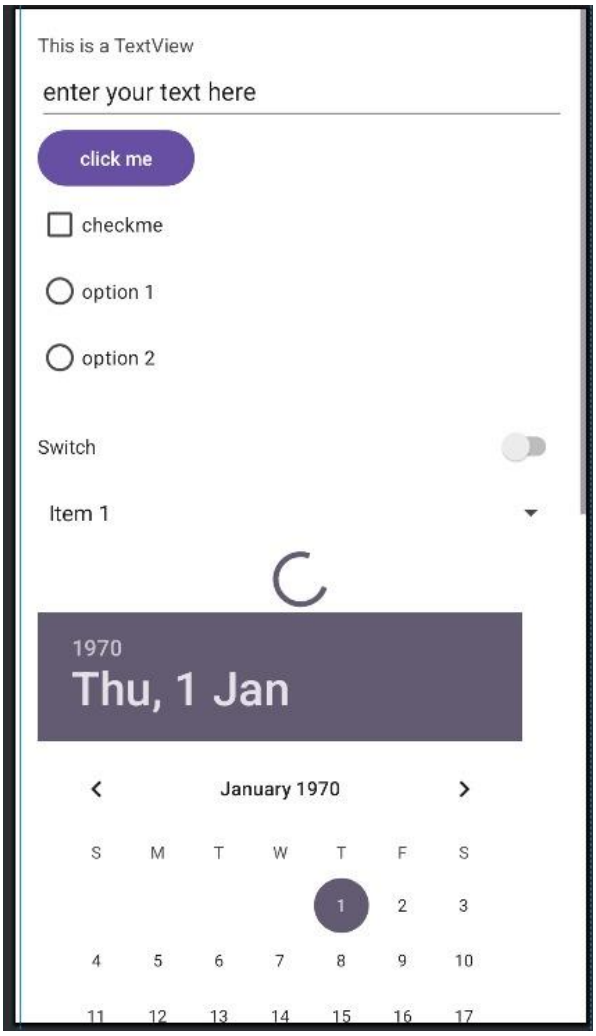
OUTPUT


9:54
Welcome to skyward app

9:53
welcome to the main activity
1:1

Program 06: Create an UI with All Views.

Design



activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="@color/white"
        android:orientation="vertical"
        android:padding="16dp">
```

```
    <TextView
        android:id="@+id/textView"
        android:layout_width="243dp"
        android:layout_height="wrap_content"
        android:text="This is a TextView" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="381dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="text"
        android:minHeight="48dp"
        android:text="enter your text here" />

    <Button
        android:id="@+id/button"
        android:layout_width="113dp"
        android:layout_height="wrap_content"
        android:text="click me" />

    <CheckBox
        android:id="@+id/checkBox"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="checkme" />
    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        android:layout_marginBottom="16dp">

    <RadioButton
        android:id="@+id/radioButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="option 1" />

    <RadioButton
        android:id="@+id/radioButton3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="option 2" />
</RadioGroup>
```

```
        <Switch
            android:id="@+id/switch1"
            android:layout_width="378dp"
            android:layout_height="wrap_content"
            android:minHeight="48dp"
            android:text="Switch" />

        <Spinner
            android:id="@+id/spinner"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:minHeight="48dp" />

        <ProgressBar
            android:id="@+id/progressBar"
            style="?android:attr/progressBarStyle"
            android:layout_width="match_parent"
            android:layout_height="wrap_content" />
        <DatePicker
            android:id="@+id/datepicker"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>
        <TimePicker
            android:id="@+id/timepicker"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"/>
        <NumberPicker
            android:id="@+id/numberpicker"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginBottom="16dp"/>
    </LinearLayout>
</ScrollView>
```

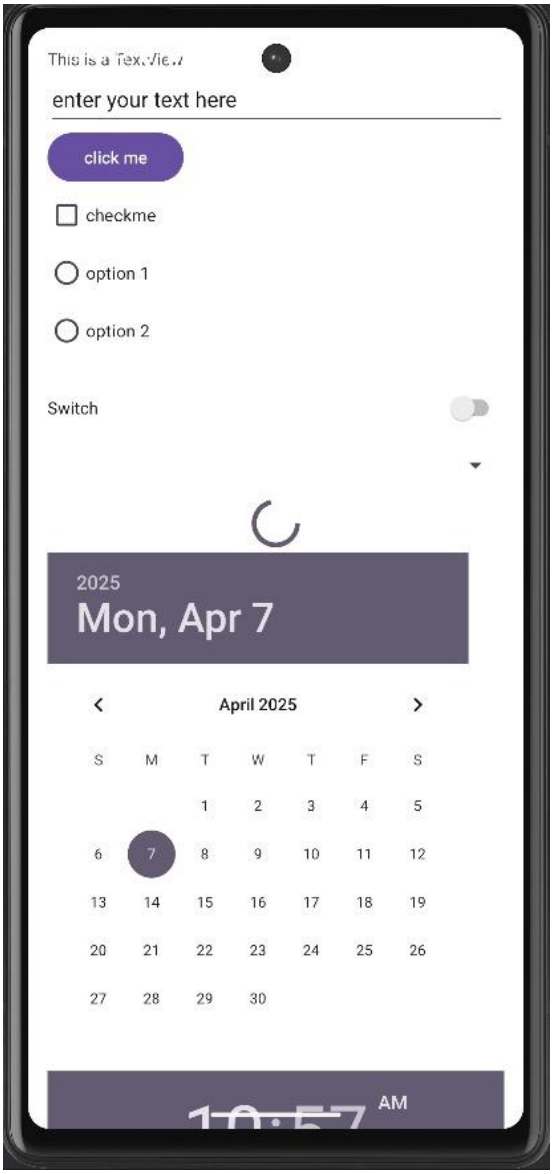
MainActivity.java

```
package com.example.timedate;
import android.os.Bundle;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.NumberPicker;
import android.widget.ProgressBar;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
```

```
import android.widget.Switch;
import android.widget.TextView;
import android.widget.TimePicker;
import androidx.appcompat.app.AppCompatActivity;
import com.example.timedate.R;
public class MainActivity extends AppCompatActivity {
   private TextView textView;
   private EditText editText;
   private Button button;private CheckBox checkBox;
   private RadioGroup radioGroup;
   private RadioButton radioButton1;
   private RadioButton radioButton2;
   private Switch switch1;
   private Spinner spinner;
   private ProgressBar progressBar;
   private DatePicker datePicker;
   private TimePicker timePicker;
   private NumberPicker numberPicker;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      textView = findViewById(R.id.textView);
      editText = findViewById(R.id.editText);
      button = findViewById(R.id.button);
      checkBox = findViewById(R.id.checkBox);
      radioGroup=findViewById(R.id.radioGroup);
      radioButton1 = findViewById(R.id.radioButton);
      radioButton2 =findViewById(R.id.radioButton3);
      switch1=findViewById(R.id.switch1);
      spinner =findViewById(R.id.spinner);
      progressBar = findViewById(R.id.progressBar);
      datePicker =findViewById(R.id.datepicker);
      timePicker = findViewById(R.id.timepicker);
      numberPicker =findViewById(R.id.numberpicker);
      numberPicker.setMinValue(0);
      numberPicker.setMaxValue (100);
   }

}
```

OUTPUT

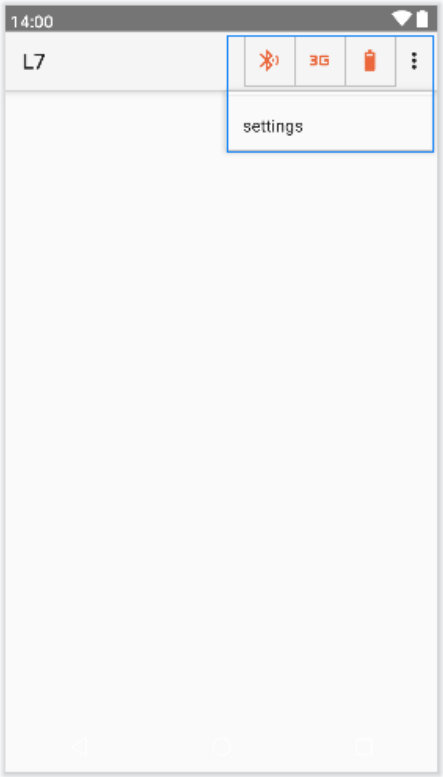
April 2025
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
10:57
AM
PM
12 1 2 3 4 5 6 7 8 9 10 11
100
0
1


enter your text here
click me
checkme
option 1
option 2
Switch
2025
Mon, Apr 7
April 2025
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
AM

Program 07: Create menu in Application

Design - activity_main

Design – menus



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:id="@+id/main"
   android:layout_width="match_parent"
   android:layout_height="match_parent"

   android:background="@drawable/e_commerce"
   tools:context=".MainActivity">


   <TextView
      android:id="@+id/textView"
      android:layout_width="286dp"
      android:layout_height="65dp"
      android:layout_alignParentStart="true"
      android:layout_alignParentTop="true"
      android:layout_marginStart="59dp"
      android:layout_marginTop="63dp"
      android:text="Welcome to E-Commerce"
      android:textColor="#F11D1D"
      android:textColorLink="#F31818"
      android:textSize="24sp"
      android:textStyle="bold|italic" />

</RelativeLayout>
```

menus.xml

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto">
      <item
         android:id="@+id/search"
         android:icon="@drawable/search"
         app:showAsAction="always"
         android:title="search" />
      <item android:id="@+id/Refresh"
         android:title="Refresh"
         android:icon="@drawable/refresh"
         app:showAsAction="always" />
      <item android:id="@+id/Addtocart"
         android:title="Addtocart"/>
      <item android:id="@+id/settings"
         android:title="settings"/>
</menu>
```

MainActivity.java

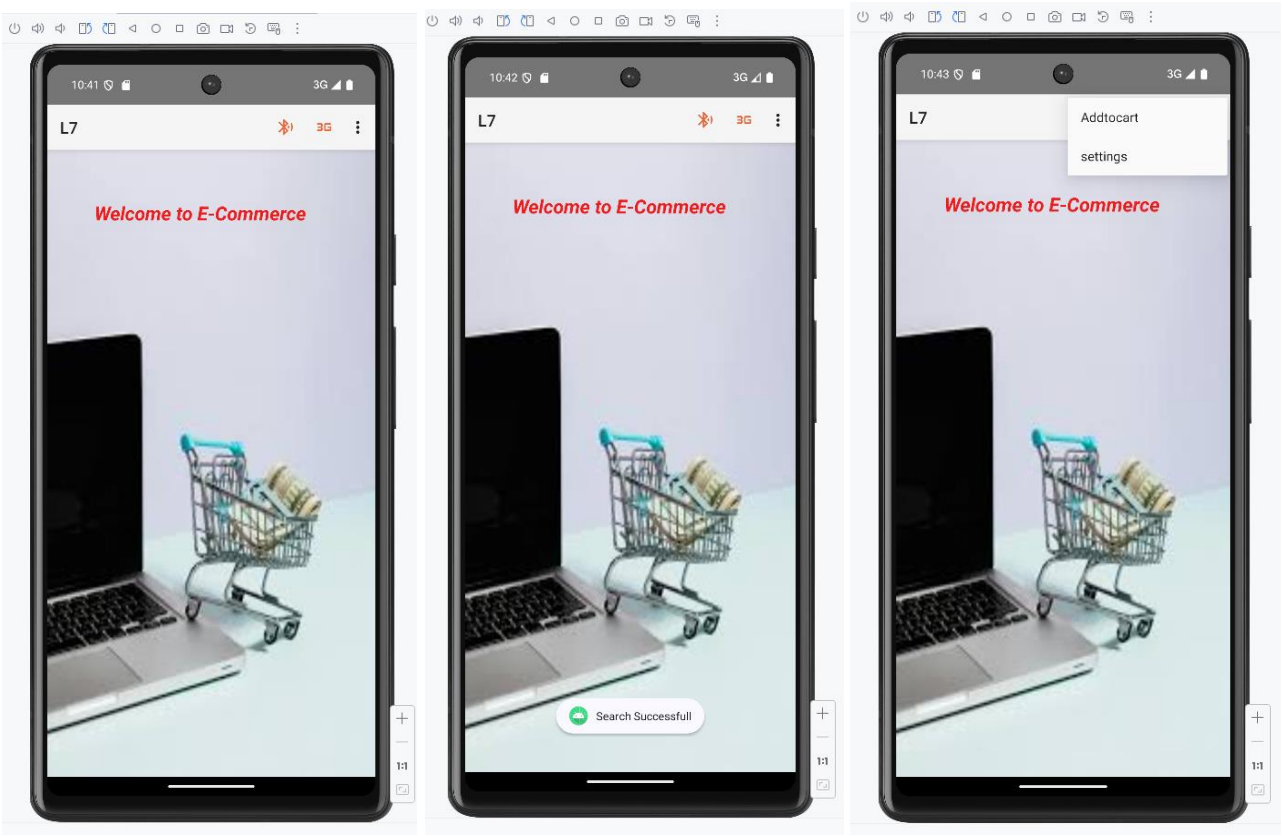
```
package com.example.l7;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
    @Override
    public boolean onCreatePanelMenu(int featureId, @NonNull Menu menu) {
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.menus, menu);
        return true;
    }
    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if (item.getItemId() == R.id.search) {
            Toast.makeText(this, "Search Successfull", Toast.LENGTH_SHORT).show();
        }
        if (item.getItemId() == R.id.Refresh) {
            Toast.makeText(this, "Refresh Successfull", Toast.LENGTH_SHORT).show();
        }
        if (item.getItemId() == R.id.Addtocart) {
            Toast.makeText(this, "Addtocart Successfull", Toast.LENGTH_SHORT).show();
        }
        if (item.getItemId() == R.id.settings) {
            Toast.makeText(this, "Settings Clicked", Toast.LENGTH_SHORT).show();
        }
        return super.onOptionsItemSelected(item);
    }
}
```

AndroidManifest.xml

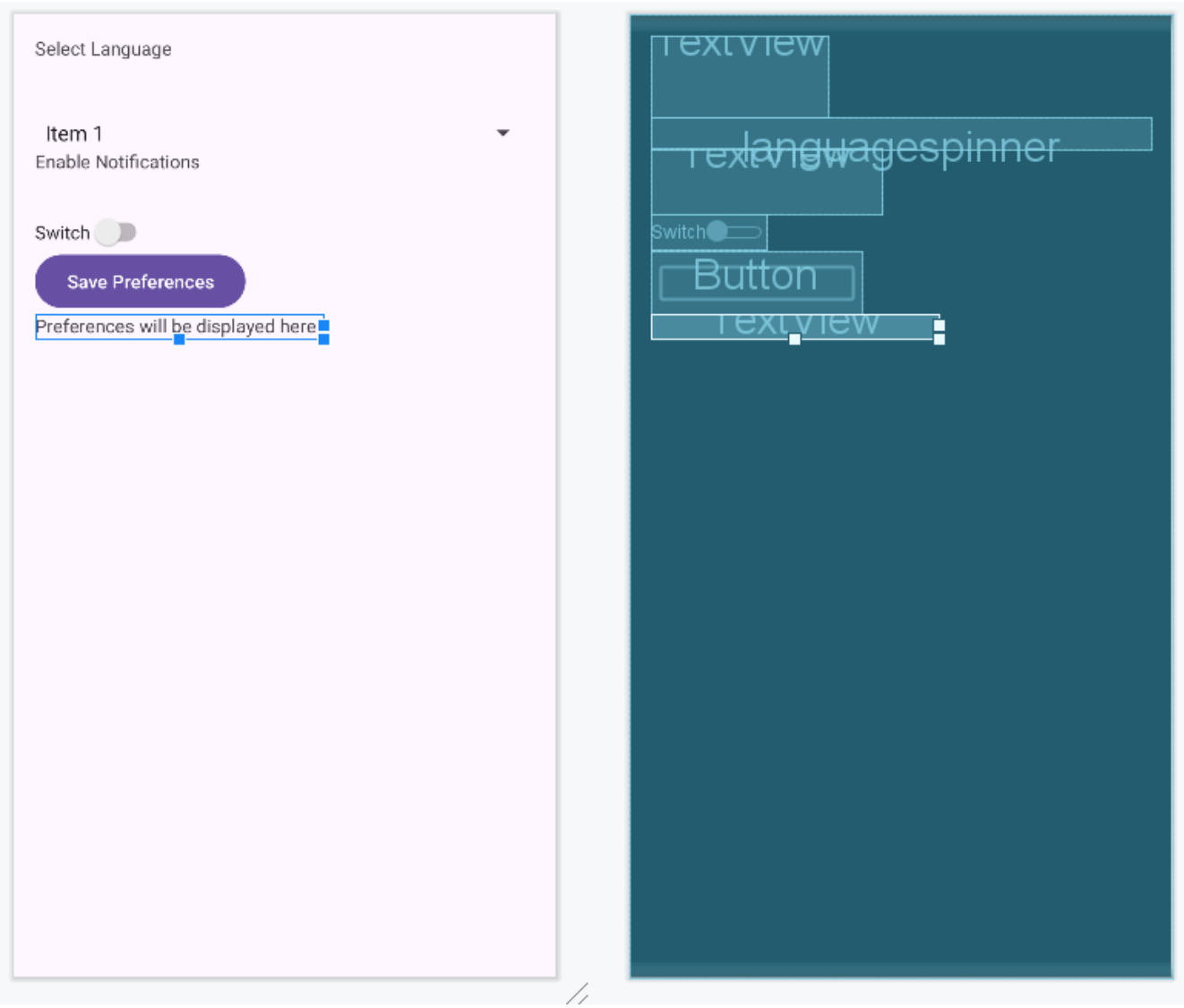
```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <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:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.AppCompat.Light"
        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>
```

OUTPUT


10:41
3G
L7
Welcome to E-Commerce
10:42
3G
L7
Welcome to E-Commerce
Search Successfull
10:43
3G
L7
Addtocart
settings
Welcome to E-Commerce

Program 08: Read/Write the local data.

Design –



activity_main.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="134dp"
        android:layout_height="62dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Select Language" />
```

```
    <Spinner
        android:id="@+id/languagespinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="175dp"
        android:layout_height="50dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Enable Notifications" />

    <Switch
        android:id="@+id/notificationswitch"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Switch" />

    <Button
        android:id="@+id/savebutton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Save Preferences" />

    <TextView
        android:id="@+id/preferenceTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Preferences will be displayed here." />
</LinearLayout>
```

String.xml

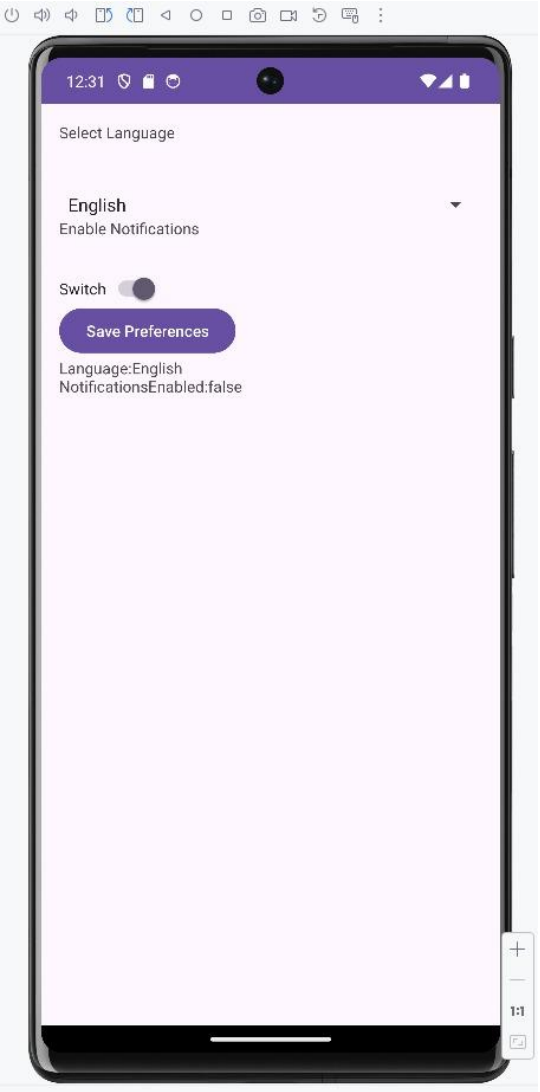
```
<resources>
    <string name="app_name">userprefrence</string>
    <string-array name="languages">
        <item>English</item>
        <item>Spanish</item>
        <item>French</item>
        <item>german</item>
        <item>Chinese</item>
    </string-array>
</resources>
```

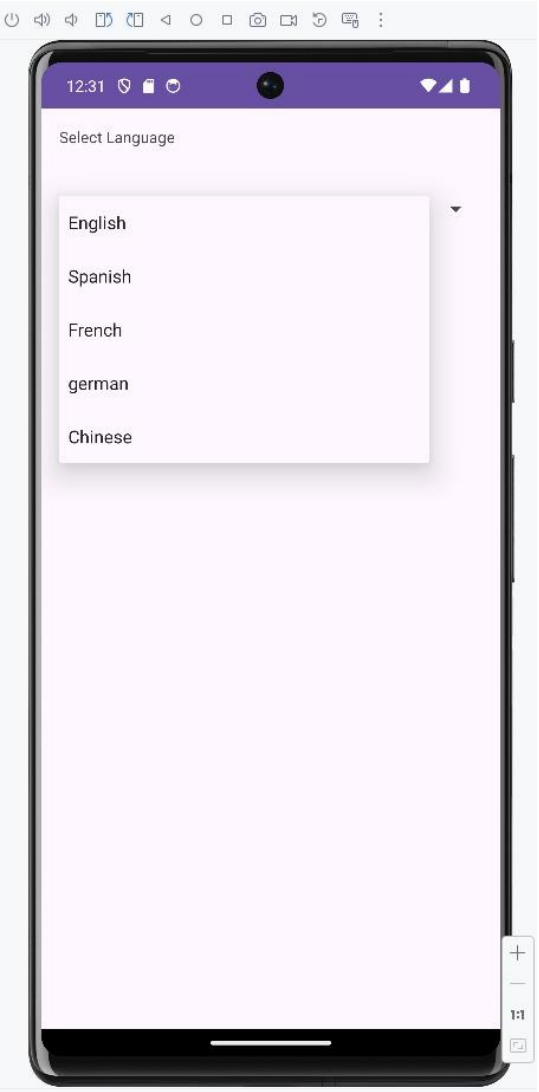
MainActivity.java

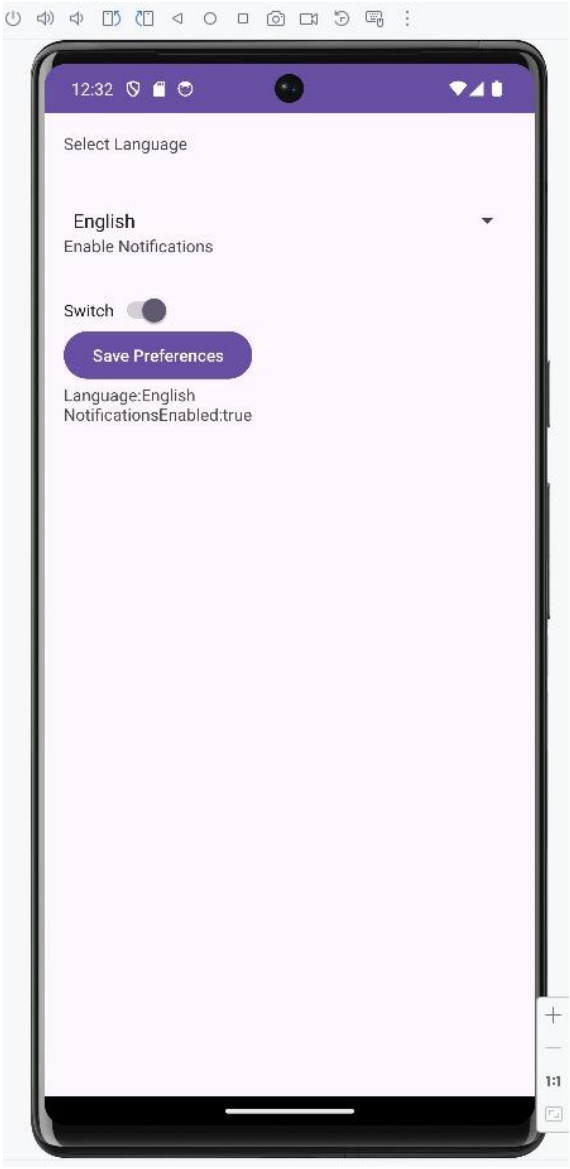
```
package com.example.userprefrence;
import android.content.Context;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.Spinner;
import android.widget.Switch;
import android.widget.TextView;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity
{
  private Spinner languageSpinner;
  private Switch notificationsSwitch;
  private TextView preferencesTextView;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        languageSpinner = findViewById(R.id.languagespinner);
        notificationsSwitch = findViewById(R.id.notificationswitch);
        preferencesTextView = findViewById(R.id.preferenceTextView);
        Button saveButton = findViewById(R.id.savebutton);
        loadUserPreferences();
        saveButton.setOnClickListener(v -> saveUserPreferences());
    }
    private void saveUserPreferences()
    {
        String language = languageSpinner.getSelectedItem().toString();
        boolean notificationsEnabled = notificationsSwitch.isChecked();
        SharedPreferences sharedPreferences = getSharedPreferences("UserPreferences",
Context.MODE_PRIVATE);
        SharedPreferences.Editor editor = sharedPreferences.edit();
        editor.putString("language", language);
        editor.putBoolean("notificationsEnabled", notificationsEnabled);
        editor.apply();
        preferencesTextView.setText(String.format("Language:%s\nNotificationsEnabled:%b", language,
notificationsEnabled));
    }
    private void loadUserPreferences()
    {
        SharedPreferences
sharedPreferences=getSharedPreferences("UserPreferences",Context.MODE_PRIVATE);
        String language=sharedPreferences.getString("language","English");
        boolean notificationsEnabled=sharedPreferences.getBoolean("notificationsEnabled",false);
        ArrayAdapter<CharSequence> adapter=ArrayAdapter.createFromResource(this,R.array.languages,
android.R.layout.simple_spinner_item);
```

```
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        languageSpinner.setAdapter(adapter);
        int spinnerPosition=adapter.getPosition(language);
        languageSpinner.setSelection(spinnerPosition);
        notificationsSwitch.setChecked(notificationsEnabled);

preferencesTextView.setText(String.format("Language:%s\nNotificationsEnabled:%b",language,notificat
ionsEnabled));


    }
}
```

OUTPUT

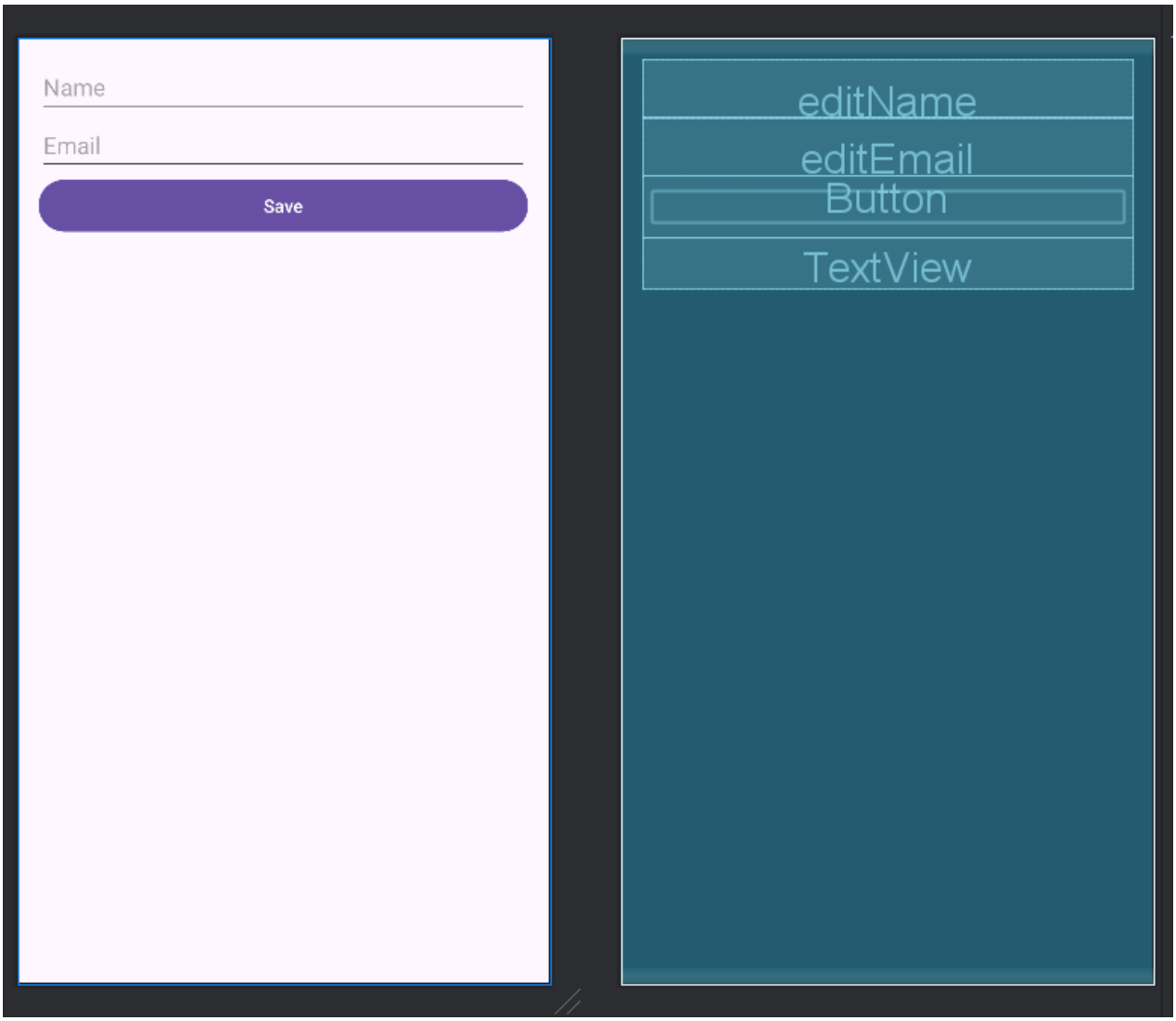





12:32
Select Language
English
Enable Notifications
Switch
Save Preferences
Language:English
NotificationsEnabled:true
1:1

Program 9: Create/Read/Write data with database(SQLite)

Design :



activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:padding="16dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <EditText
        android:id="@+id/editName"
        android:hint="Name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <EditText
        android:id="@+id/editEmail"
        android:hint="Email"
        android:inputType="textEmailAddress"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
    <Button
        android:id="@+id/buttonSave"
        android:text="Save"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
    <TextView
```

```
        android:id="@+id/textViewResult"
        android:text=""
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:paddingTop="20dp"/>
</LinearLayout>
```

MainActivity.java

```
package com.example.db;
import android.os.Bundle;
import android.widget.Button;
import android.widget.TextView;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    EditText editName, editEmail;
    Button buttonSave;
    TextView textViewResult;
    SQLiteHelper dbHelper;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editName = findViewById(R.id.editName);
        editEmail = findViewById(R.id.editEmail);
        buttonSave = findViewById(R.id.buttonSave);
        textViewResult = findViewById(R.id.textViewResult);
        dbHelper = new SQLiteHelper(this);
        buttonSave.setOnClickListener(v -> {
            String name = editName.getText().toString();
            String email = editEmail.getText().toString();
            dbHelper.insertUser(name, email);
            String allUsers = dbHelper.getAllUsers();
            textViewResult.setText(allUsers);
        });
    }
}
```

SQLiteHelper.java

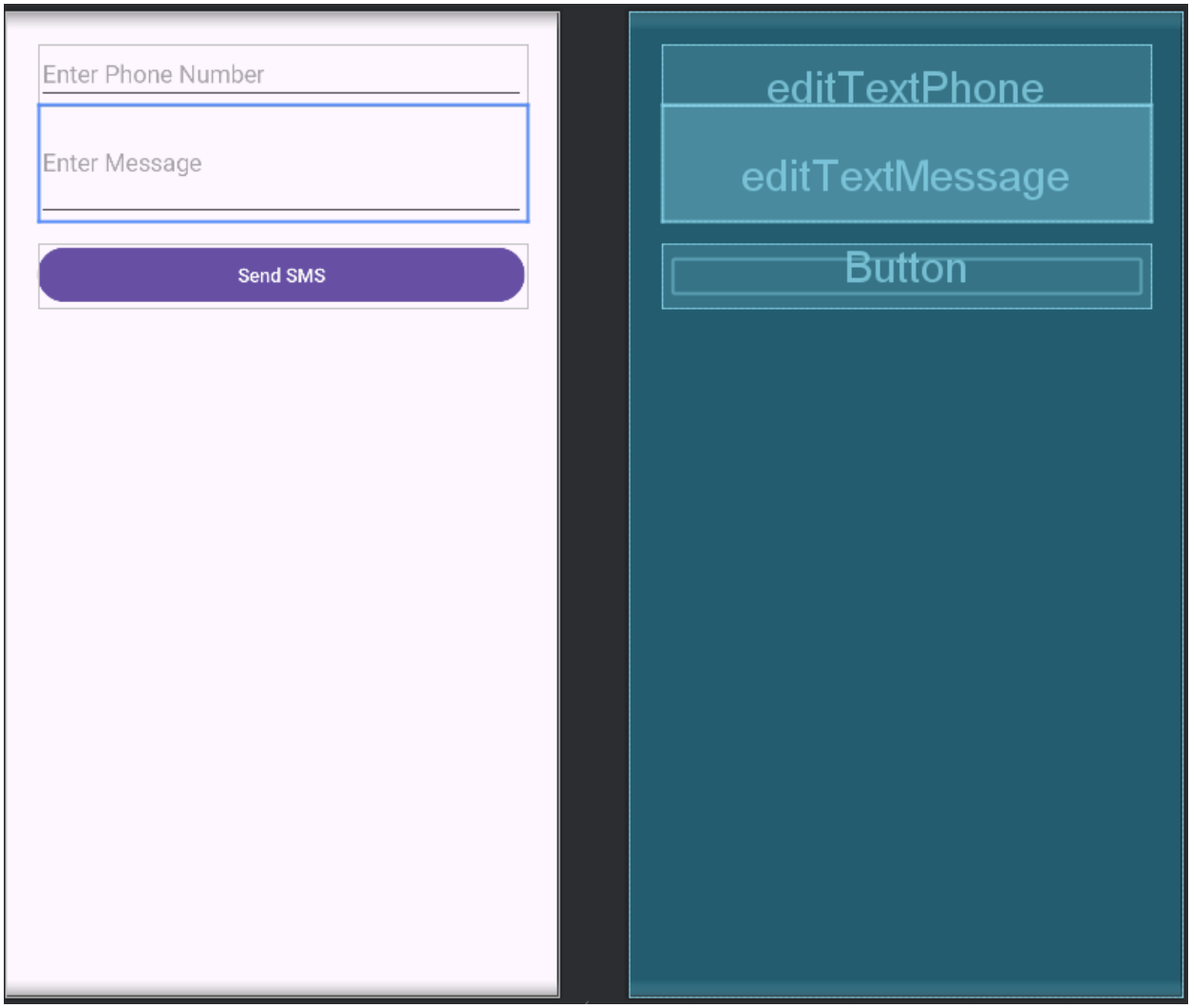
```
package com.example.db;
import android.database.sqlite.SQLiteDatabase;
import android.content.Context;
import android.content.ContentValues;
import android.database.sqlite.SQLiteOpenHelper;
import android.database.Cursor;
public class SQLiteHelper extends SQLiteOpenHelper {
    private static final String DB_NAME = "UserDB";
    private static final int DB_VERSION = 1;
    public SQLiteHelper(Context context) {
        super(context, DB_NAME, null, DB_VERSION);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("CREATE TABLE users (id INTEGER PRIMARY KEY AUTOINCREMENT, name
TEXT, email TEXT)");
    }
    @Override
```

```
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS users");
        onCreate(db);
    }
    public void insertUser(String name, String email) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues values = new ContentValues();
        values.put("name", name);
        values.put("email", email);
        db.insert("users", null, values);
    }
    public String getAllUsers() {
        SQLiteDatabase db = this.getReadableDatabase();
        Cursor cursor = db.rawQuery("SELECT * FROM users", null);
        StringBuilder sb = new StringBuilder();

        while (cursor.moveToNext()) {
            sb.append("ID: ").append(cursor.getInt(0))
                    .append(", Name: ").append(cursor.getString(1))
                    .append(", Email: ").append(cursor.getString(2))
                    .append("\n");
        }
        cursor.close();
        return sb.toString();
    }
}
```

OUTPUT

Program 10: Create an application to send SMS and Receive SMS.

Design:



activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="24dp">

    <EditText
        android:id="@+id/editTextPhone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Phone Number"
        android:inputType="phone"/>

    <EditText
        android:id="@+id/editTextMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Message"
        android:inputType="textMultiLine"
```

```
        android:minLines="3"/>

    <Button
        android:id="@+id/buttonSend"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Send SMS"
        android:layout_marginTop="16dp"/>
</LinearLayout>
```

MainActivity.java

```
package com.example.sms;
import android.Manifest;
import android.annotation.SuppressLint;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
public class MainActivity extends AppCompatActivity {

    EditText phoneNumberEditText, messageEditText;
    Button sendButton;
    private static final int SMS_PERMISSION_CODE = 100;
    private String permission;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        phoneNumberEditText = findViewById(R.id.editTextPhone);
        messageEditText = findViewById(R.id.editTextMessage);
        sendButton = findViewById(R.id.buttonSend);

        sendButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (checkPermission(Manifest.permission.SEND_SMS)) {
                    sendSMS();
                } else {
                    ActivityCompat.requestPermissions(MainActivity.this,
                            new String[]{Manifest.permission.SEND_SMS}, SMS_PERMISSION_CODE);
                }
            }
        });
    }
    private boolean checkPermission(String permission) {
```

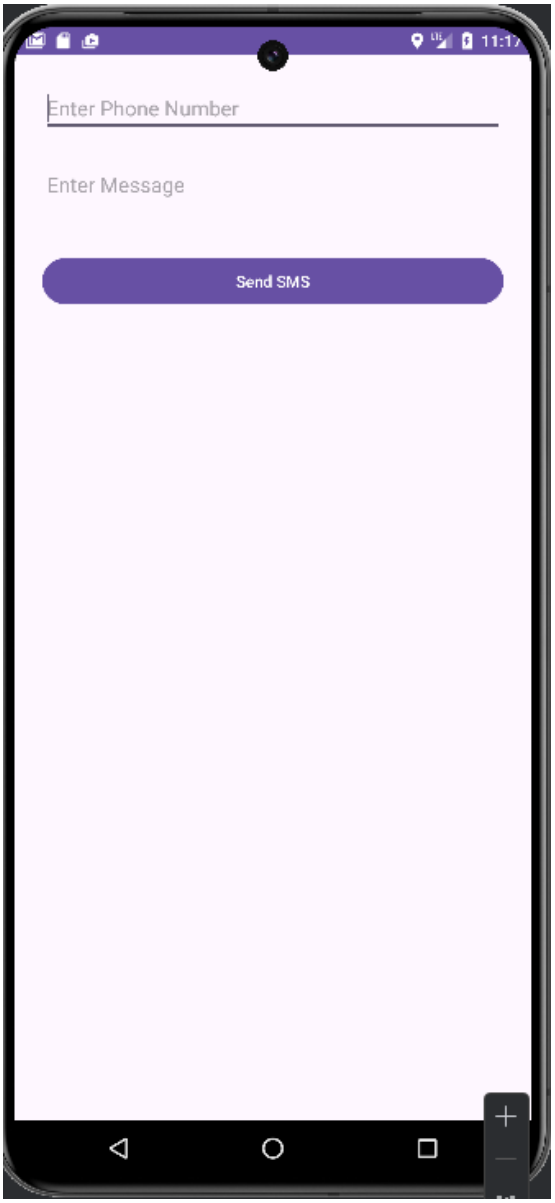
```
        this.permission = permission;
        int check = ContextCompat.checkSelfPermission(this, permission);
        return (check == PackageManager.PERMISSION_GRANTED);
    }
    private void sendSMS() {
        String phoneNumber = phoneNumberEditText.getText().toString();
        String message = messageEditText.getText().toString();

        try {
            SmsManager smsManager = SmsManager.getDefault();
            smsManager.sendTextMessage(phoneNumber, null, message, null, null);
            Toast.makeText(this, "SMS Sent!", Toast.LENGTH_SHORT).show();
        } catch (Exception e) {
            Toast.makeText(this, "Failed to send SMS: " + e.getMessage(), Toast.LENGTH_LONG).show();
        }
    }
    @SuppressLint("MissingSuperCall")
    @Override

    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull
int[] grantResults) {
        if (requestCode == SMS_PERMISSION_CODE) {
            if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED)
{
                sendSMS();
            } else {
                Toast.makeText(this, "SMS permission denied", Toast.LENGTH_SHORT).show();
            }
        }
    }
}
```

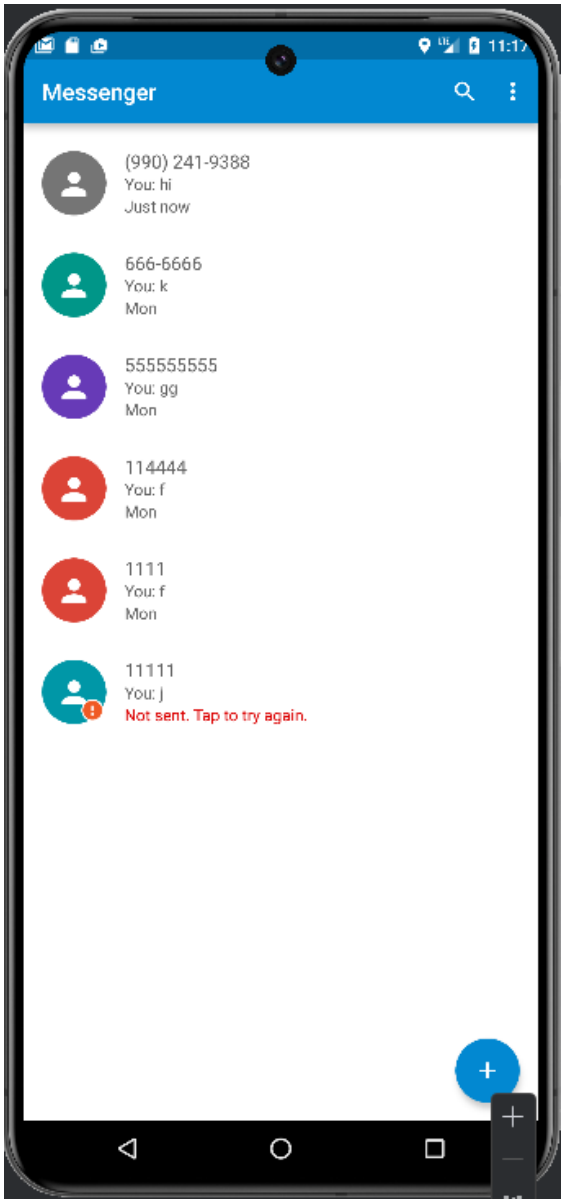
AndroidManifest.xml

```
<?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-permission android:name="android.permission.SEND_SMS"
        tools:ignore="PermissionImpliesUnsupportedChromeOsHardware" />
    <uses-permission android:name="android.permission.READ_PHONE_STATE"/>
    <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:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Sms"
        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>
```

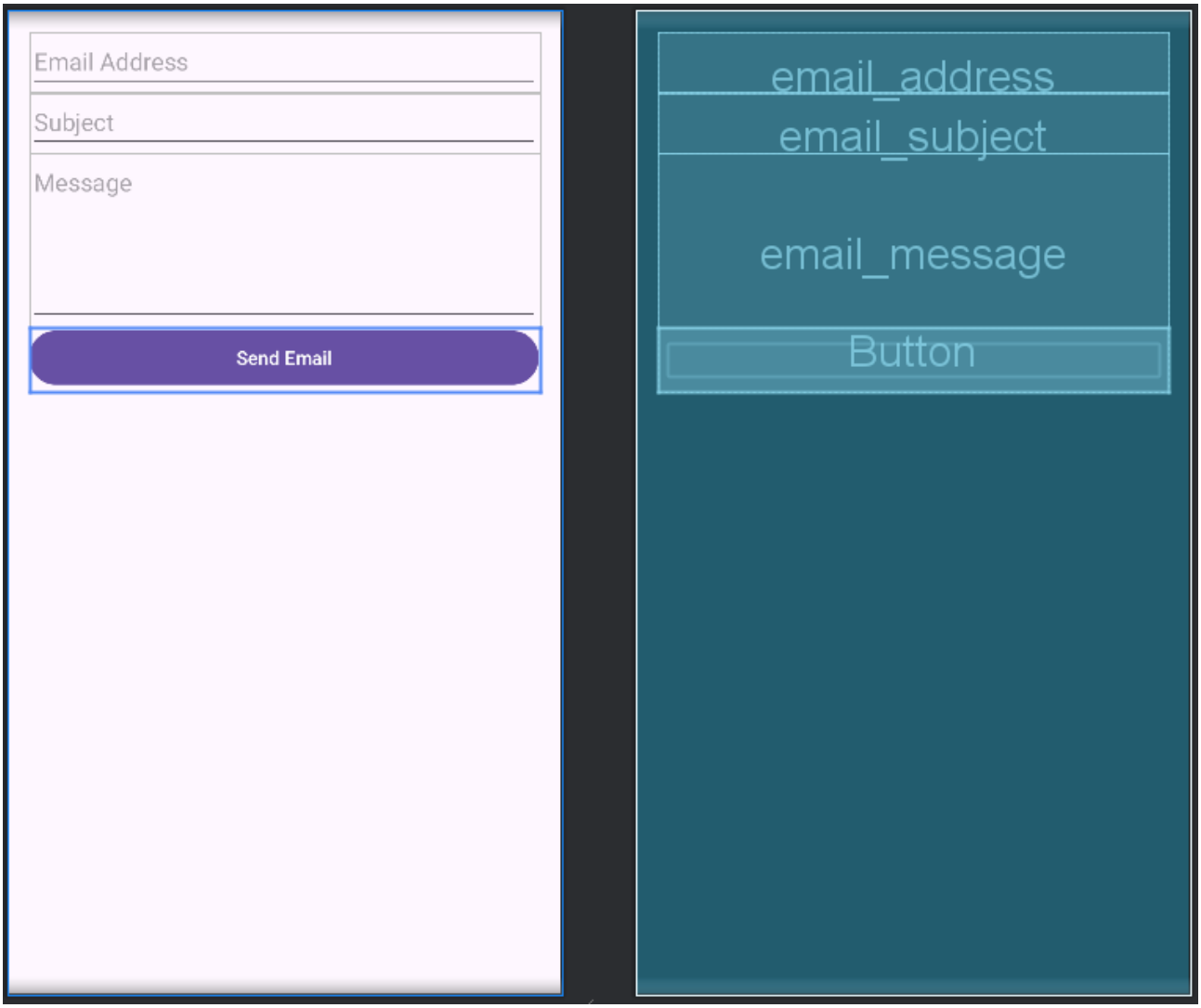
OUTPUT





Program 11: Create an application to send a Email.

Design



activity_main.xml

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

    <EditText
        android:id="@+id/email_address"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Email Address"
        android:inputType="textEmailAddress" />

    <EditText
        android:id="@+id/email_subject"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Subject"
        android:inputType="text" />

    <EditText
        android:id="@+id/email_message"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Message"
        android:inputType="textMultiLine"
        android:lines="5"
        android:gravity="top"
        android:scrollbars="vertical" />

    <Button
        android:id="@+id/send_email"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Send Email" />
</LinearLayout>
```

MainActivity.java

```
package com.example.email;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import com.example.email.R;
public class MainActivity extends AppCompatActivity {

    private EditText emailAddressEditText;
    private EditText emailSubjectEditText;
    private EditText emailMessageEditText;
    private Button sendEmailButton;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

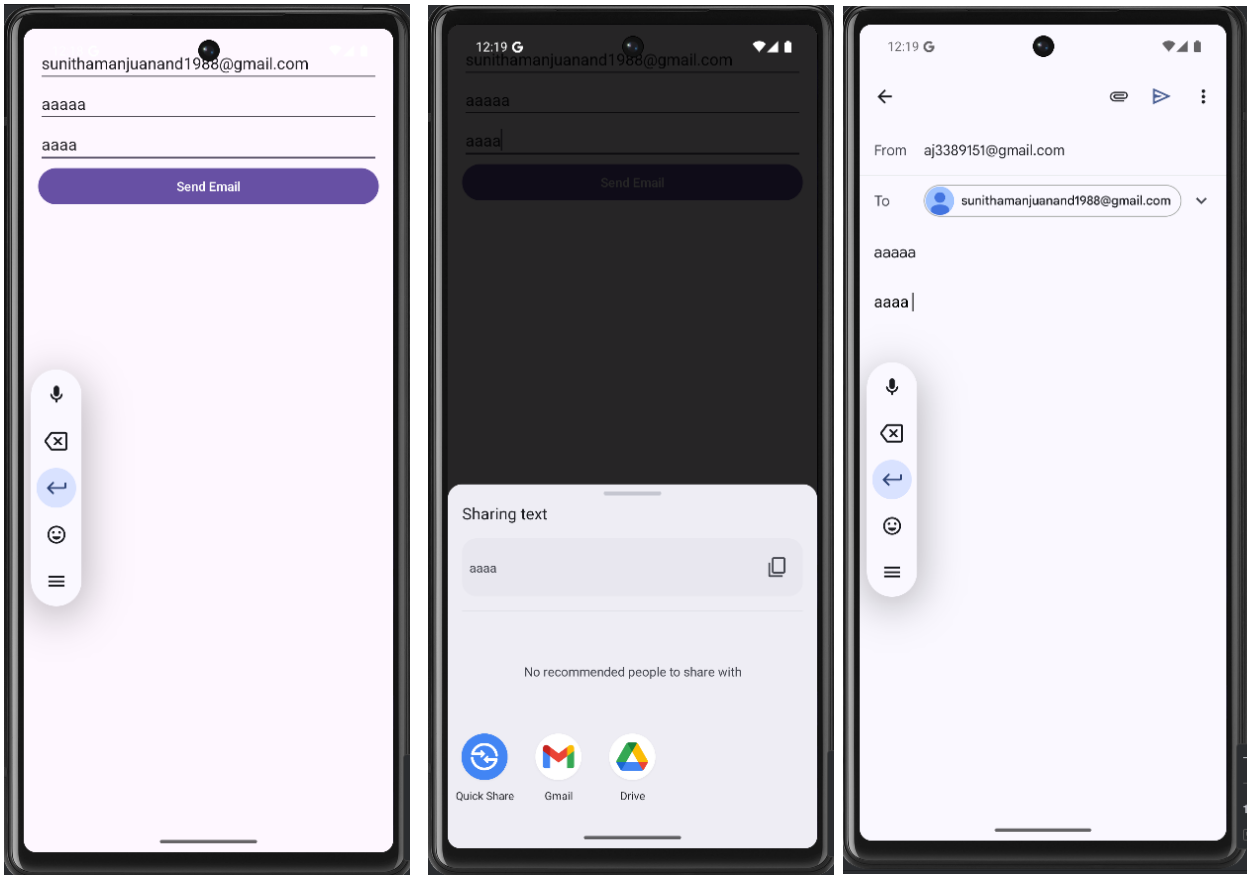
```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        emailAddressEditText = findViewById(R.id.email_address);
        emailSubjectEditText = findViewById(R.id.email_subject);
        emailMessageEditText = findViewById(R.id.email_message);
        sendEmailButton = findViewById(R.id.send_email);
        sendEmailButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                sendEmail();
            }
        });
    }
    private void sendEmail() {
        String emailAddress = emailAddressEditText.getText().toString();
        String subject = emailSubjectEditText.getText().toString();
        String message = emailMessageEditText.getText().toString();
        Intent emailIntent = new Intent(Intent.ACTION_SEND);
        emailIntent.setType("message/rfc822");
        emailIntent.putExtra(Intent.EXTRA_EMAIL, new String[]{emailAddress});
        emailIntent.putExtra(Intent.EXTRA_SUBJECT, subject);
        emailIntent.putExtra(Intent.EXTRA_TEXT, message);

        if (emailIntent.resolveActivity(getPackageManager()) != null) {
            startActivity(Intent.createChooser(emailIntent, "Send Email Using:"));
        } else {
            Toast.makeText(this, "Email Client Not Installed", Toast.LENGTH_SHORT).show();
        }
    }
}
```

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-permission android:name="android.permission.SEND_SMS"
        tools:ignore="PermissionImpliesUnsupportedChromeOsHardware" />
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
```

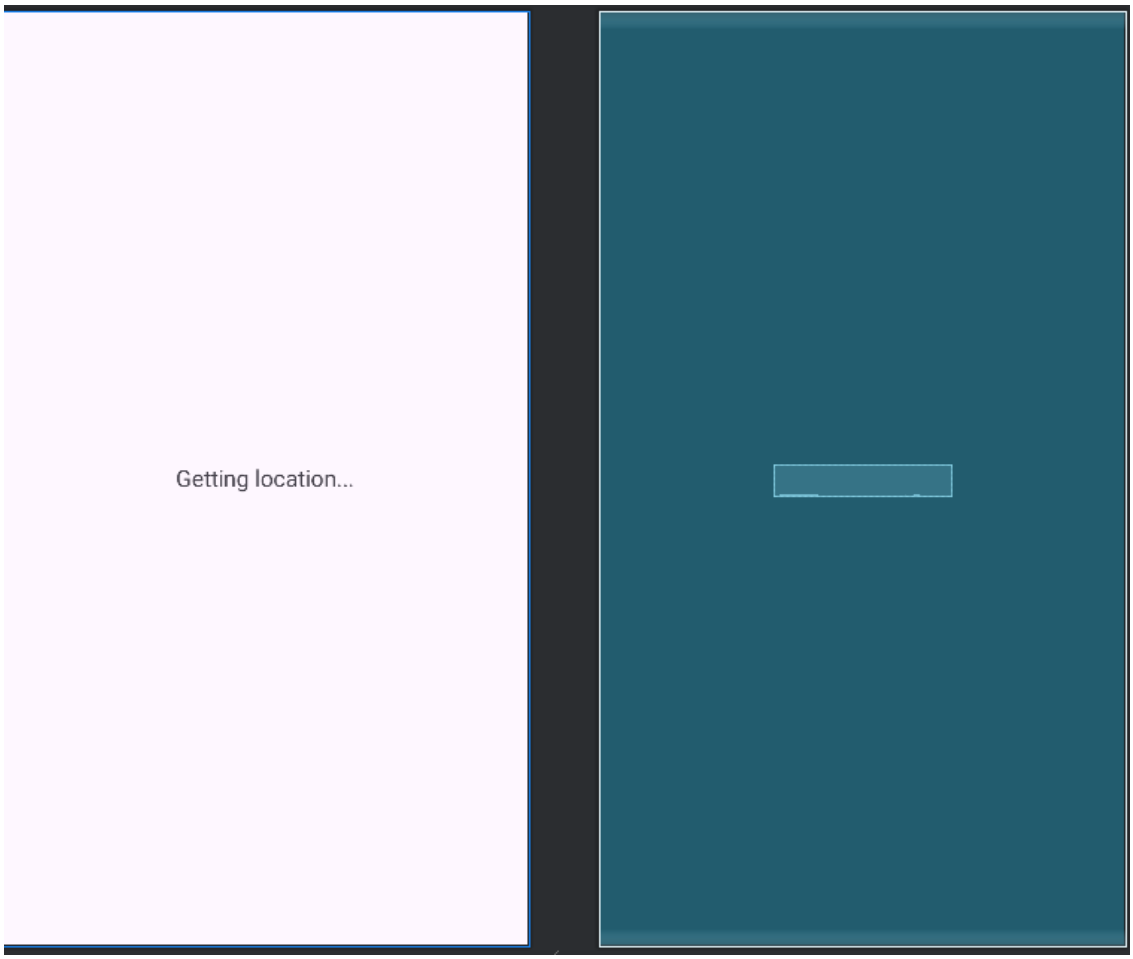
```
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Email"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

OUTPUT



Program 12: Display Map based on the Current/given location.

Design



activity_main.xml

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

    <TextView
        android:id="@+id/location_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Getting location..."
        android:textSize="18sp" />
</LinearLayout>
```

MainActivity.java

```
package com.example.loc;
import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
```

```
import android.widget.TextView;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
public class MainActivity extends AppCompatActivity {
    private static final int LOCATION_PERMISSION_CODE = 1;
    private LocationManager locationManager;
    private LocationListener locationListener;
    private TextView locationText;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        locationText = findViewById(R.id.location_text);
        locationManager = (LocationManager) getSystemService(LOCATION_SERVICE);
        locationListener = new LocationListener() {
            @Override
            public void onLocationChanged(@NonNull Location location) {
                double lat = location.getLatitude();
                double lon = location.getLongitude();
                locationText.setText("Latitude: " + lat + "\nLongitude: " + lon);
            }
        };
        // Check permissions
        if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)
!= PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(this,
                    new String[]{Manifest.permission.ACCESS_FINE_LOCATION},
LOCATION_PERMISSION_CODE);
        } else {
            startLocationUpdates();
        }
    }
    private void startLocationUpdates() {
        if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)
== PackageManager.PERMISSION_GRANTED) {
            locationManager.requestLocationUpdates(
                    LocationManager.GPS_PROVIDER,
                    5000,   // Time interval (ms)
                    5,      // Distance (meters)
                    locationListener);
        }
    }
    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull
int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);

        if (requestCode == LOCATION_PERMISSION_CODE) {
            if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED)
{
                startLocationUpdates();
```

```
            } else {
                Toast.makeText(this, "Location permission denied.", Toast.LENGTH_SHORT).show();
            }
        }
    }
    }
```

AndroidManifest.xml

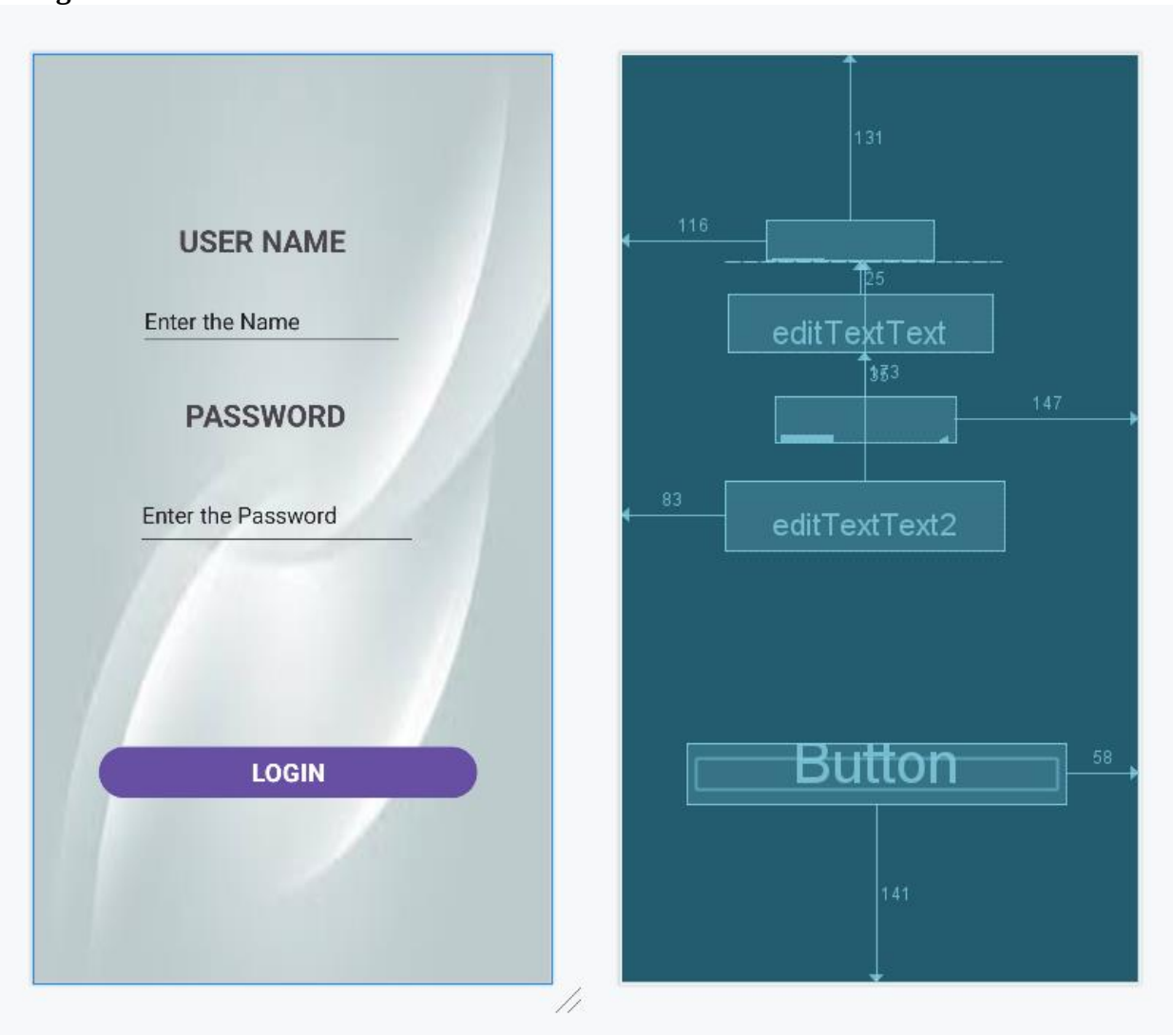
```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
    <uses-permission android:name="android.permission.INTERNET"/>
    <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:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Loc"
        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>
```

OUTPUT

11:30
Latitude: 37.421998333333335
Longitude: -122.08400000000002

Program 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 Toast “login fail”

Design



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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@drawable/login1"
    tools:context=".MainActivity">


    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="116dp"
        android:layout_marginTop="131dp"
        android:text="USER NAME"
```

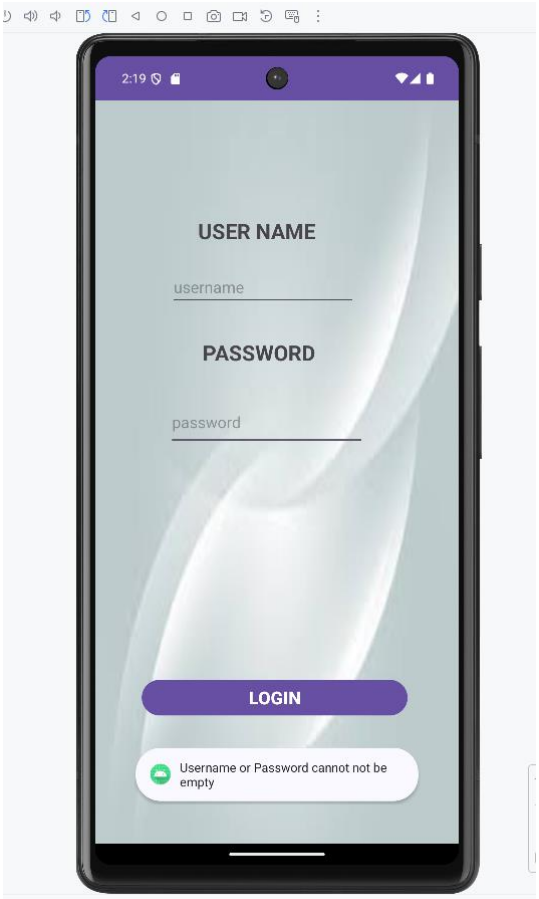
```
        android:textSize="24sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/textView"
        android:layout_marginStart="85dp"
        android:layout_marginTop="25dp"
        android:ems="10"
        android:hint="username"
        android:inputType="text"
        android:text="Enter the Name" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="143dp"
        android:layout_height="36dp"
        android:layout_below="@id/editTextText"
        android:layout_alignParentEnd="true"
        android:layout_marginTop="35dp"
        android:layout_marginEnd="147dp"
        android:text="PASSWORD"
        android:textSize="24sp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/editTextText2"
        android:layout_width="222dp"
        android:layout_height="55dp"
        android:layout_below="@id/textView"
        android:layout_alignParentStart="true"
        android:layout_marginStart="83dp"
        android:layout_marginTop="173dp"
        android:ems="10"
        android:hint="password"
        android:inputType="text"
        android:text="Enter the Password" />

    <Button
        android:id="@+id/button"
        android:layout_width="301dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="58dp"
        android:layout_marginBottom="141dp"
        android:text="LOGIN"
        android:textSize="20sp"
        android:textStyle="bold" />
</RelativeLayout>
```

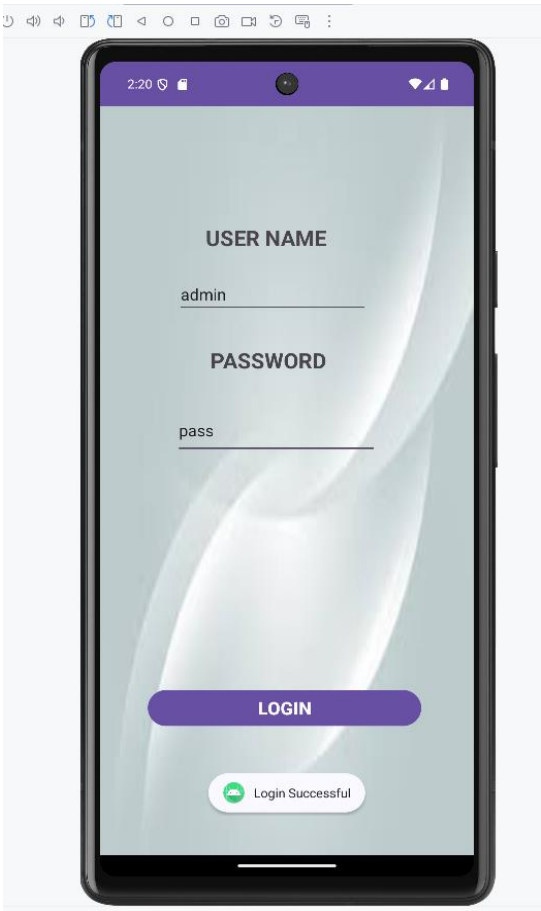
MainActivity.java

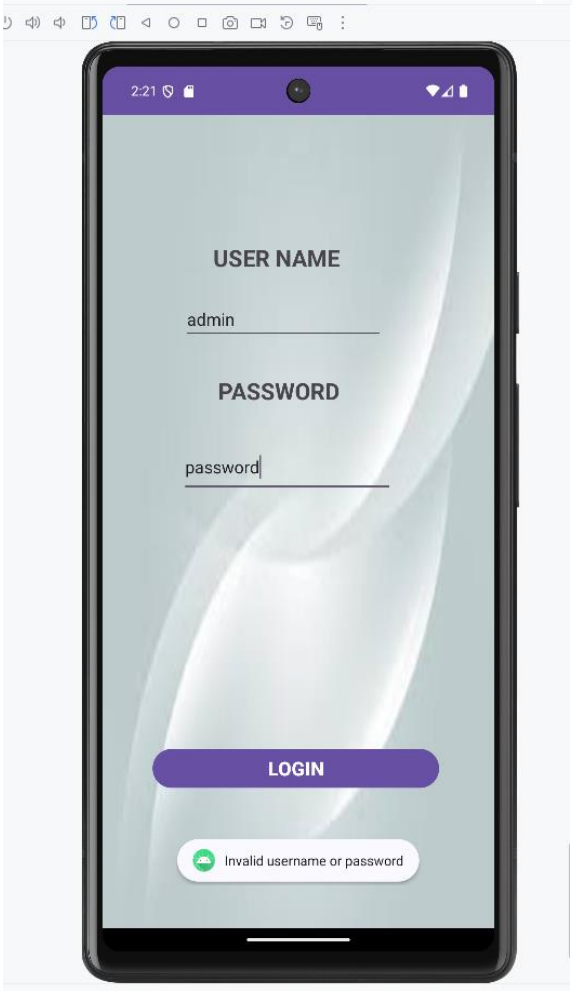
```
package com.example.loginapp;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
```

```
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
   private EditText editTextUsername, editTextPassword; private Button buttonlogin;
   @Override
   protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      editTextUsername=findViewById(R.id.editTextText);
      editTextPassword=findViewById(R.id.editTextText2);
      buttonlogin=findViewById(R.id.button);

      buttonlogin.setOnClickListener(new View.OnClickListener() {
         @Override
      public void onClick(View v)
      {
         String username=editTextUsername.getText().toString().trim();
         String password=editTextPassword.getText().toString().trim();
         if(TextUtils.isEmpty(username)||TextUtils.isEmpty(password))
         {
            Toast.makeText(MainActivity.this,"  Username or Password
 cannot not be empty",Toast.LENGTH_SHORT).show();
         }
         else
         {
            if (username.equals("admin")&& password.equals("pass"))
            {
               Toast.makeText(MainActivity.this, "Login Successful", Toast.LENGTH_SHORT).show();
            } else
            {
               Toast.makeText(MainActivity.this,"Invalid username or password",
Toast.LENGTH_SHORT).show();
            }
         }
      }
      });
   }
}
```

OUTPUT

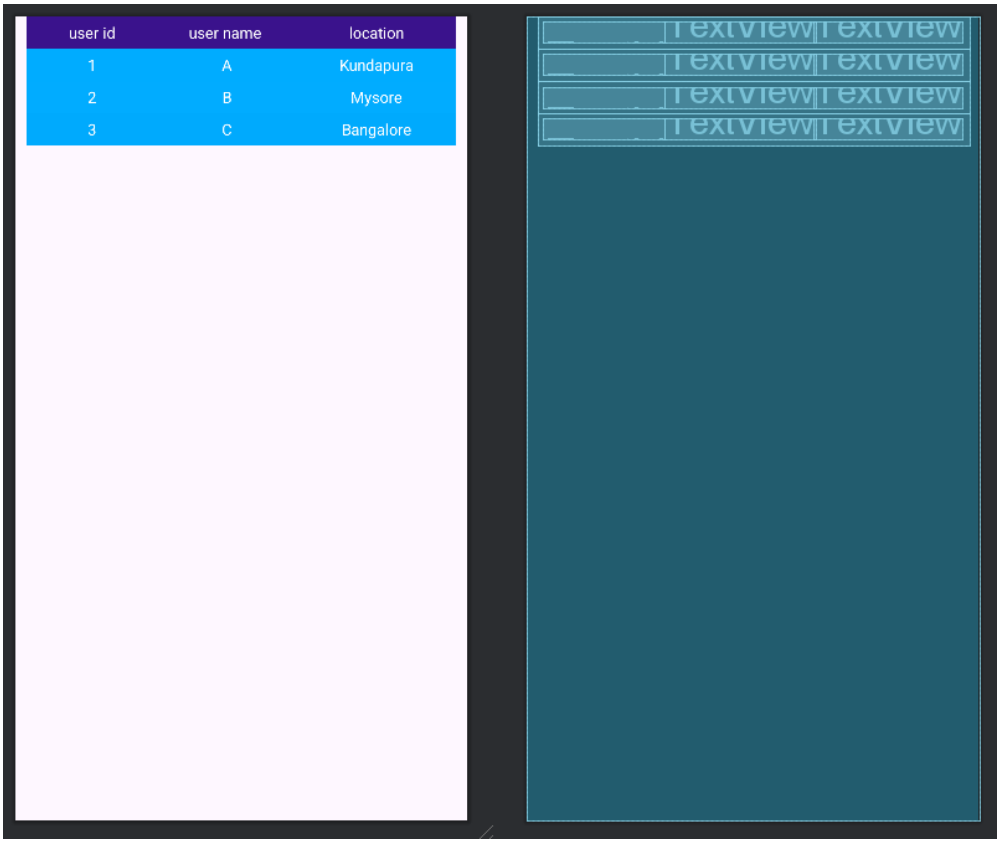

2:19
USER NAME
username
PASSWORD
password
LOGIN
Username or Password cannot not be empty


2:20
USER NAME
admin
PASSWORD
pass
LOGIN
Login Successful


2:21
USER NAME
admin
PASSWORD
password
LOGIN
Invalid username or password

Program 14: Create an application to demonstrate table layout.

Design:



Code:

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TableLayout
    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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:paddingLeft="10dp"
    android:paddingRight="10dp"
    tools:context=".MainActivity">

    <TableRow android:background="#3A128C" android:padding="5dp">
        <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="user id"
        android:textColor="@color/white"
        android:textAlignment="center"/>

    <TextView android:layout_width="wrap_content"
      android:layout_height="wrap_content"
```

```
    android:layout_weight="1" android:text="user
    name " android:textColor="@color/white"
    android:textAlignment="center"/>

     <TextView android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:layout_weight="1" android:text="location"
     android:textColor="@color/white"
     android:textAlignment="center"/>
</TableRow>

<TableRow android:background="#00ACFF" android:padding="5dp">
    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="1"
        android:textColor="@color/white"
        android:textAlignment="center"/>

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="A"
        android:textColor="@color/white"
        android:textAlignment="center"/>

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="Kundapura"
        android:textColor="@color/white"
        android:textAlignment="center"/>
</TableRow>

<TableRow android:background="#01ACFF" android:padding="5dp">
    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="2"
        android:textColor="@color/white"
        android:textAlignment="center"/>

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="B"
        android:textColor="@color/white"
        android:textAlignment="center"/>

    <TextView android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1" android:text="Mysore"
        android:textColor="@color/white"
        android:textAlignment="center"/>
</TableRow>

<TableRow android:background="#00AAFD" android:padding="5dp">
```

```
        <TextView android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1" android:text="3"
            android:textColor="@color/white"
            android:textAlignment="center"/>

        <TextView android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1" android:text="C"
            android:textColor="@color/white"
            android:textAlignment="center"/>

        <TextView android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1" android:text="Bangalore"
            android:textColor="@color/white"
            android:textAlignment="center"/>
</TableRow>
</TableLayout>
```

MainActivity.java

```
package com.example.demo11;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity; import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;

public class MainActivity extends AppCompatActivity {
@Override
protected void onCreate(Bundle savedInstanceState)
    {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
    });
}
}
```

Output:

4:06
user id
user name
location
1
A
Kundapura
2
B
Mysore
3
C
Bangalore