1.a) Create an Android application that shows Hello + name of the user and run it on an emulator.

MainActivity.java

```
package com.example.hellouserapp;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

// Assuming you have a TextView with the id 'textView' in your layout

String username = "Sampath";

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

textView.setText("Hello, " + username + "!");

}

}
```

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"

tools:context=".MainActivity">

<TextView
```

android:id="@+id/textView"

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Hello, World!"

android:textSize="24sp"

android:layout_centerInParent="true"/>

</RelativeLayout>

1b) Create an application that takes the name from a text box and shows hello message along with the name entered in text box, when the user clicks the OK button.

<?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/editTextName"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:hint="Enter your name"

android:layout_marginTop="16dp"

android:layout_marginLeft="16dp"

android:layout_marginRight="16dp"/>

<Button

android:id="@+id/buttonOK"

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="OK"
android:layout_below="@id/editTextName"
android:layout_marginTop="16dp"
android:layout_marginLeft="16dp"
android:onClick="showHelloMessage"/>
<TextView
android:id="@+id/textViewMessage"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text=""
android:layout_below="@id/buttonOK"
android:layout_marginTop="16dp"
android:layout_marginLeft="16dp"/>
</RelativeLayout>
```

MainActivity.java

```
package com.example.hellonameapp;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
private EditText editTextName;
```

```
private TextView textViewMessage;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
editTextName = findViewById(R.id.editTextName);
textViewMessage = findViewById(R.id.textViewMessage);
}
public void showHelloMessage(View view) {
String name = editTextName.getText().toString();
if (!name.isEmpty()) {
String helloMessage = "Hello, " + name + "!";
textViewMessage.setText(helloMessage);
}
}
}
```

2. Create a screen that has input boxes for User Name, Password, Address, Gender (radio buttons for male and female), Age (numeric), Date of Birth (Date Picket), State (Spinner) and a Submit button. On clicking the submit button, print all the data below the Submit Button. Use (a) Linear Layout (b) Relative Layout and (c) Grid Layout or Table Layout.(any one of the layouts).

Linear layout:

MainActivity.java

```
package com.example.userinputlayouts;
import android.os.Bundle;
import android.view.View;
```

```
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.LinearLayout;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Spinner;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
private EditText editTextUserName, editTextPassword, editTextAddress,
editTextAge;
private RadioButton radioButtonMale, radioButtonFemale;
private DatePicker datePicker;
private Spinner spinnerState;
private TextView textViewResult;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main_linear);
editTextUserName = findViewById(R.id.editTextUserName);
editTextPassword = findViewById(R.id.editTextPassword);
editTextAddress = findViewById(R.id.editTextAddress);
editTextAge = findViewById(R.id.editTextAge);
radioButtonMale = findViewById(R.id.radioButtonMale);
```

```
radioButtonFemale = findViewById(R.id.radioButtonFemale);
datePicker = findViewById(R.id.datePicker);
spinnerState = findViewById(R.id.spinnerState);
textViewResult = findViewById(R.id.textViewResult);
setupSpinner();
}
private void setupSpinner() {
ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(
this,
R.array.states_array,
android.R.layout.simple_spinner_item
);
adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdo
wn_
 item);
spinnerState.setAdapter(adapter);
}
public void onSubmitClick(View view) {
String userName = editTextUserName.getText().toString();
String password = editTextPassword.getText().toString();
String address = editTextAddress.getText().toString();
String age = editTextAge.getText().toString();
String gender = radioButtonMale.isChecked() ? "Male" : "Female";
int day = datePicker.getDayOfMonth();
int month = datePicker.getMonth() + 1; // Months are 0-indexed
int year = datePicker.getYear();
String dateOfBirth = String.format("%02d-%02d-%04d", day, month, year);
```

```
String state = spinnerState.getSelectedItem().toString();
String result = "User Name: " + userName +
"\nPassword: " + password +
"\nAddress: " + address +
"\nAge: " + age +
"\nGender: " + gender +
"\nDate of Birth: " + dateOfBirth +
"\nState: " + state;
textViewResult.setText(result);
}
}
```

res/values/strings.xml

```
<resources>
<string-array name="states_array">
<item>State 1</item>
<item>State 2</item>
<item>State 3</item>
<!-- Add more states as needed -->
</string-array>
</resources>
```

res/layout/activity_main_linear.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/editTextUserName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="User Name"/>
<EditText
android:id="@+id/editTextPassword"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Password"
android:inputType="textPassword"/>
<EditText
android:id="@+id/editTextAddress"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Address"/>
<EditText
android:id="@+id/editTextAge"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Age"
android:inputType="number"/>
<RadioGroup
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```
android:orientation="horizontal">
<RadioButton
android:id="@+id/radioButtonMale"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Male"/>
<RadioButton
android:id="@+id/radioButtonFemale"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Female"/>
</RadioGroup>
<DatePicker
android:id="@+id/datePicker"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
<Spinner
android:id="@+id/spinnerState"
android:layout_width="match_parent"
android:layout_height="wrap_content"/>
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
android:onClick="onSubmitClick"
android:layout_gravity="center"/>
```

```
<TextView
android:id="@+id/textViewResult"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"/>
</LinearLayout>
```

b)Relative layout:

MainActivity.java

```
package com.example.userinputlayouts;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RelativeLayout;
import android.widget.Spinner;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
private EditText editTextUserName, editTextPassword, editTextAddress,
editTextAge;
private RadioButton radioButtonMale, radioButtonFemale;
private DatePicker datePicker;
private Spinner spinnerState;
```

```
private TextView textViewResult;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main_relative);
editTextUserName = findViewById(R.id.editTextUserName);
editTextPassword = findViewById(R.id.editTextPassword);
editTextAddress = findViewById(R.id.editTextAddress);
editTextAge = findViewById(R.id.editTextAge);
radioButtonMale = findViewById(R.id.radioButtonMale);
radioButtonFemale = findViewById(R.id.radioButtonFemale);
datePicker = findViewById(R.id.datePicker);
spinnerState = findViewById(R.id.spinnerState);
textViewResult = findViewById(R.id.textViewResult);
setupSpinner();
}
private void setupSpinner() {
ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(
this,
R.array.states_array,
android.R.layout.simple_spinner_item
);
adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdo
wn_
 item);
spinnerState.setAdapter(adapter);
}
```

```
public void onSubmitClick(View view) {
String userName = editTextUserName.getText().toString();
String password = editTextPassword.getText().toString();
String address = editTextAddress.getText().toString();
String age = editTextAge.getText().toString();
String gender = radioButtonMale.isChecked() ? "Male" : "Female";
int day = datePicker.getDayOfMonth();
int month = datePicker.getMonth() + 1; // Months are 0-indexed
int year = datePicker.getYear();
String dateOfBirth = String.format("%02d-%02d-%04d", day, month, year);
String state = spinnerState.getSelectedItem().toString();
String result = "User Name: " + userName +
"\nPassword: " + password +
"\nAddress: " + address +
"\nAge: " + age +
"\nGender: " + gender +
"\nDate of Birth: " + dateOfBirth +
"\nState: " + state;
textViewResult.setText(result);
}
}
```

res/layout/activity_main_relative.xml

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

```
android:padding="16dp">
<EditText
android:id="@+id/editTextUserName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="User Name"
android:layout_alignParentTop="true"/>
<EditText
android:id="@+id/editTextPassword"
android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Password"
      android:layout_below="@id/editTextUserName"
      android:layout_marginTop="16dp"
      android:inputType="textPassword"/>

   <EditText
      android:id="@+id/editTextAddress"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Address"
      android:layout_below="@id/editTextPassword"
      android:layout_marginTop="16dp"/>

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

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Age"
    android:layout_below="@id/editTextAddress"
    android:layout_marginTop="16dp"
    android:inputType="number"/>

<RadioGroup
    android:id="@+id/radioGroupGender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_below="@id/editTextAge"
    android:layout_marginTop="16dp">

    <RadioButton
        android:id="@+id/radioButtonMale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"/>

    <RadioButton
        android:id="@+id/radioButtonFemale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"/>
```

```
    </RadioGroup>

    <DatePicker
        android:id="@+id/datePicker"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@id/radioGroupGender"
android:layout_marginTop="16dp"/>
<Spinner
android:id="@+id/spinnerState"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_below="@id/datePicker"
android:layout_marginTop="16dp"/>
<Button
android:id="@+id/buttonSubmit"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
android:onClick="onSubmitClick"
android:layout_below="@id/spinnerState"
android:layout_marginTop="16dp"
android:layout_centerHorizontal="true"/>
<TextView
android:id="@+id/textViewResult"
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
android:layout_below="@id/buttonSubmit"
android:layout_marginTop="16dp"/>
</RelativeLayout>
```

c)Grid Layout:

MainActivity.java

```
package com.example.userinputlayouts;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.GridLayout;
import android.widget.RadioButton;
import android.widget.Spinner;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
private EditText editTextUserName, editTextPassword, editTextAddress,
editTextAge;
private RadioButton radioButtonMale, radioButtonFemale;
private DatePicker datePicker;
private Spinner spinnerState;
private TextView textViewResult;
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main_grid);
editTextUserName = findViewById(R.id.editTextUserName);
editTextPassword = findViewById(R.id.editTextPassword);
editTextAddress = findViewById(R.id.editTextAddress);
editTextAge = findViewById(R.id.editTextAge);
radioButtonMale = findViewById(R.id.radioButtonMale);
radioButtonFemale = findViewById(R.id.radioButtonFemale);
datePicker = findViewById(R.id.datePicker);
spinnerState = findViewById(R.id.spinnerState);
textViewResult = findViewById(R.id.textViewResult);
setupSpinner();
}
private void setupSpinner() {
ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(
this,
R.array.states_array,
android.R.layout.simple_spinner_item
);
adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdo
wn_
 item);
spinnerState.setAdapter(adapter);
}
public void onSubmitClick(View view) {
String userName = editTextUserName.getText().toString();
```

```
String password = editTextPassword.getText().toString();
String address = editTextAddress.getText().toString();
String age = editTextAge.getText().toString();
String gender = radioButtonMale.isChecked() ? "Male" : "Female";
int day = datePicker.getDayOfMonth();
int month = datePicker.getMonth() + 1; // Months are 0-indexed
int year = datePicker.getYear();
String dateOfBirth = String.format("%02d-%02d-%04d", day, month, year);
String state = spinnerState.getSelectedItem().toString();
String result = "User Name: " + userName +
"\nPassword: " + password +
"\nAddress: " + address +
"\nAge: " + age +
"\nGender: " + gender +
"\nDate of Birth: " + dateOfBirth +
"\nState: " + state;
textViewResult.setText(result);
}
}
```

res/layout/activity_main_grid.xml

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:columnCount="2"
android:rowCount="10"
```

```
android:padding="16dp">
<EditText
android:id="@+id/editTextUserName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="User Name"
android:layout_columnSpan="2"/>
<EditText
android:id="@+id/editTextPassword"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:hint="Password"
      android:layout_columnSpan="2"
      android:inputType="textPassword"/>

   <EditText
      android:id="@+id/editTextAddress"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Address"
      android:layout_columnSpan="2"/>

   <EditText
      android:id="@+id/editTextAge"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
```

```
    android:hint="Age"
    android:layout_columnSpan="2"
    android:inputType="number"/>

<RadioGroup
    android:id="@+id/radioGroupGender"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:layout_columnSpan="2">

    <RadioButton
        android:id="@+id/radioButtonMale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"/>

    <RadioButton
        android:id="@+id/radioButtonFemale"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"/>
</RadioGroup>

<DatePicker
    android:id="@+id/datePicker"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_columnSpan="2"/>

    <Spinner
        android:id="@+id/spinnerState"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_columnSpan="2"/>
<Button
android:id="@+id/buttonSubmit"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Submit"
android:onClick="onSubmitClick"
android:layout_gravity="center"/>
<TextView
android:id="@+id/textViewResult"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_columnSpan="2"/>
</GridLayout>
```

3. Develop an application that shows names as a list and on selecting a name it should show the details of the candidate on the next screen with a “Back” button.

MainActivity.java:

```
package com.example.myapplication;

import android.content.Intent;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;
```

```
public class MainActivity extends AppCompatActivity {

    ListView nameListView;

    String[] names = {"Candidate 1", "Candidate 2", "Candidate 3"};

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

        nameListView = findViewById(R.id.nameListView);

        ArrayAdapter<String> adapter = new ArrayAdapter<>(this,
android.R.layout.simple_list_item_1, names);
        nameListView.setAdapter(adapter);

        nameListView.setOnItemClickListener(new
AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> parent, View view, int position,
long id) {
                String selectedName = names[position];
                String[] details = getCandidateDetails(selectedName);
                Intent intent = new Intent(MainActivity.this,
CandidateDetailsActivity.class);
```

```
            intent.putExtra("name", selectedName);
            intent.putExtra("rollNo", details[0]);
            intent.putExtra("age", details[1]);
            intent.putExtra("experience", details[2]);
            startActivity(intent);
        }
    });
}

// Method to get details of a candidate
private String[] getCandidateDetails(String name) {
    String[] details = new String[3];
    // Sample data - Replace with actual data retrieval logic
    if(name.equals("Candidate 1")) {
        details[0] = "101"; // Roll Number
        details[1] = "25";  // Age
        details[2] = "3 years"; // Experience
    } else if (name.equals("Candidate 2")) {
        details[0] = "102";
        details[1] = "28";
        details[2] = "5 years";
    } else if (name.equals("Candidate 3")) {
        details[0] = "103";
        details[1] = "30";
        details[2] = "7 years";
    }
```

```
        return details;
    }
}
```

Candidatedetailsactivity.java:

```
package com.example.myapplication;
import android.content.Intent;
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

public class CandidateDetailsActivity extends AppCompatActivity {

    TextView nameTextView, rollNoTextView, ageTextView, experienceTextView;
    Button backButton;

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

        nameTextView = findViewById(R.id.nameTextView);
        rollNoTextView = findViewById(R.id.rollNoTextView);
        ageTextView = findViewById(R.id.ageTextView);
        experienceTextView = findViewById(R.id.experienceTextView);
```

```
        backButton = findViewById(R.id.backButton);

        Intent intent = getIntent();
        if (intent != null) {
            String name = intent.getStringExtra("name");
            String rollNo = intent.getStringExtra("rollNo");
            String age = intent.getStringExtra("age");
            String experience = intent.getStringExtra("experience");

            nameTextView.setText(name);
            rollNoTextView.setText("Roll No: " + rollNo);
            ageTextView.setText("Age: " + age);
            experienceTextView.setText("Experience: " + experience);
        }

        backButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                finish();
            }
        });
    }
}
```

Activity_main.xml:

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

```
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <ListView
        android:id="@+id/nameListView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:padding="16dp" />

</RelativeLayout>
```

Activity_candidatedetails:

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

    <TextView
        android:id="@+id/nameTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="24sp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="32dp"/>

    <TextView
        android:id="@+id/rollNoTextView"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/nameTextView"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="16dp"/>

<TextView
    android:id="@+id/ageTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/rollNoTextView"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="16dp"/>

<TextView
    android:id="@+id/experienceTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/ageTextView"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="16dp"/>

<Button
    android:id="@+id/backButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```
    android:layout_below="@id/experienceTextView"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="32dp"
    android:text="Back"/>

</RelativeLayout>
```

4. Develop an application that uses a menu with 3 options for dialing a number, opening a website and to send an SMS. On selecting an option, the appropriate action should be invoked using intents.

```
package com.example.myapplication;



import android.os.Bundle;


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


import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity implements
View.OnClickListener {


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

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button dialButton = findViewById(R.id.dial_button);
        Button websiteButton = findViewById(R.id.website_button);
        Button smsButton = findViewById(R.id.sms_button);

        dialButton.setOnClickListener(this);
        websiteButton.setOnClickListener(this);
        smsButton.setOnClickListener(this);
    }

    public void onClick(View v) {
        int id = v.getId();
        if (id == R.id.dial_button) {
            // Dial a number
            Intent dialIntent = new Intent(Intent.ACTION_DIAL);
            dialIntent.setData(Uri.parse("tel:123456789")); // Replace with your
phone number
            startActivity(dialIntent);
        } else if (id == R.id.website_button) {
            // Open a website
            Intent websiteIntent = new Intent(Intent.ACTION_VIEW);
            websiteIntent.setData(Uri.parse("https://www.example.com")); //
Replace with your website URL
            startActivity(websiteIntent);
        } else if (id == R.id.sms_button) {
```

```
            // Send an SMS
            Intent smsIntent = new Intent(Intent.ACTION_SENDTO);
            smsIntent.setData(Uri.parse("smsto:"));  // This ensures only SMS apps respond
            smsIntent.putExtra("sms_body", "Hello, this is a test message!"); // Replace with your message
            startActivity(smsIntent);
        }
    }

}
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    android:gravity="center"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/dial_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Dial a Number" />
```

```
    <Button
        android:id="@+id/website_button"
        android:layout_width="wrap_content"
       android:layout_height="wrap_content"
        android:text="Open Website" />

    <Button
        android:id="@+id/sms_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send SMS" />

</LinearLayout>
```

Manifests:

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

5. Develop an application to implement broadcast receivers.

Mainactivity.java:

```
package com.example.myapplication;

import android.app.Activity;
import android.content.ComponentName;
```

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

public class MainActivity extends Activity {

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

   // Broadcast a custom intent.
   public void broadcastIntent(View view){
      Intent intent = new Intent();
      intent.setAction("com.tutorialspoint.CUSTOM_INTENT");
      intent.setComponent(new ComponentName(getPackageName(),
MyReceiver.class.getName())); // Set the component explicitly
      sendBroadcast(intent);
   }

}
```

Myreceiver.java:

```
package com.example.myapplication;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
```

```
import android.widget.Toast;

/**
 * Created by TutorialsPoint7 on 8/23/2016.
 */
public class MyReceiver extends BroadcastReceiver{
   @Override
   public void onReceive(Context context, Intent intent) {
      Toast.makeText(context, "Intent Detected.", Toast.LENGTH_LONG).show();
   }
}
```

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"
   tools:context=".MainActivity">

   <TextView
      android:id="@+id/textView1"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Example of Broadcast"
      android:layout_alignParentTop="true"
      android:layout_centerHorizontal="true"
```

```
        android:textSize="30dp" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Broadcast Intent"
        android:onClick="broadcastIntent"
        android:layout_below="@id/textView1"
        android:layout_centerHorizontal="true" />

</RelativeLayout>
```

Manifest.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.MyApplication"
```

```
    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>
    <receiver android:name="MyReceiver"
      android:exported="true">
      <intent-filter>
        <action android:name="com.tutorialspoint.CUSTOM_INTENT">
        </action>
      </intent-filter>
    </receiver>
  </application>

</manifest>
```

6.Create an application that uses a text file to store user names and passwords (tab separated fields and one record per line). When the user submits a login name and password through a screen, the details should be verified with the text file data and if they match, show a dialog saying that login is successful. Otherwise, show the dialog with Login Failed message.

```
package com.example.myapplication;

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 java.io.BufferedReader;

import java.io.IOException;

import java.io.InputStream;

import java.io.InputStreamReader;


public class MainActivity extends AppCompatActivity {
    EditText editTextUsername, editTextPassword;
    Button buttonLogin;


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


        editTextUsername = findViewById(R.id.editTextUsername);
```

```
        editTextPassword = findViewById(R.id.editTextPassword);
        buttonLogin = findViewById(R.id.buttonLogin);

        buttonLogin.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String username = editTextUsername.getText().toString();
                String password = editTextPassword.getText().toString();

                if (validateCredentials(username, password)) {
                    Toast.makeText(MainActivity.this, "Login Successful!",
Toast.LENGTH_SHORT).show();
                } else {
                    Toast.makeText(MainActivity.this, "Login Failed. Please check your
username and password.", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }

    private boolean validateCredentials(String username, String password) {
        try {
            InputStream inputStream =
getResources().getAssets().open("user_credentials.txt");
            BufferedReader reader = new BufferedReader(new
InputStreamReader(inputStream));
            String line;
```

```
            while ((line = reader.readLine()) != null) {
                String[] parts = line.split("\t");
                if (parts.length == 2) {
                    String storedUsername = parts[0];
                    String storedPassword = parts[1];
                    if (storedUsername.equals(username) &&
storedPassword.equals(password)) {
                        reader.close();
                        return true;
                    }
                }
            }
            reader.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
        return false;
    }
}
<?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/editTextUsername"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Username"
    android:layout_marginTop="50dp"
    android:layout_marginHorizontal="20dp"/>

<EditText
    android:id="@+id/editTextPassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Password"
    android:inputType="textPassword"
    android:layout_below="@id/editTextUsername"
    android:layout_marginTop="20dp"
    android:layout_marginHorizontal="20dp"/>

<Button
    android:id="@+id/buttonLogin"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Login"
    android:layout_below="@id/editTextPassword"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="30dp"/>
```

</RelativeLayout>

7. Create a user registration application that stores the user details in a database table.

Mainactivity.java:

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;
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 {

    private EditText userNameEdt, userEmailEdt, userPasswordEdt;
    private Button registerBtn;
    private DBHandler dbHandler;

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

        userNameEdt = findViewById(R.id.idEdtUserName);
```

```
        userEmailEdt = findViewById(R.id.idEdtUserEmail);
        userPasswordEdt = findViewById(R.id.idEdtUserPassword);
        registerBtn = findViewById(R.id.idBtnRegister);

        dbHandler = new DBHandler(MainActivity.this);

        registerBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String userName = userNameEdt.getText().toString();
                String userEmail = userEmailEdt.getText().toString();
                String userPassword = userPasswordEdt.getText().toString();

                if (userName.isEmpty() || userEmail.isEmpty() ||
userPassword.isEmpty()) {
                    Toast.makeText(MainActivity.this, "Please enter all the data..",
Toast.LENGTH_SHORT).show();
                    return;
                }

                dbHandler.addNewUser(userName, userEmail, userPassword);

                Toast.makeText(MainActivity.this, "User registered successfully.",
Toast.LENGTH_SHORT).show();
                userNameEdt.setText("");
                userEmailEdt.setText("");
                userPasswordEdt.setText("");
```

```
        }
      });
    }
}
```

Activity_mainxml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/idEdtUserName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:hint="Enter Username" />

    <EditText
        android:id="@+id/idEdtUserEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:hint="Enter Email" />
```

```
    <EditText
        android:id="@+id/idEdtUserPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:hint="Enter Password"
        android:inputType="textPassword" />

    <Button
        android:id="@+id/idBtnRegister"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="Register"
        android:textAllCaps="false" />

</LinearLayout>
```

DBHandler.java:

```
package com.example.myapplication;

import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
```

```
public class DBHandler extends SQLiteOpenHelper {

    private static final String DB_NAME = "userdb";
    private static final int DB_VERSION = 1;
    private static final String TABLE_NAME = "users";
    private static final String ID_COL = "id";
    private static final String NAME_COL = "name";
    private static final String EMAIL_COL = "email";
    private static final String PASSWORD_COL = "password";

    public DBHandler(Context context) {
        super(context, DB_NAME, null, DB_VERSION);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        String query = "CREATE TABLE " + TABLE_NAME + " ("
                + ID_COL + " INTEGER PRIMARY KEY AUTOINCREMENT, "
                + NAME_COL + " TEXT,"
                + EMAIL_COL + " TEXT,"
                + PASSWORD_COL + " TEXT)";

        db.execSQL(query);
    }

    public void addNewUser(String userName, String userEmail, String
userPassword) {
```

```
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues values = new ContentValues();
        values.put(NAME_COL, userName);
        values.put(EMAIL_COL, userEmail);
        values.put(PASSWORD_COL, userPassword);
        db.insert(TABLE_NAME, null, values);
        db.close();
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
        onCreate(db);
    }
}
```