**1.Create a Application Which will Send ―Hello message from one activity to another with help of Button (Use Intent)**

**activity\_main.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 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\_centerHorizontal="true"  
 android:layout\_centerVertical="true"  
 android:layout\_marginBottom="16dp"/>  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Send Message"  
 android:layout\_below="@id/textView"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"/>  
</RelativeLayout>

**MainActivity.java**

package com.example.helloworld;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 Button button = findViewById(R.id.*button*);  
 button.setOnClickListener(new View.OnClickListener() {  
 public void onClick(View v) {String message = "Hello, from MainActivity!";Intent intent = new Intent(MainActivity.this, MainActivity2.class);intent.putExtra("message", message);startActivity(intent);  
 }  
 });  
 }  
}

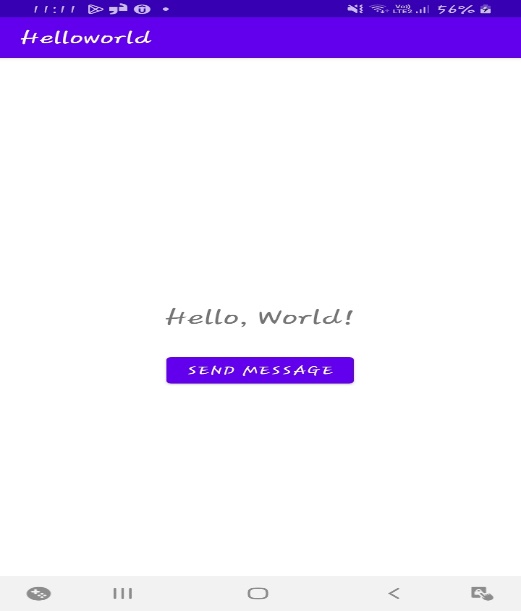
**activity\_main2.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity2">  
 <TextView  
 android:id="@+id/receivedMessage"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text=""  
 android:textSize="24sp"  
 android:layout\_centerHorizontal="true"  
 android:layout\_centerVertical="true"/>  
</RelativeLayout>

**MainActivity2.java**

package com.example.helloworld;  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity2 extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main2*);  
 TextView receivedMessageTextView = findViewById(R.id.*receivedMessage*);  
 *// Get the message from the Intent* Intent intent = getIntent();  
 if (intent != null && intent.hasExtra("message")) {  
 String message = intent.getStringExtra("message");  
 receivedMessageTextView.setText(message);  
 }  
 }  
}

**Output:**

**2.Create application with Login Screen. On successful login, gives message go to next Activity (Without Using Database).**

**activity\_main.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
 <EditText  
 android:id="@+id/usernameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Username"  
 android:layout\_centerHorizontal="true"  
 android:layout\_centerVertical="true"/>  
 <EditText  
 android:id="@+id/passwordEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Password"  
 android:inputType="textPassword"  
 android:layout\_below="@id/usernameEditText"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"/>  
 <Button  
 android:id="@+id/loginButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login"  
 android:layout\_below="@id/passwordEditText"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"/>  
 <TextView  
 android:id="@+id/errorTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text=""  
 android:layout\_below="@id/loginButton"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"/>  
</RelativeLayout>

**MainActivity.java**

package com.example.loginmy;  
import android.content.Intent;  
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 usernameEditText;  
 private EditText passwordEditText;  
 private TextView errorTextView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 usernameEditText = findViewById(R.id.*usernameEditText*);  
 passwordEditText = findViewById(R.id.*passwordEditText*);  
 errorTextView = findViewById(R.id.*errorTextView*);  
 Button loginButton = findViewById(R.id.*loginButton*);  
 loginButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 String username = usernameEditText.getText().toString();  
 String password = passwordEditText.getText().toString();  
 if (username.equals("your\_username") && password.equals("your\_password")) {  
 *// Successful login, navigate to the next activity* Intent intent = new Intent(MainActivity.this, NextActivity.class);  
 startActivity(intent);  
 } else {  
 *// Display an error message* errorTextView.setText("Invalid credentials. Please try again.");  
 }  
 }  
 });  
 }  
}

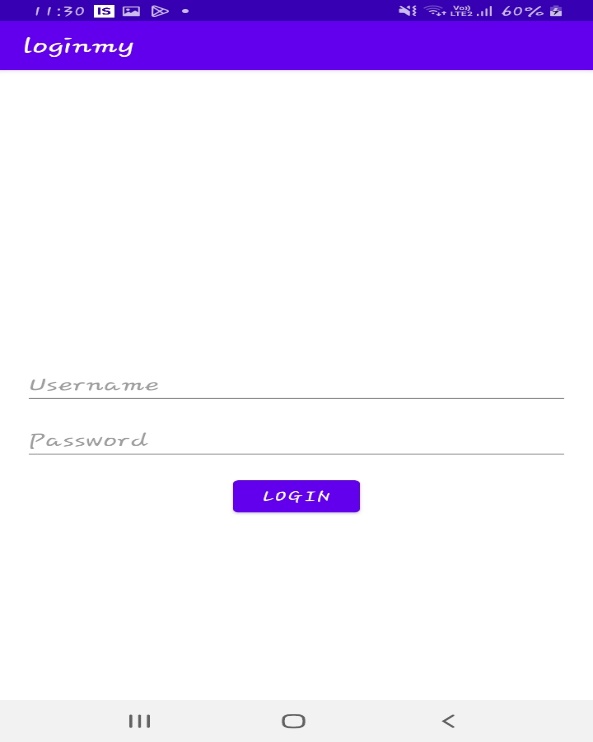
**activitynext.xml**

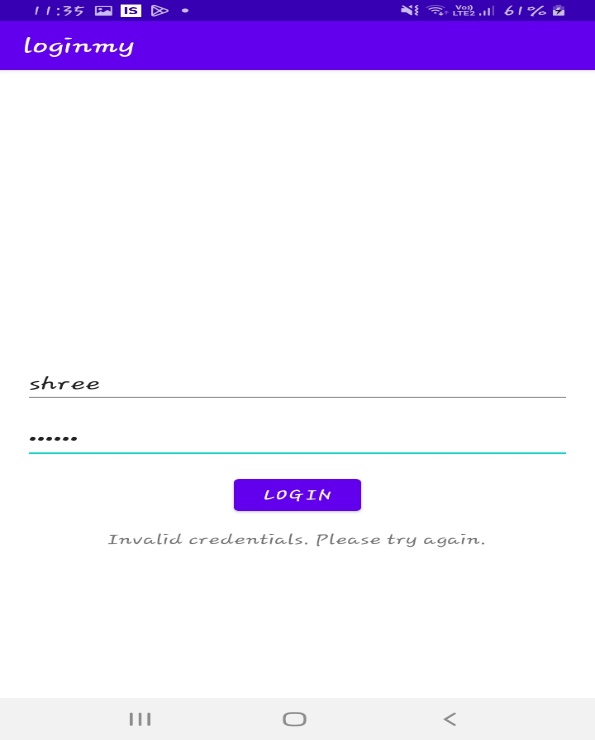
*<?*xml version="1.0" encoding="utf-8"*?>*<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".NextActivity">  
</androidx.constraintlayout.widget.ConstraintLayout>

**NextActivity.java**

package com.example.loginmy;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
public class NextActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_next*);  
 }  
}

**Output:**





**3. Create First Activity to accept information like Student First Name, Middle Name, Last Name, Date of birth, Address, Email ID and display all information on Second Activity when user click on Submit button.**

**activity\_main.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/firstNameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginTop="99dp"  
 android:hint="First Name" />  
  
 <EditText  
 android:id="@+id/middleNameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/lastNameEditText"  
 android:layout\_marginBottom="29dp"  
 android:hint="Middle Name" />  
  
 <EditText  
 android:id="@+id/lastNameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/emailEditText"  
 android:layout\_marginBottom="52dp"  
 android:hint="Last Name" />  
  
 <EditText  
 android:id="@+id/dobEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/submitButton"  
 android:layout\_marginBottom="557dp"  
 android:hint="Date of Birth" />  
  
 <EditText  
 android:id="@+id/addressEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/submitButton"  
 android:layout\_marginBottom="557dp"  
 android:hint="Address" />  
  
 <EditText  
 android:id="@+id/emailEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/firstNameEditText"  
 android:layout\_marginBottom="-401dp"  
 android:hint="Email ID" />  
  
 <Button  
 android:id="@+id/submitButton"  
 android:layout\_width="137dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/emailEditText"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:layout\_marginStart="152dp"  
 android:layout\_marginLeft="152dp"  
 android:layout\_marginTop="602dp"  
 android:layout\_marginEnd="137dp"  
 android:layout\_marginRight="137dp"  
 android:text="Submit"  
 tools:ignore="UnknownId" />  
</RelativeLayout>

MainActivity.java

package com.example.newreg;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
 private EditText firstNameEditText, middleNameEditText, lastNameEditText, dobEditText, addressEditText, emailEditText;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 firstNameEditText = findViewById(R.id.*firstNameEditText*);  
 middleNameEditText = findViewById(R.id.*middleNameEditText*);  
 lastNameEditText = findViewById(R.id.*lastNameEditText*);  
 dobEditText = findViewById(R.id.*dobEditText*);  
 addressEditText = findViewById(R.id.*addressEditText*);  
 emailEditText = findViewById(R.id.*emailEditText*);  
 Button submitButton = findViewById(R.id.*submitButton*);  
 submitButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 *// Get student information from EditText fields* String firstName = firstNameEditText.getText().toString();  
 String middleName = middleNameEditText.getText().toString();  
 String lastName = lastNameEditText.getText().toString();  
 String dob = dobEditText.getText().toString();  
 String address = addressEditText.getText().toString();  
 String email = emailEditText.getText().toString();  
 *// Create an Intent to pass data to the second activity* Intent intent = new Intent(MainActivity.this, DisplayInfoActivity.class);  
 *// Put student information as extras in the Intent* intent.putExtra("firstName", firstName);  
 intent.putExtra("middleName", middleName);  
 intent.putExtra("lastName", lastName);  
 intent.putExtra("dob", dob);  
 intent.putExtra("address", address);  
 intent.putExtra("email", email);  
 *// Start the second activity* startActivity(intent);  
 }  
 });  
 }  
}

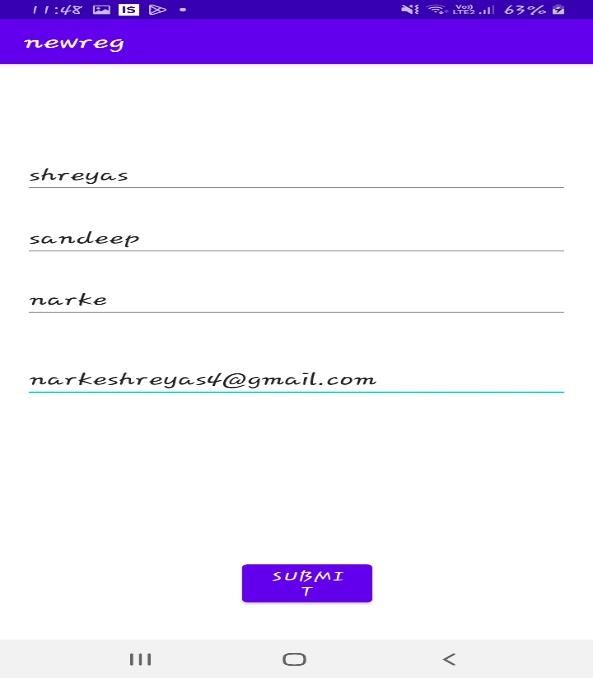
*activity\_display\_info.xml*

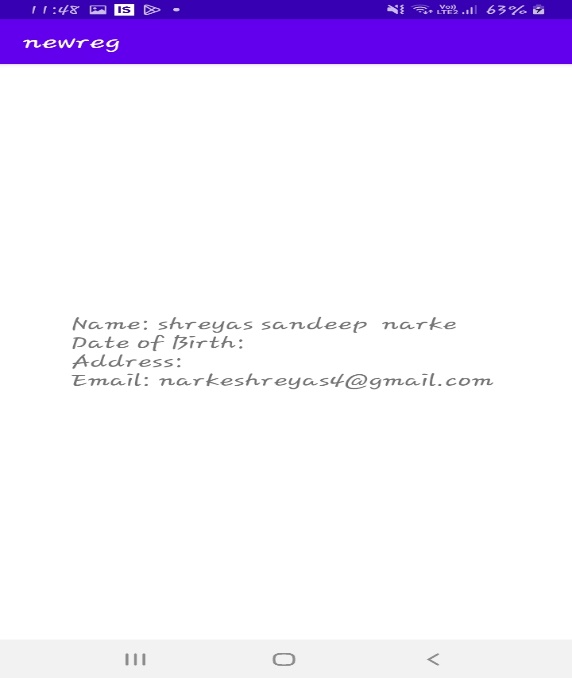
*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".DisplayInfoActivity">  
 <TextView  
 android:id="@+id/displayInfoTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text=""  
 android:textSize="18sp"  
 android:layout\_centerHorizontal="true"  
 android:layout\_centerVertical="true"/>  
</RelativeLayout>

DisplayInfoActivity.java

package com.example.newreg;  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
public class DisplayInfoActivity extends AppCompatActivity {  
 private TextView displayInfoTextView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_display\_info*);  
 displayInfoTextView = findViewById(R.id.*displayInfoTextView*);  
 *// Get student information from the Intent* Intent intent = getIntent();  
 if (intent != null) {  
 String firstName = intent.getStringExtra("firstName");  
 String middleName = intent.getStringExtra("middleName");  
 String lastName = intent.getStringExtra("lastName");  
 String dob = intent.getStringExtra("dob");  
 String address = intent.getStringExtra("address");  
 String email = intent.getStringExtra("email");  
 *// Display the student information in the TextView* String studentInfo = "Name: " + firstName + " " + middleName + " " + lastName + "\n"  
 + "Date of Birth: " + dob + "\n"  
 + "Address: " + address + "\n"  
 + "Email: " + email;  
 displayInfoTextView.setText(studentInfo);  
 }  
 }  
}

**Output::**





**4. Create a "Contact" layout to hold multiple pieces of information, including: Photo, Name, Contact Number, E-mail id.**

**MainActivity.java**

package com.example.cont;  
import android.os.Bundle;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.widget.ImageView;  
import android.widget.RelativeLayout;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
 RelativeLayout contactContainer = findViewById(R.id.*contactContainer*);  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 for (int i = 0; i < 5; i++) {  
 View contactView = LayoutInflater.*from*(this).inflate(R.layout.*activity\_main*, contactContainer, false);  
 ImageView contactPhoto = contactView.findViewById(R.id.*contactPhoto*);  
 TextView contactName = contactView.findViewById(R.id.*contactName*);  
 TextView contactNumber = contactView.findViewById(R.id.*contactNumber*);  
 TextView contactEmail = contactView.findViewById(R.id.*contactEmail*);  
 contactName.setText("Pranav Darekar" + (i + 1));  
 contactNumber.setText("9307301505" + i);  
 contactEmail.setText("darekarappa" + i + "@gmail.com");  
 contactContainer.addView(contactView);  
 }  
 }  
}

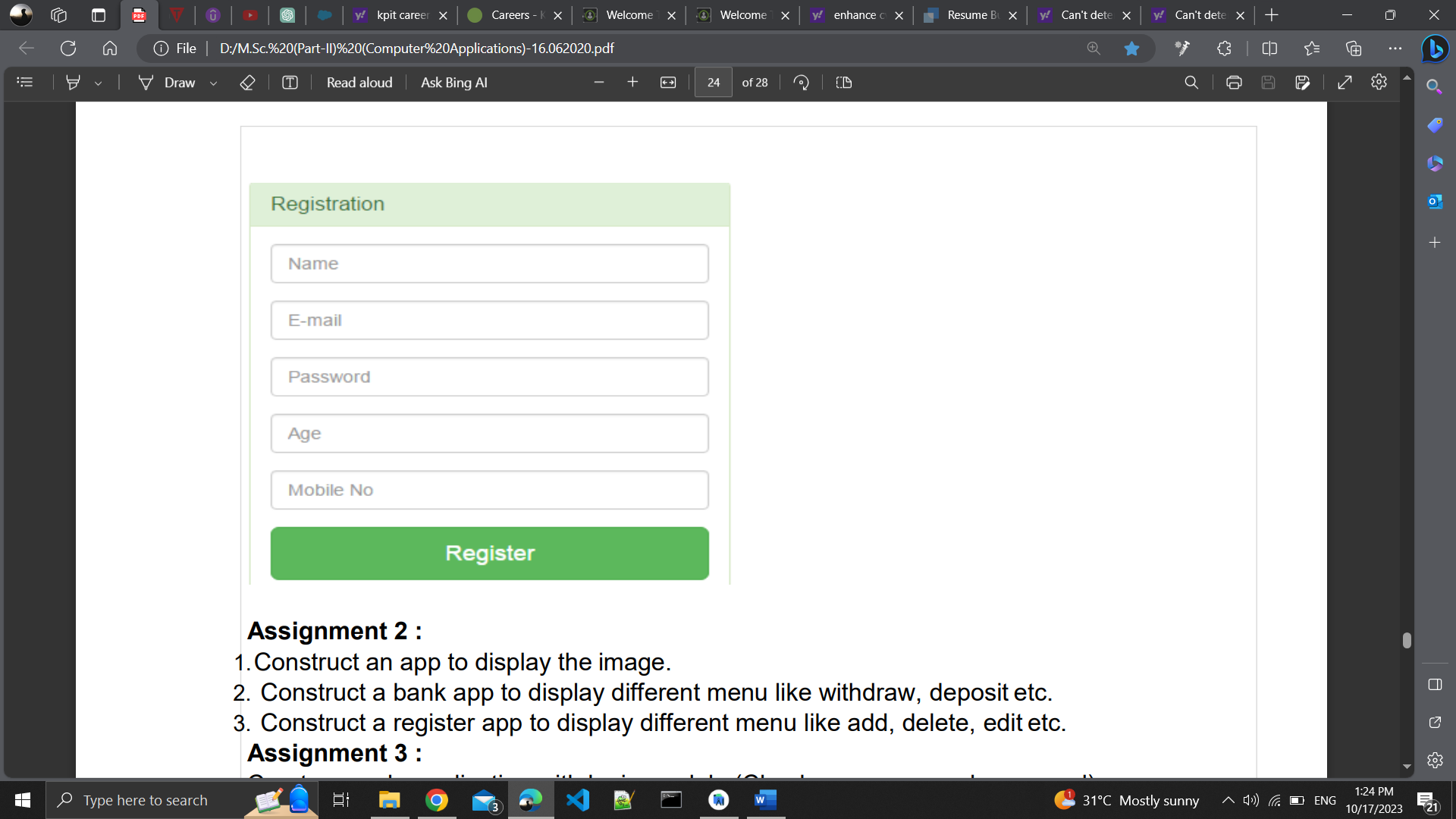
**activity\_main.xml**

*<?*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="wrap\_content"  
 android:padding="16dp"  
 android:id="@+id/contactContainer">  
 <ImageView  
 android:id="@+id/contactPhoto"  
 android:layout\_width="64dp"  
 android:layout\_height="64dp"  
 android:layout\_alignParentStart="true"/>  
*<!-- android:src="@drawable/default\_contact\_image" />-->* <TextView  
 android:id="@+id/contactName"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="112dp"  
 android:layout\_toEndOf="@id/contactPhoto"  
 android:text="Pranav Darekar"  
 android:textSize="18sp" />  
  
 <TextView  
 android:id="@+id/contactNumber"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/contactName"  
 android:layout\_marginStart="123dp"  
 android:layout\_marginTop="3dp"  
 android:layout\_toEndOf="@id/contactPhoto"  
 android:text="94518542121"  
 android:textSize="16sp" />  
  
 <TextView  
 android:id="@+id/contactEmail"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="40dp"  
 android:layout\_below="@id/contactNumber"  
 android:layout\_marginStart="85dp"  
 android:layout\_marginTop="1dp"  
 android:layout\_toEndOf="@id/contactPhoto"  
 android:text="appadarekar@gmail.com"  
 android:textSize="16sp" />  
</RelativeLayout>

Output:



**5. Create registration form given below. Also perform appropriate validation.**

****

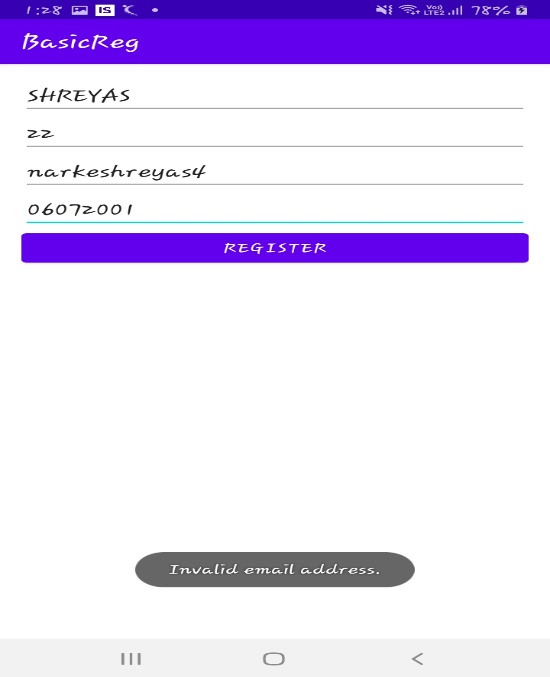
**activity\_main.xml**

*<?*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/editTextName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name" />  
 <EditText  
 android:id="@+id/editTextAge"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Age"  
 android:inputType="number" />  
 <EditText  
 android:id="@+id/editTextEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Email"  
 android:inputType="textEmailAddress" />  
 <EditText  
 android:id="@+id/editTextDOB"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Date of Birth"  
 android:inputType="date" />  
 <Button  
 android:id="@+id/buttonRegister"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Register" />  
</LinearLayout>

**MainActivity.java**

package com.example.basicreg;  
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;  
public class MainActivity extends AppCompatActivity {  
 private EditText editTextName, editTextAge, editTextEmail, editTextDOB;  
 private Button buttonRegister;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 editTextName = findViewById(R.id.*editTextName*);  
 editTextAge = findViewById(R.id.*editTextAge*);  
 editTextEmail = findViewById(R.id.*editTextEmail*);  
 editTextDOB = findViewById(R.id.*editTextDOB*);  
 buttonRegister = findViewById(R.id.*buttonRegister*);  
 buttonRegister.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String name = editTextName.getText().toString().trim();  
 String ageStr = editTextAge.getText().toString().trim();  
 String email = editTextEmail.getText().toString().trim();  
 String dob = editTextDOB.getText().toString().trim();  
 if (name.isEmpty() || ageStr.isEmpty() || email.isEmpty() || dob.isEmpty()) {  
 showToast("Please fill in all fields.");  
 } else {  
 int age = Integer.*parseInt*(ageStr);  
 if (age < 18 || age > 100) {  
 showToast("Age must be between 18 and 100.");  
 } else if (!isEmailValid(email)) {  
 showToast("Invalid email address.");  
 } else {  
 showToast("Registration successful!");  
 }  
 }  
 }  
 });  
 }  
 private boolean isEmailValid(String email) {  
 return android.util.Patterns.*EMAIL\_ADDRESS*.matcher(email).matches();  
 }  
 private void showToast(String message) {  
 Toast.*makeText*(this, message, Toast.*LENGTH\_SHORT*).show();  
 }  
}

**Output::**

**6. Construct an app to display the image.**

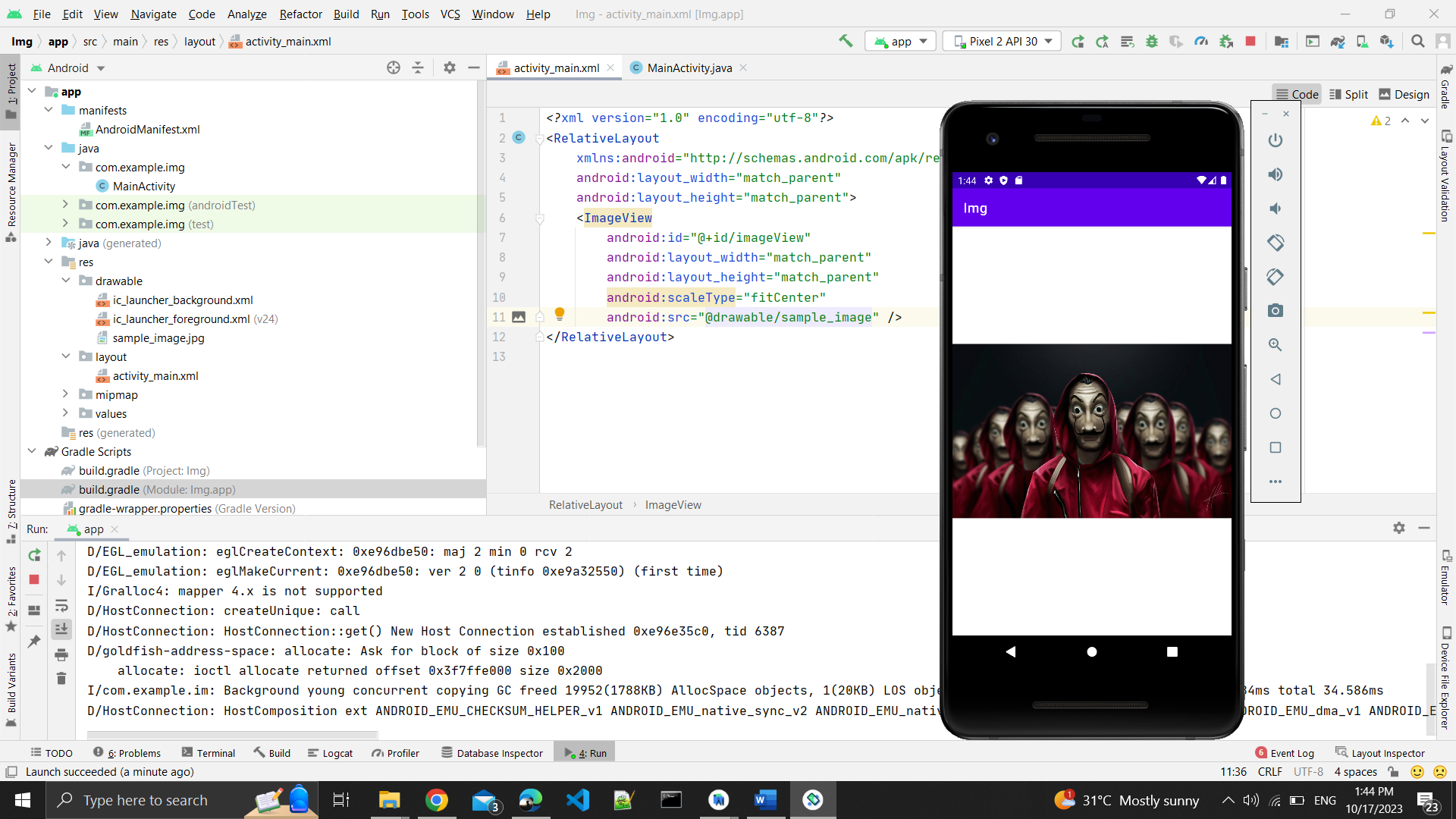
**activity\_main.xml**

*<?*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">  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:scaleType="fitCenter"  
 android:src="@drawable/sample\_image" />  
</RelativeLayout>

**MainActivity.java**

package com.example.img;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
public class MainActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
}

**Output::**



**7. Construct a bank app to display different menu like withdraw, deposit etc.**

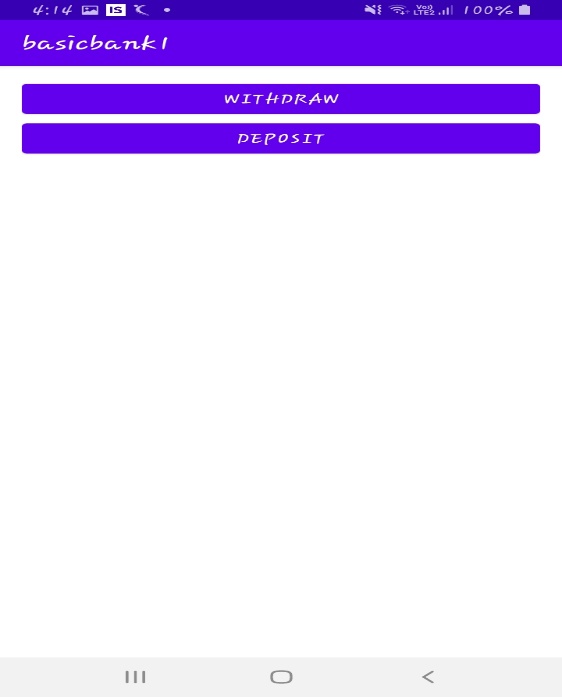
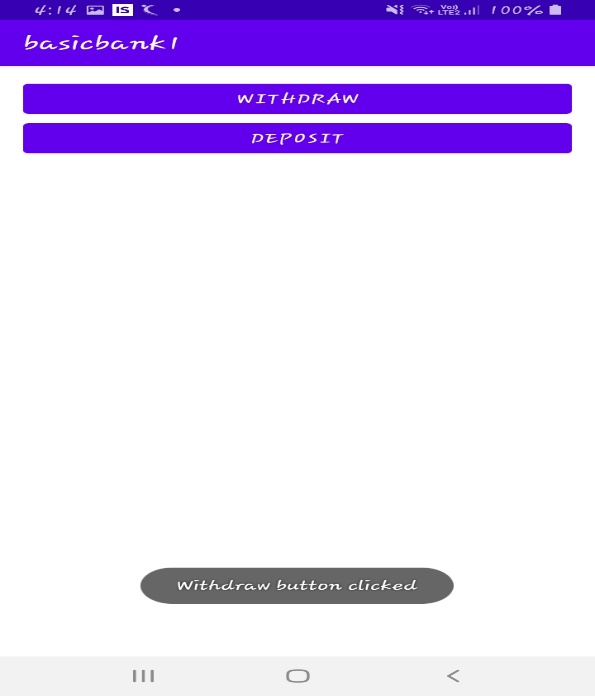
**activity\_main.xml**

*<?*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">  
 <Button  
 android:id="@+id/btnWithdraw"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Withdraw" />  
 <Button  
 android:id="@+id/btnDeposit"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Deposit" />  
</LinearLayout>

**MainActivity.java**

*<?*xml version="1.0" encoding="utf-8"*?>*<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 package="com.example.basicbank1"  
 android:versionCode="1"  
 android:versionName="1.0" >  
  
 <uses-sdk  
 android:minSdkVersion="19"  
 android:targetSdkVersion="34" />  
  
 <permission  
 android:name="com.example.basicbank1.DYNAMIC\_RECEIVER\_NOT\_EXPORTED\_PERMISSION"  
 android:protectionLevel="signature" />  
  
 <uses-permission android:name="com.example.basicbank1.DYNAMIC\_RECEIVER\_NOT\_EXPORTED\_PERMISSION" />  
  
 <application  
 android:allowBackup="true"  
 android:appComponentFactory="androidx.core.app.CoreComponentFactory"  
 android:debuggable="true"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:testOnly="true"  
 android:theme="@style/Theme.Basicbank1" >  
 <activity  
 android:name="com.example.basicbank1.MainActivity"  
 android:exported="" >  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
  
 <provider  
 android:name="androidx.startup.InitializationProvider"  
 android:authorities="com.example.basicbank1.androidx-startup"  
 android:exported="false" >  
 <meta-data  
 android:name="androidx.emoji2.text.EmojiCompatInitializer"  
 android:value="androidx.startup" />  
 <meta-data  
 android:name="androidx.lifecycle.ProcessLifecycleInitializer"  
 android:value="androidx.startup" />  
 </provider>  
 </application>  
  
</manifest>

**Output:**

**8. Construct a register app to display different menu like add, delete, edit etc.**

**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">  
 <Button  
 android:id="@+id/btnAddUser"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Add User" />  
 <Button  
 android:id="@+id/btnDeleteUser"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Delete User" />  
 <Button  
 android:id="@+id/btnEditUser"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Edit User" />  
</LinearLayout>

**MainActivity.java**

package com.example.registrationopt;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import androidx.appcompat.app.AppCompatActivity;  
import android.widget.Button;  
public class MainActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 Button btnAddUser = findViewById(R.id.*btnAddUser*);  
 Button btnDeleteUser = findViewById(R.id.*btnDeleteUser*);  
 Button btnEditUser = findViewById(R.id.*btnEditUser*);  
 btnAddUser.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 openAddUserActivity();  
 }  
 });  
 btnDeleteUser.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 }  
 public void toEditUserActivity() {  
 openDeleteUserActivity();  
 }  
 });  
 btnEditUser.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 openEditUserActivity();  
 }  
 });  
 }  
 private void openAddUserActivity() {  
 Intent intent = new Intent(this, AddUserActivity.class);  
 startActivity(intent);  
 }  
 private void openDeleteUserActivity() {  
 Intent intent = new Intent(this, DeleteUserActivity.class);  
 startActivity(intent);  
 }  
 private void openEditUserActivity() {  
 Intent intent = new Intent(this, EditUserActivity.class);  
 startActivity(intent);  
 }  
}

**activity\_add\_user.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/edtName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name" />  
 <EditText  
 android:id="@+id/edtEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Email" />  
 <Button  
 android:id="@+id/btnAddUser"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Add User" />  
</LinearLayout>

**AddUserActivity.java**

package com.example.registrationopt;  
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;  
public class AddUserActivity extends AppCompatActivity {  
 private EditText edtName;  
 private EditText edtEmail;  
 private Button btnAddUser;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_add\_user*);  
 edtName = findViewById(R.id.*edtName*);  
 edtEmail = findViewById(R.id.*edtEmail*);  
 btnAddUser = findViewById(R.id.*btnAddUser*);  
 btnAddUser.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String name = edtName.getText().toString();  
 String email = edtEmail.getText().toString();  
 *//db* Toast.*makeText*(AddUserActivity.this, "User added: " + name, Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
 }  
}

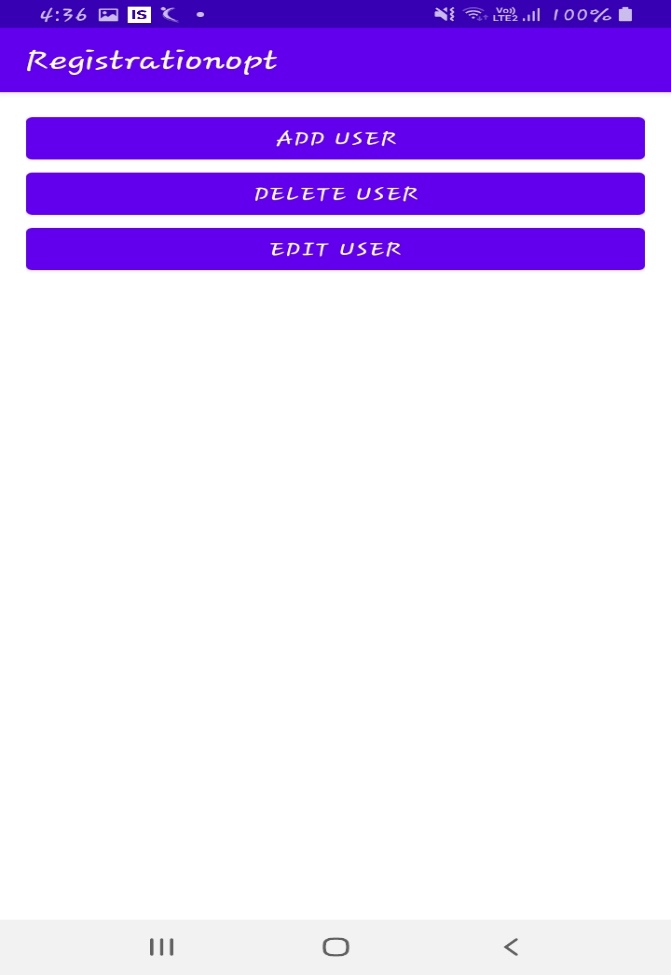
**DeleteUserActivity.java**

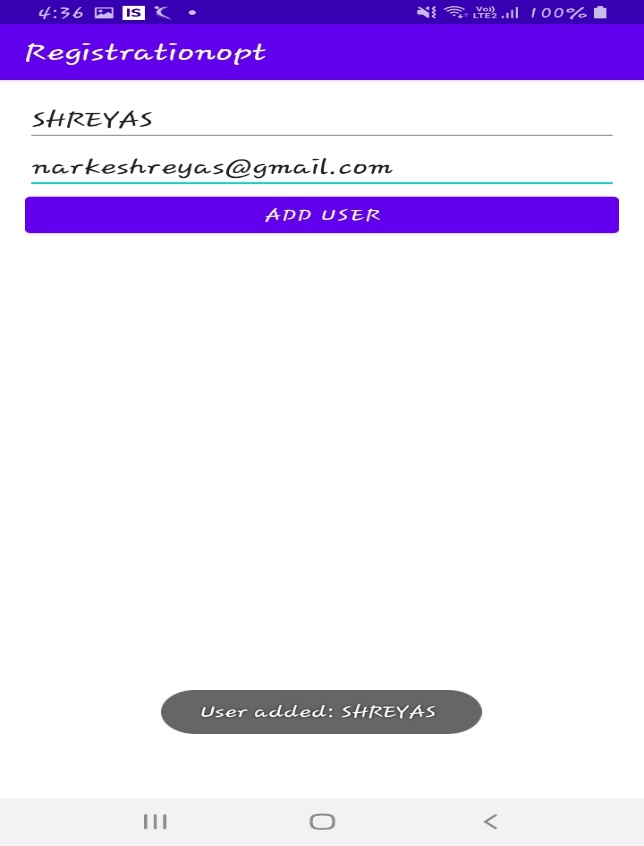
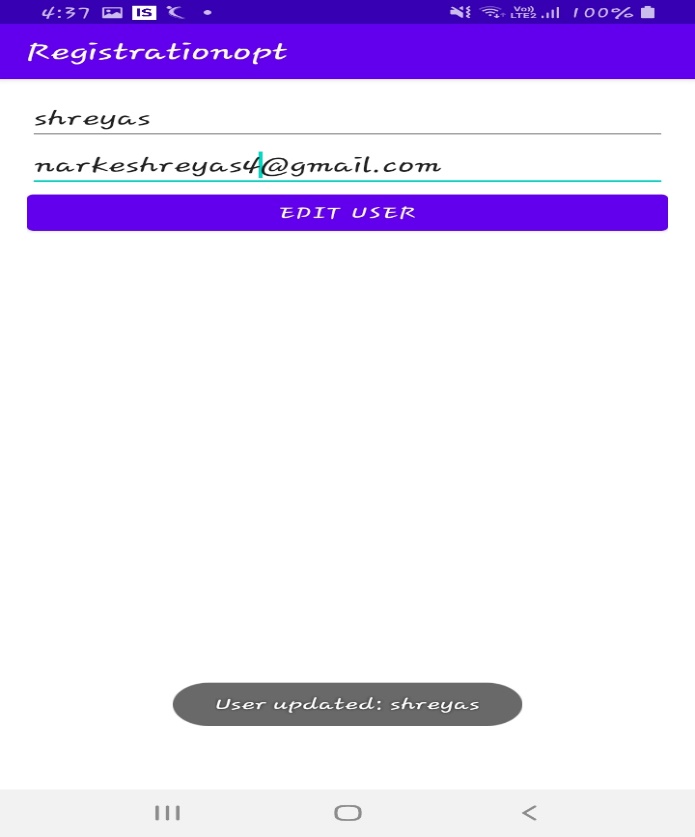
package com.example.registrationopt;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.Button;  
import android.widget.ListView;  
import android.widget.Toast;  
import androidx.appcompat.app.AppCompatActivity;  
public class DeleteUserActivity extends AppCompatActivity {  
 private ListView userList;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_delete\_user*);  
 userList = findViewById(R.id.*userList*);  
 String[] users = new String[]{"User 1", "User 2", "User 3"};  
 ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.*simple\_list\_item\_1*, users);  
 userList.setAdapter(adapter);  
 userList.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
 @Override  
 public void onItemClick(AdapterView<?> parent, View view, int position, long id) {  
 String selectedUser = (String) parent.getItemAtPosition(position);  
 *//db* Toast.*makeText*(DeleteUserActivity.this, "User deleted: " + selectedUser, Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
 }  
}

**EditUserActivity.java**

package com.example.registrationopt;  
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;  
public class EditUserActivity extends AppCompatActivity {  
 private EditText edtEditedName;  
 private EditText edtEditedEmail;  
 private Button btnEditUser;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_edit\_user*);  
 edtEditedName = findViewById(R.id.*edtEditedName*);  
 edtEditedEmail = findViewById(R.id.*edtEditedEmail*);  
 btnEditUser = findViewById(R.id.*btnEditUser*);  
 btnEditUser.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String editedName = edtEditedName.getText().toString();  
 String editedEmail = edtEditedEmail.getText().toString();  
 *//db* Toast.*makeText*(EditUserActivity.this, "User updated: " + editedName, Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
 }  
}

**output::**



**9.Create application to send and receive messages using SMS Manager.**

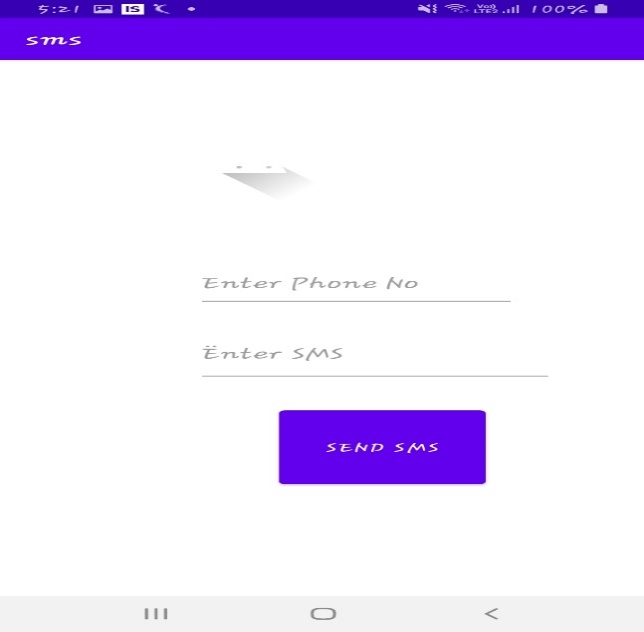
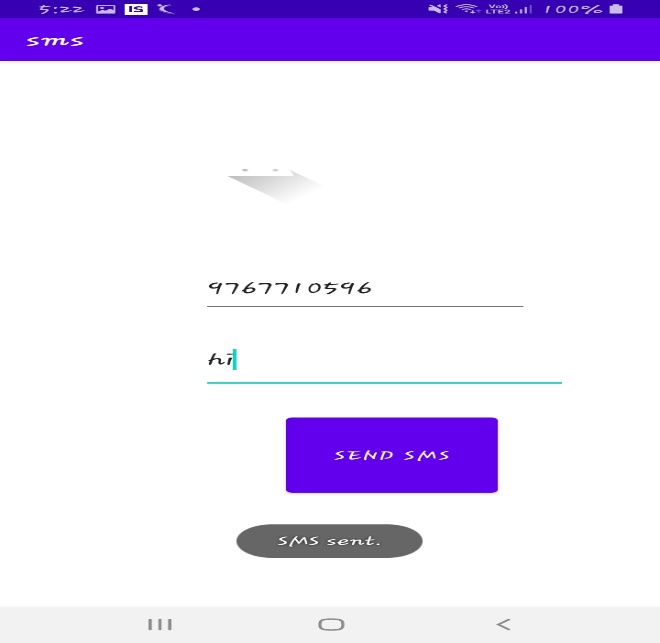
**MainActivity.java**

package com.example.sms;  
import android.Manifest;  
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;  
public class MainActivity extends AppCompatActivity {  
 private static final int *MY\_PERMISSIONS\_REQUEST\_SEND\_SMS*=0;  
 Button button;  
 EditText Text1,Text2;  
 String phone,message;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 button=(Button)findViewById(R.id.*sndbtn*);  
 Text1=(EditText)findViewById(R.id.*text1*);  
 Text2=(EditText)findViewById(R.id.*text2*);  
  
 button.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 sendSMSMessage();  
 }  
 });  
 }  
 protected void sendSMSMessage(){  
 phone = Text1.getText().toString();  
 message = Text2.getText().toString();  
 if (ContextCompat.checkSelfPermission(this,  
 Manifest.permission.*SEND\_SMS*)  
 != PackageManager.*PERMISSION\_GRANTED*) {  
 if (ActivityCompat.shouldShowRequestPermissionRationale(this,  
 Manifest.permission.*SEND\_SMS*)) {  
 } else {  
 ActivityCompat.requestPermissions(this,  
 new String[]{Manifest.permission.*SEND\_SMS*},  
 *MY\_PERMISSIONS\_REQUEST\_SEND\_SMS*);  
 }  
 }  
 }  
 public void onRequestPermissionsResult(int requestCode,String permissions[], int[] grantResults) {  
 super.onRequestPermissionsResult(requestCode, permissions, grantResults);  
 switch (requestCode) {  
 case *MY\_PERMISSIONS\_REQUEST\_SEND\_SMS*: {  
 if (grantResults.length > 0  
 && grantResults[0] == PackageManager.*PERMISSION\_GRANTED*) {  
 SmsManager smsManager = SmsManager.*getDefault*();  
 smsManager.sendTextMessage(phone, null, message, null, null);  
 Toast.makeText(getApplicationContext(), "SMS sent.",  
 Toast.*LENGTH\_LONG*).show();  
 } else {  
 Toast.makeText(getApplicationContext(),  
 "SMS faild, please try again.", Toast.*LENGTH\_LONG*).show();  
 return;  
 }  
 }  
 }  
 }  
}

**activity\_main.xml**

*<?*xml version="1.0" encoding="utf-8"*?>*<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
 <ImageView  
 android:id="@+id/imageView2"  
 android:layout\_width="200dp"  
 android:layout\_height="110dp"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginStart="62dp"  
 android:layout\_marginLeft="62dp"  
 android:layout\_marginTop="94dp"  
 android:layout\_marginEnd="149dp"  
 android:layout\_marginRight="149dp"  
 android:layout\_marginBottom="527dp"  
 app:srcCompat="@drawable/ic\_launcher\_foreground" />  
 <EditText  
 android:id="@+id/text1"  
 android:layout\_width="205dp"  
 android:layout\_height="78dp"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginStart="125dp"  
 android:layout\_marginLeft="125dp"  
 android:layout\_marginTop="267dp"  
 android:layout\_marginEnd="81dp"  
 android:layout\_marginRight="81dp"  
 android:layout\_marginBottom="386dp"  
 android:hint="Enter Phone No"/>  
 <EditText  
 android:id="@+id/text2"  
 android:layout\_width="229dp"  
 android:layout\_height="89dp"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginStart="125dp"  
 android:layout\_marginLeft="125dp"  
 android:layout\_marginTop="356dp"  
 android:layout\_marginEnd="57dp"  
 android:layout\_marginRight="57dp"  
 android:layout\_marginBottom="286dp"  
 android:hint="Ënter SMS"/>  
 <Button  
 android:id="@+id/sndbtn"  
 android:layout\_width="132dp"  
 android:layout\_height="110dp"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentLeft="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_alignParentRight="true"  
 android:layout\_alignParentBottom="true"  
 android:layout\_marginStart="178dp"  
 android:layout\_marginLeft="178dp"  
 android:layout\_marginEnd="101dp"  
 android:layout\_marginRight="101dp"  
 android:layout\_marginBottom="144dp"  
 android:text="Send SMS" />  
</RelativeLayout>

Output::

**10.Create application to design login form, validate it. Write and send email with appropriate message**

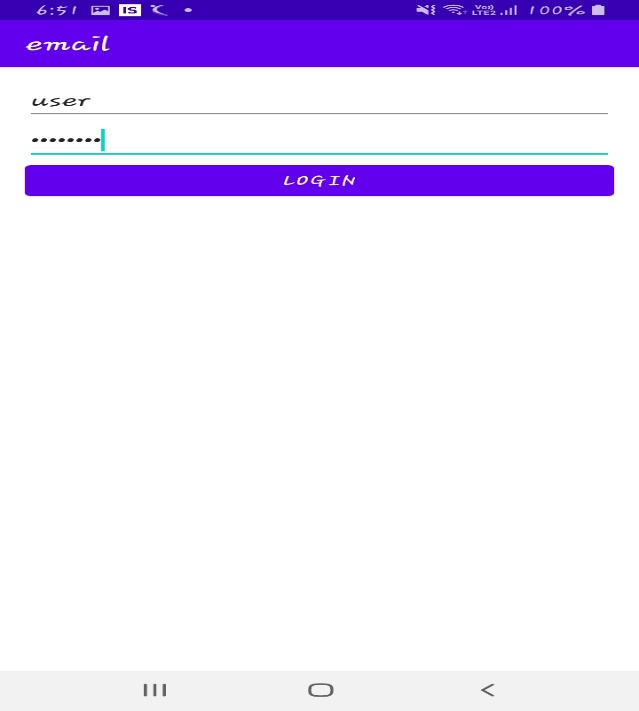
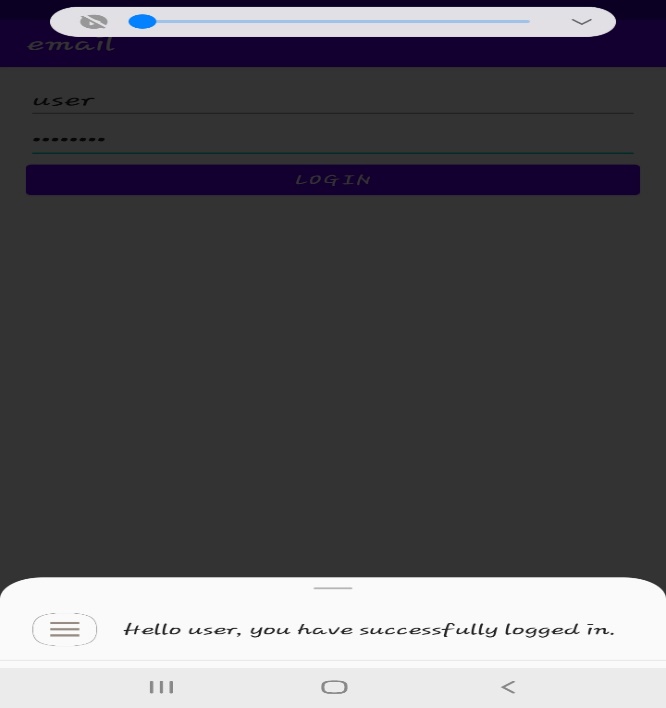
**Loginactivity.java**

package com.example.email;  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import androidx.appcompat.app.AppCompatActivity;  
public class LoginActivity extends AppCompatActivity {  
 private EditText edtUsername;  
 private EditText edtPassword;  
 private Button btnLogin;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_login*);  
 edtUsername = findViewById(R.id.*edtUsername*);  
 edtPassword = findViewById(R.id.*edtPassword*);  
 btnLogin = findViewById(R.id.*btnLogin*);  
 btnLogin.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String username = edtUsername.getText().toString();  
 String password = edtPassword.getText().toString();  
 if (isValid(username, password)) {  
 sendEmail(username);  
 } else {  
 showError("Invalid credentials. Please try again.");  
 }  
 }  
 });  
 }  
 private boolean isValid(String username, String password) {  
 return username.equals("user") && password.equals("password");  
 }  
 private void sendEmail(String username) {  
 String recipientEmail = "recipient@example.com";  
 String subject = "Login Successful";  
 String message = "Hello " + username + ", you have successfully logged in.";  
 Intent emailIntent = new Intent(Intent.*ACTION\_SEND*);  
 emailIntent.setType("message/rfc822");  
 emailIntent.putExtra(Intent.*EXTRA\_EMAIL*, new String[]{recipientEmail});  
 emailIntent.putExtra(Intent.*EXTRA\_SUBJECT*, subject);  
 emailIntent.putExtra(Intent.*EXTRA\_TEXT*, message);  
 startActivity(Intent.*createChooser*(emailIntent, "Send Email"));  
 }  
 private void showError(String errorMessage) {  
 }  
}

**activity\_login.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/edtUsername"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Username" />  
 <EditText  
 android:id="@+id/edtPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Password"  
 android:inputType="textPassword" />  
 <Button  
 android:id="@+id/btnLogin"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Login" />  
</LinearLayout>

**Output::**

**11. Write a program to calculate distance between two locations on Google Map.**

**MapsActivity.java**

package com.example.mygoogleapp;  
import android.os.Bundle;  
import android.widget.Toast;  
import androidx.fragment.app.FragmentActivity;  
import com.google.android.gms.maps.GoogleMap;  
import com.google.android.gms.maps.OnMapReadyCallback;  
import com.google.android.gms.maps.SupportMapFragment;  
import com.google.android.gms.maps.model.LatLng;  
import com.google.maps.android.SphericalUtil;  
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {  
 private GoogleMap mMap;  
 LatLng sydney = new LatLng(-34, 151);  
 LatLng Brisbane = new LatLng(-27.470125, 153.021072);  
 Double distance;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_maps*);  
 SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager().findFragmentById(R.id.*map*);  
 mapFragment.getMapAsync(this);  
 }  
 @Override  
 public void onMapReady(GoogleMap googleMap) {  
 mMap = googleMap;  
 distance = SphericalUtil.*computeDistanceBetween*(sydney, Brisbane);  
 Toast.*makeText*(this, "Distance between Sydney and Brisbane is \n " + String.*format*("%.2f", distance / 1000) + "km", Toast.*LENGTH\_SHORT*).show();  
 }  
}

**google\_maps\_api.xml**

<resources>  
 <string name="google\_maps\_key" templateMergeStrategy="preserve" translatable="false">AIzaSyABBNQ\_nROar\_bPkVx5iWtfLwha2utqEsM</string>  
</resources>

**Output::**



**12.Write a program to search a specific location on Google Map**

**activity\_maps.xml**

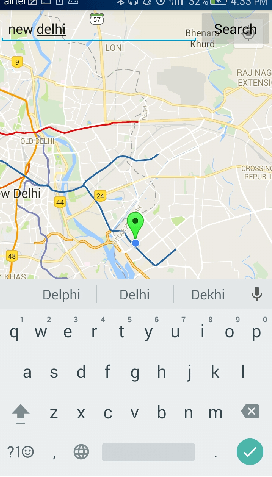
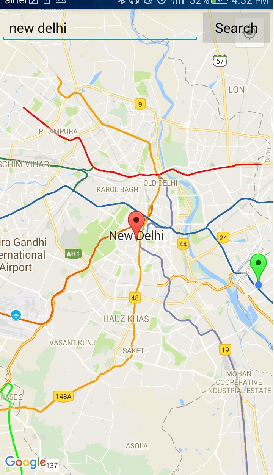
*<?*xml version="1.0" encoding="utf-8"*?>*<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 android:padding="16dp"  
 tools:context=".MapsActivity">  
 <AutoCompleteTextView  
 android:id="@+id/autoCompleteTextView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Search for a location"  
 android:layout\_marginBottom="16dp"/>  
 <com.google.android.gms.maps.MapView  
 android:id="@+id/mapView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:layout\_gravity="center"/>  
</LinearLayout>

**MapsActivity.java**

package com.example.mygoogleapp;  
import android.os.Bundle;  
import android.support.v7.app.AppCompatActivity;  
import android.view.View;  
import android.widget.AutoCompleteTextView;  
import com.google.android.gms.common.api.Status;  
import com.google.android.gms.location.places.ui.PlaceAutocomplete;  
import com.google.android.gms.location.places.ui.PlaceAutocompleteFragment;  
import com.google.android.gms.maps.GoogleMap;  
import com.google.android.gms.maps.MapView;  
import com.google.android.gms.maps.OnMapReadyCallback;  
import com.google.android.gms.maps.SupportMapFragment;  
import com.google.android.gms.maps.model.LatLng;  
import com.google.android.gms.maps.model.MarkerOptions;

public class MainActivity extends AppCompatActivity implements OnMapReadyCallback {  
 private AutoCompleteTextView autoCompleteTextView;  
 private GoogleMap mMap;  
 private MapView mapView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_maps*);  
 autoCompleteTextView = findViewById(R.id.*autoCompleteTextView*);  
 mapView = findViewById(R.id.*mapView*);  
 mapView.onCreate(savedInstanceState);  
 mapView.getMapAsync(this);  
 PlaceAutocompleteFragment autocompleteFragment = (PlaceAutocompleteFragment)  
 getFragmentManager().findFragmentById(R.id.place\_autocomplete\_fragment);  
 autocompleteFragment.setOnPlaceSelectedListener(new PlaceAutocompleteFragment.OnPlaceSelectedListener() {  
 @Override  
 public void onPlaceSelected(com.google.android.gms.location.places.Place place) {  
 LatLng location = place.getLatLng();  
 mMap.clear();  
 mMap.addMarker(new MarkerOptions().position(location).title(place.getName().toString()));  
 mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(location, 14));  
 }  
 @Override  
 public void onError(Status status) {  
 *// Handle any errors* }  
 });  
 }  
 @Override  
 public void onMapReady(GoogleMap googleMap) {  
 mMap = googleMap;  
 }  
 @Override  
 public void onResume() {  
 mapView.onResume();  
 super.onResume();  
 }  
 @Override  
 public void onPause() {  
 mapView.onPause();  
 super.onPause();  
 }  
 @Override  
 public void onDestroy() {  
 mapView.onDestroy();  
 super.onDestroy();  
 }  
 @Override  
 public void onLowMemory() {  
 super.onLowMemory();  
 mapView.onLowMemory();  
 }  
}

**output:**

**13. Create Table project (pno, p\_name, ptype, duration) and employee (id, e\_name, qulification, joindate) Project – employee have many to many relationship. Using database perform following operation. 1) Add new record into table. 2) Accept a project name from user and display information of employees working on the project**

**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.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.Slip1\_3"

tools:targetApi="33">

<activity

android:name=".MainActivity"

android:exported="true">

<intent-filter>

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

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

</intent-filter>

</activity>

</application>

</manifest>

**activity\_main.xml**

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_x="50dp"

android:layout\_y="20dp"

android:text="Student Details"

android:textSize="30sp" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_x="20dp"

android:layout\_y="110dp"

android:text="Enter Rollno:"

android:textSize="20sp" />

<EditText

android:id="@+id/Rollno"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="175dp"

android:layout\_y="100dp"

android:inputType="number"

android:textSize="20sp" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_x="20dp"

android:layout\_y="160dp"

android:text="Enter Name:"

android:textSize="20sp" />

<EditText

android:id="@+id/Name"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="175dp"

android:layout\_y="150dp"

android:inputType="text"

android:textSize="20sp" />

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_x="20dp"

android:layout\_y="210dp"

android:text="Enter Marks:"

android:textSize="20sp" />

<EditText

android:id="@+id/Marks"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="175dp"

android:layout\_y="200dp"

android:inputType="number"

android:textSize="20sp" />

<Button

android:id="@+id/Insert"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="25dp"

android:layout\_y="300dp"

android:text="Insert"

android:textSize="30dp" />

<Button

android:id="@+id/Delete"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="200dp"

android:layout\_y="300dp"

android:text="Delete"

android:textSize="30dp" />

<Button

android:id="@+id/Update"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="25dp"

android:layout\_y="400dp"

android:text="Update"

android:textSize="30dp" />

<Button

android:id="@+id/View"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_x="200dp"

android:layout\_y="400dp"

android:text="View"

android:textSize="30dp" />

<Button

android:id="@+id/ViewAll"

android:layout\_width="200dp"

android:layout\_height="wrap\_content"

android:layout\_x="100dp"

android:layout\_y="500dp"

android:text="View All"

android:textSize="30dp" />

</AbsoluteLayout>

**MainActivity.java**

package com.example.slip1\_3;

import android.app.Activity;

import android.app.AlertDialog.Builder;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.os.Bundle;

import android.view.View;

import android.view.View.OnClickListener;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener

{

EditText Rollno,Name,Marks;

Button Insert,Delete,Update,View,ViewAll;

SQLiteDatabase db;

/\*\* Called when the activity is first created. \*/

@Override

public void onCreate(Bundle savedInstanceState)

{

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

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

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

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

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

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

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

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

Insert.setOnClickListener(this);

Delete.setOnClickListener(this);

Update.setOnClickListener(this);

View.setOnClickListener(this);

ViewAll.setOnClickListener(this);

// Creating database and table

db=openOrCreateDatabase("StudentDB", Context.MODE\_PRIVATE, null);

db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name VARCHAR,marks VARCHAR);");

}

public void onClick(View view)

{

// Inserting a record to the Student table

if(view==Insert)

{

// Checking for empty fields

if(Rollno.getText().toString().trim().length()==0||

Name.getText().toString().trim().length()==0||

Marks.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter all values");

return;

}

db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+

"','"+Marks.getText()+"');");

showMessage("Success", "Record added");

clearText();

}

// Deleting a record from the Student table

if(view==Delete)

{

// Checking for empty roll number

if(Rollno.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter Rollno");

return;

}

Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);

if(c.moveToFirst())

{

db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");

showMessage("Success", "Record Deleted");

}

else

{

showMessage("Error", "Invalid Rollno");

}

clearText();

}

// Updating a record in the Student table

if(view==Update)

{

// Checking for empty roll number

if(Rollno.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter Rollno");

return;

}

Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);

if(c.moveToFirst()) {

db.execSQL("UPDATE student SET name='" + Name.getText() + "',marks='" + Marks.getText() +

"' WHERE rollno='"+Rollno.getText()+"'");

showMessage("Success", "Record Modified");

}

else {

showMessage("Error", "Invalid Rollno");

}

clearText();

}

// Display a record from the Student table

if(view==View)

{

// Checking for empty roll number

if(Rollno.getText().toString().trim().length()==0)

{

showMessage("Error", "Please enter Rollno");

return;

}

Cursor c=db.rawQuery("SELECT \* FROM student WHERE rollno='"+Rollno.getText()+"'", null);

if(c.moveToFirst())

{

Name.setText(c.getString(1));

Marks.setText(c.getString(2));

}

else

{

showMessage("Error", "Invalid Rollno");

clearText();

}

}

// Displaying all the records

if(view==ViewAll)

{

Cursor c=db.rawQuery("SELECT \* FROM student", null);

if(c.getCount()==0)

{

showMessage("Error", "No records found");

return;

}

StringBuffer buffer=new StringBuffer();

while(c.moveToNext())

{

buffer.append("Rollno: "+c.getString(0)+"\n");

buffer.append("Name: "+c.getString(1)+"\n");

buffer.append("Marks: "+c.getString(2)+"\n\n");

}

showMessage("Student Details", buffer.toString());

}

}

public void showMessage(String title,String message)

{

Builder builder=new Builder(this);

builder.setCancelable(true);

builder.setTitle(title);

builder.setMessage(message);

builder.show();

}

public void clearText()

{

Rollno.setText("");

Name.setText("");

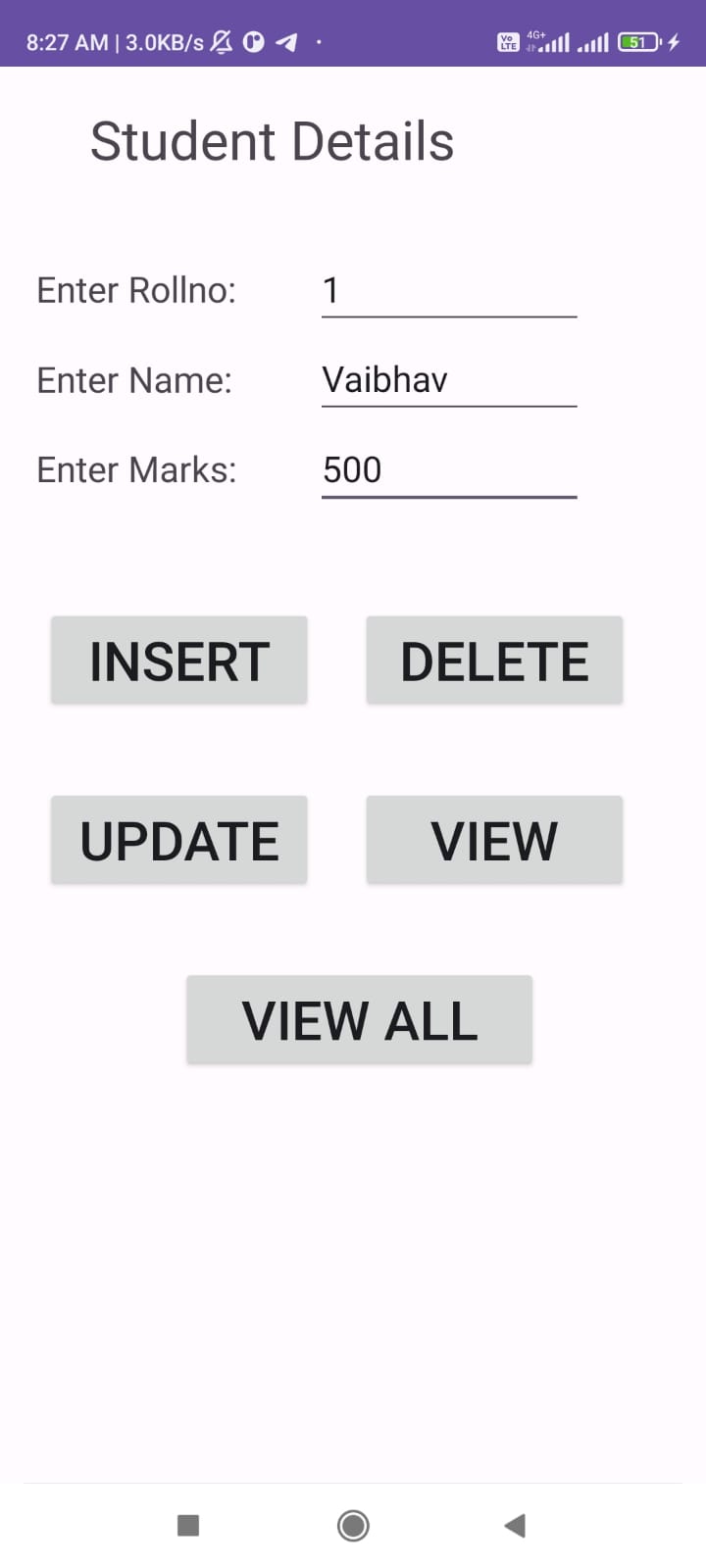
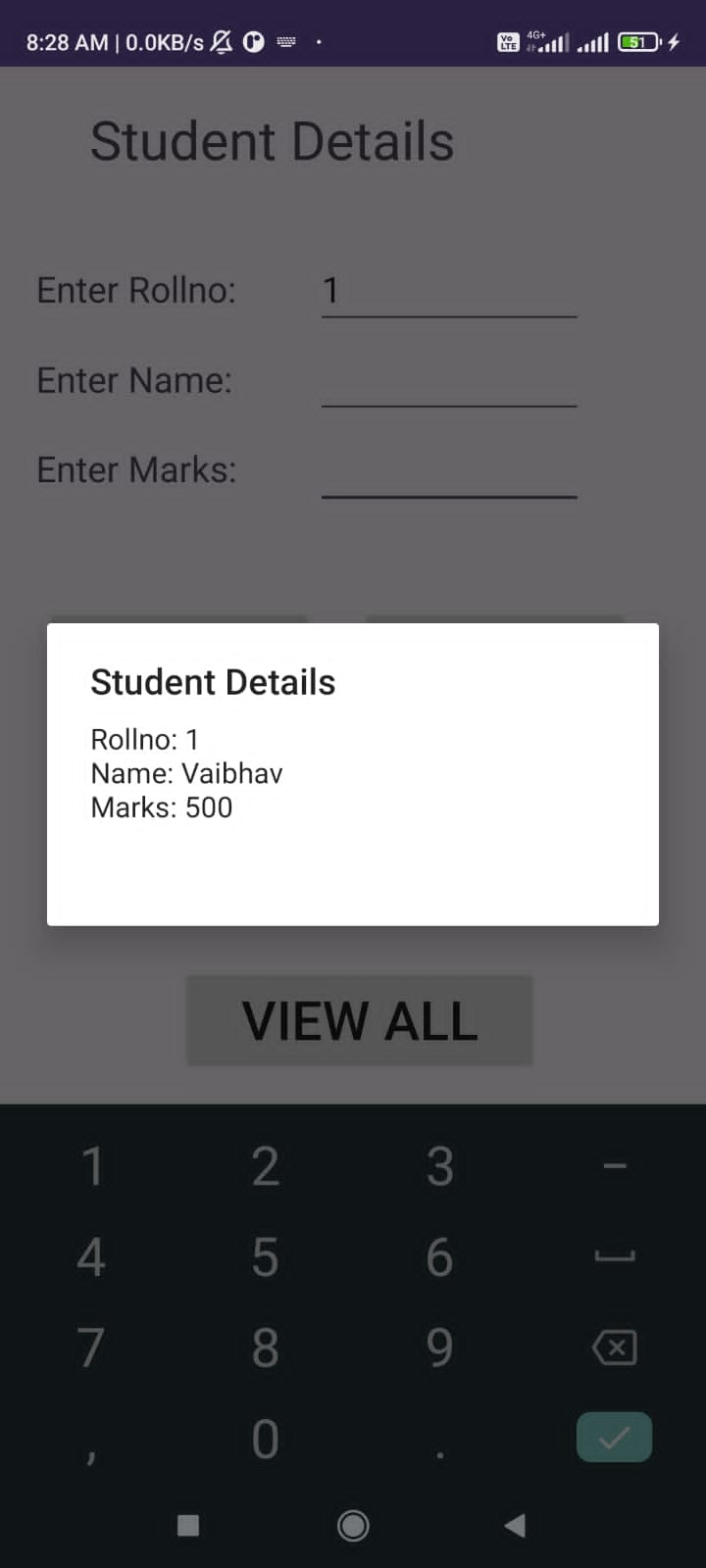
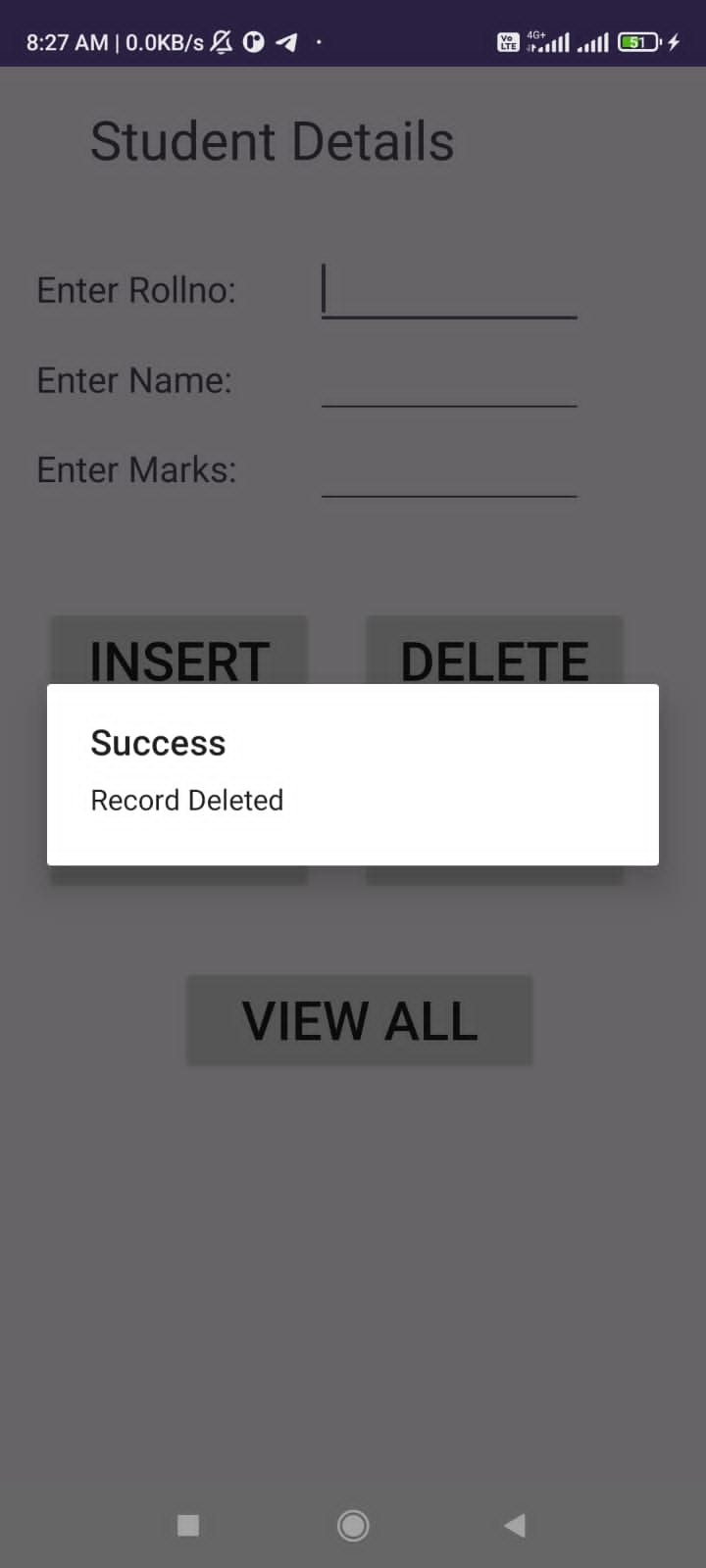
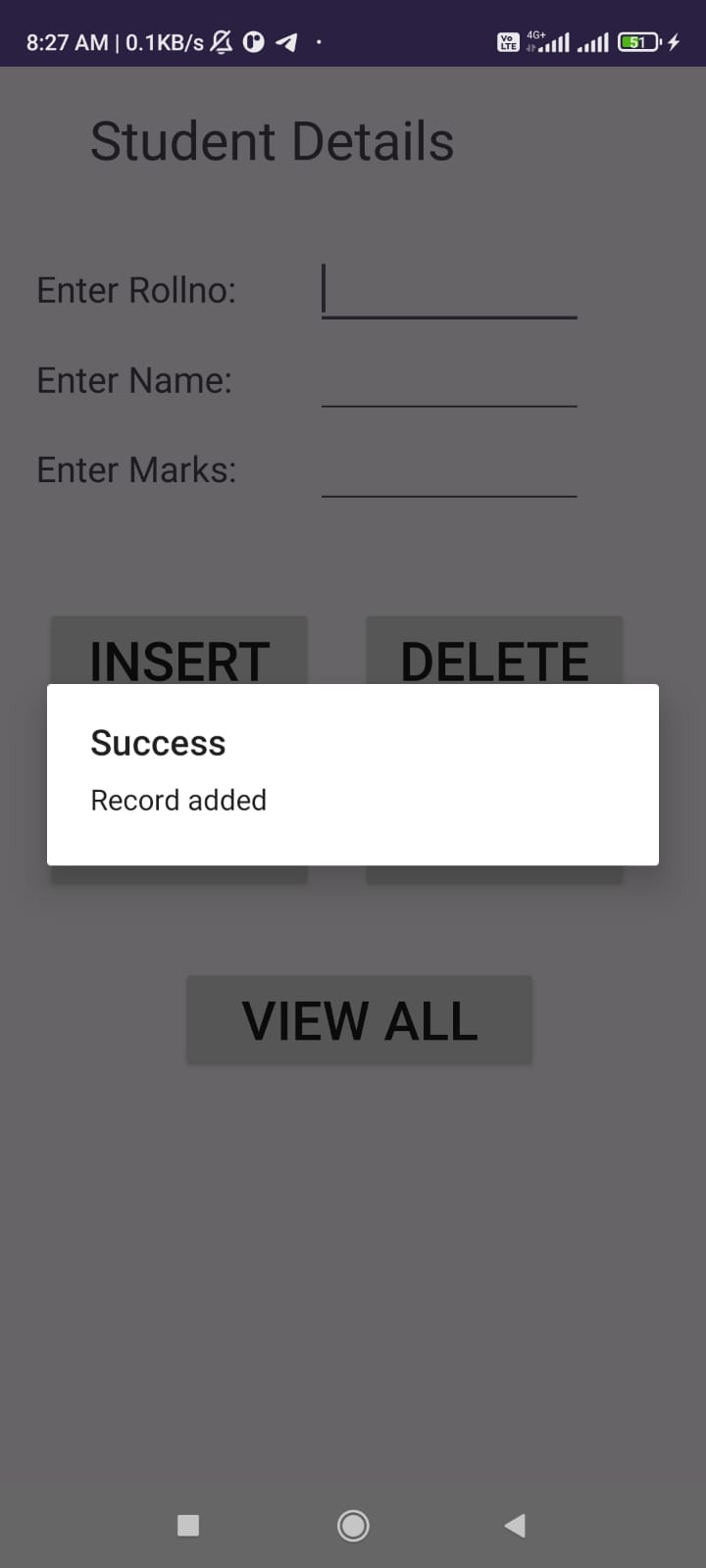
Marks.setText("");

Rollno.requestFocus();

}

}

**Output:**

14. Create application using JSON which gives us list of contacts where each node contains contact information like name, email, address, gender and phone numbers.

**MainActivity.java**

package com.example.contactlist;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.util.Log;  
import android.widget.ListView;  
import android.widget.SimpleAdapter;  
import org.json.JSONArray;  
import org.json.JSONException;  
import org.json.JSONObject;  
import java.util.ArrayList;  
import java.util.HashMap;  
import java.util.List;  
  
public class MainActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 // Private string declared in the latter section of the program  
 String jsonStr = getListData();  
 try {  
 // Create a userList string hashmap arraylist  
 List<HashMap<String, String>> userList = new ArrayList<>();  
 // Declaring the listView from the layout file  
 ListView lv = findViewById(R.id.user\_list);  
 // Initializing the JSON object and extracting the information  
 JSONObject jObj = new JSONObject(jsonStr);  
 JSONArray jsonArry = jObj.getJSONArray("users");  
 for (int i = 0; i < jsonArry.length(); i++) {  
 HashMap<String, String> user = new HashMap<>();  
 JSONObject obj = jsonArry.getJSONObject(i);  
 user.put("name", obj.getString("name"));  
 user.put("email", obj.getString("email"));  
 user.put("address", obj.getString("address"));  
 user.put("gender", obj.getString("gender"));  
 user.put("phone", obj.getString("phone"));  
 userList.add(user);  
 }  
 // ListAdapter to broadcast the information to the list elements  
 SimpleAdapter adapter = new SimpleAdapter(  
 this, userList, R.layout.list\_row,  
 new String[]{"name", "email", "address", "gender", "phone"},  
 new int[]{R.id.name, R.id.email, R.id.address, R.id.gender, R.id.phone}  
 );

lv.setAdapter(adapter);  
  
 } catch (JSONException ex) {  
 Log.e("JsonParser Example", "unexpected JSON exception", ex);  
 }  
 }  
 // JSON object in the form of input stream  
 private String getListData() {  
 return "{ \"users\" :[" + "{\"name\":\"Ace\",\"email\":\"Engineer@123\",\"address\":\"pune\",\"gender\":\"male\",\"phone\":\"123456789\"}," + {\"name\":\"Tom\",\"email\":\"Director@123\",\"address\":\"nashik\",\"gender\":\"male\",\"phone\":\"123456789\"}," + "{\"name\":\"Tim\",\"email\":\"ChartedAccountant@123\",\"address\":\"mumbai\",\"gender\":\"male\",\"phone\":\"123456789\"}," + "{\"name\":\"cook\",\"email\":\"ChartedAccountant@123\",\"address\":\"baramati\",\"gender\":\"male\",\"phone\":\"123456789\"}," + "{\"name\":\"john\",\"email\":\"ChartedAccountant@123\",\"address\":\"pcmc\",\"gender\":\"female\",\"phone\":\"123456789\"}] }";  
 }  
}

**activity\_main.xml**

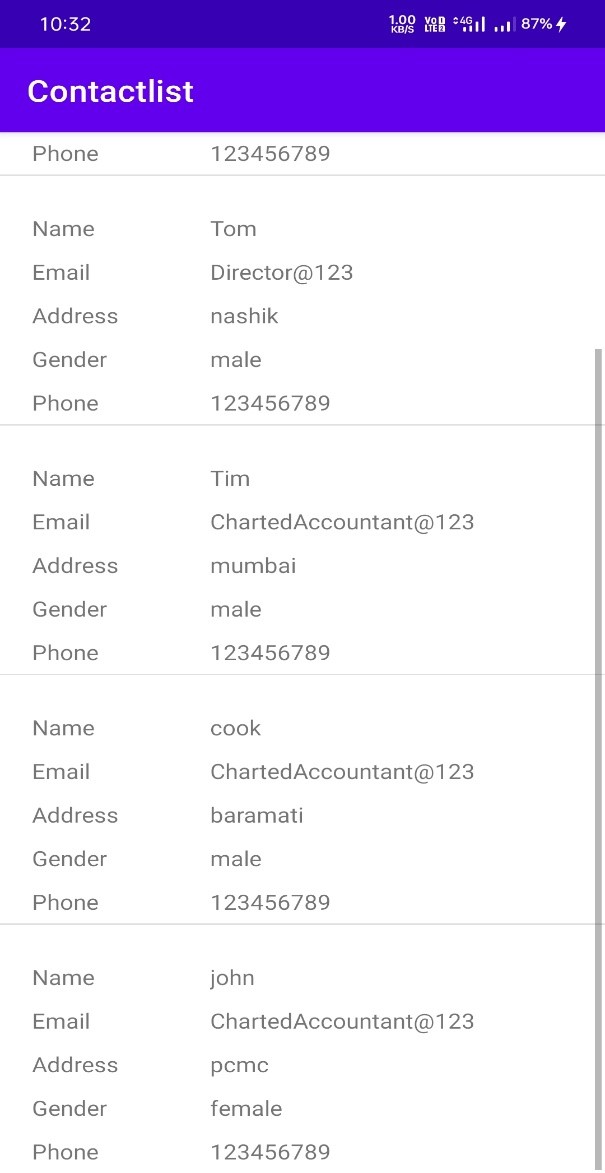
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="fill\_parent"  
 android:layout\_height="fill\_parent"  
 android:orientation="vertical" >  
 <!--This listView will display the list items-->  
 <ListView  
 android:id="@+id/user\_list"  
 android:layout\_width="fill\_parent"  
 android:layout\_height="wrap\_content"  
 android:dividerHeight="1dp" />  
</LinearLayout>

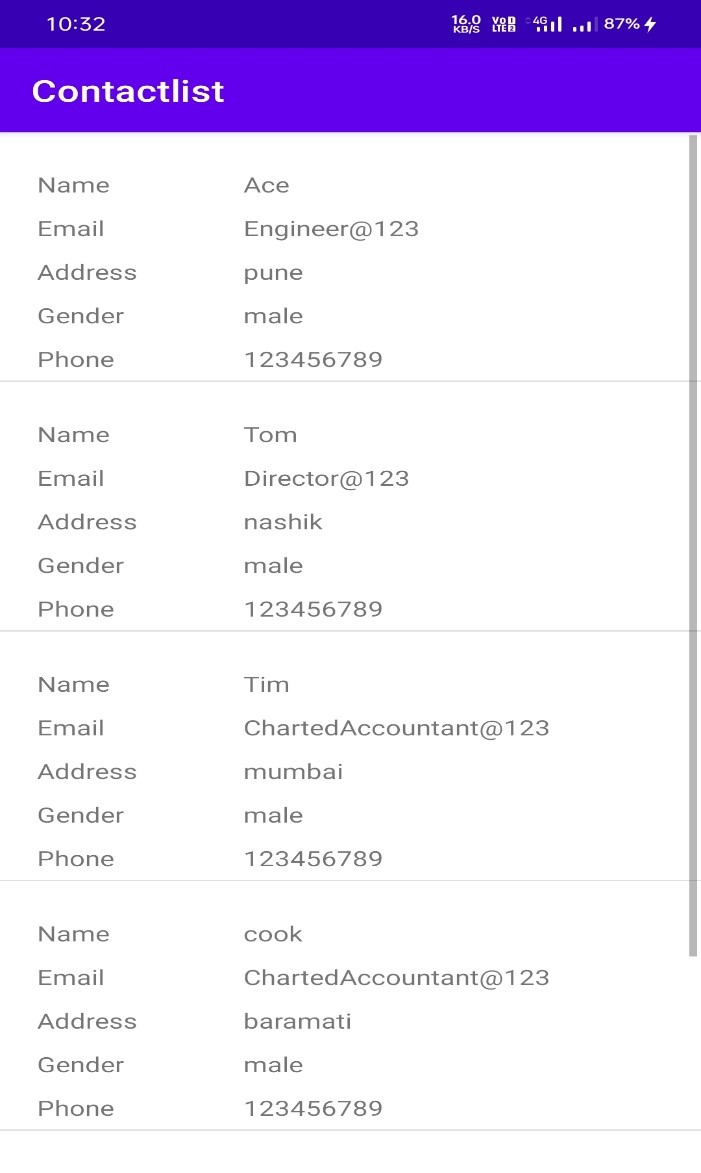
**list\_row.xml**

<?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="wrap\_content"  
 android:padding="5dp">

<TextView  
 android:id="@+id/phone2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/gender"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="14dp"  
 android:layout\_marginTop="10dp"  
 android:text="Phone"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/name2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="14dp"  
 android:layout\_marginTop="20dp"  
 android:text="Name"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/name"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="120dp"  
 android:layout\_marginTop="20dp"  
 android:text="Name"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/email"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/name"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="120dp"  
 android:layout\_marginTop="10dp"  
 android:text="Email"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/email2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/name"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="14dp"  
 android:layout\_marginTop="10dp"  
 android:text="Email"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/address"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/email"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="120dp"  
 android:layout\_marginTop="10dp"  
 android:text="Address"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/address2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/email"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="14dp"  
 android:layout\_marginTop="10dp"  
 android:text="Address"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/gender"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/address"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="120dp"  
 android:layout\_marginTop="10dp"  
 android:text="Gender"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/gender2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/address"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="14dp"  
 android:layout\_marginTop="10dp"  
 android:text="Gender"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/phone"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/gender"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="120dp"  
 android:layout\_marginTop="10dp"  
 android:text="Phone"  
 tools:ignore="HardcodedText" />  
</RelativeLayout>

**Output:**

****

****

**15. Create application using JSON which gives the Employee information.**

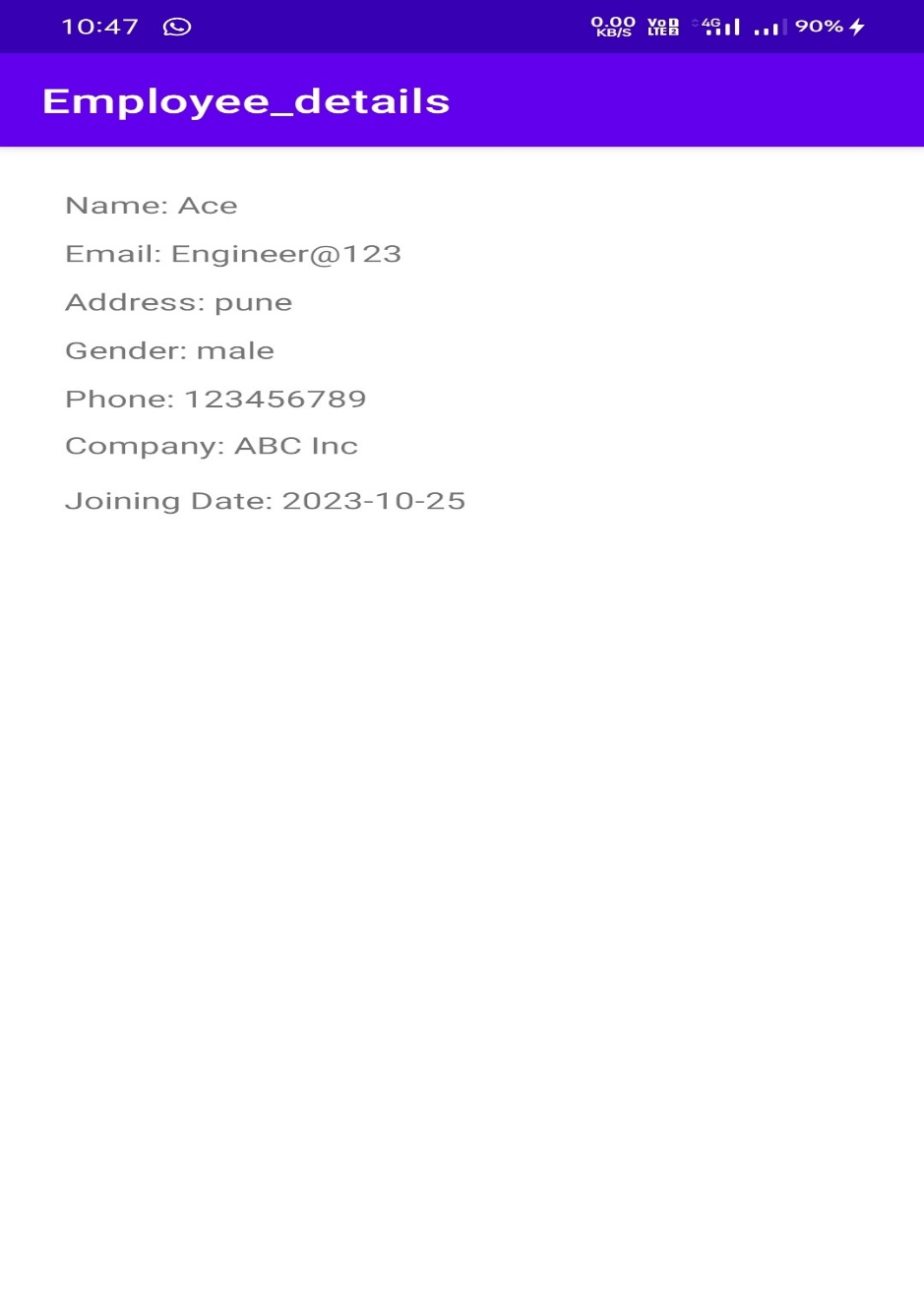
**MainActivity.java**

package com.example.employee\_details;  
import androidx.appcompat.app.AppCompatActivity;  
import android.os.Bundle;  
import android.util.Log;  
import android.widget.TextView;  
import org.json.JSONException;  
import org.json.JSONObject;  
  
public class MainActivity extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
 // Private string declared in the latter section of the program  
 String jsonStr = getEmployeeData();  
 try {  
 // Initializing the JSON object and extracting the information for a single employee  
 JSONObject employeeObj = new JSONObject(jsonStr);  
 String name = employeeObj.getString("name");  
 String email = employeeObj.getString("email");  
 String address = employeeObj.getString("address");  
 String gender = employeeObj.getString("gender");  
 String phone = employeeObj.getString("phone");  
 String companyName = employeeObj.getString("companyName");  
 String joiningDate = employeeObj.getString("joiningDate");  
 // Display the employee details in TextViews  
 TextView nameTextView = findViewById(R.id.name);  
 TextView emailTextView = findViewById(R.id.email);  
 TextView addressTextView = findViewById(R.id.address);  
 TextView genderTextView = findViewById(R.id.gender);  
 TextView phoneTextView = findViewById(R.id.phone);  
 TextView companyTextView = findViewById(R.id.companyName);  
 TextView joiningDateTextView = findViewById(R.id.joiningDate);  
 nameTextView.setText("Name: " + name);  
 emailTextView.setText("Email: " + email);  
 addressTextView.setText("Address: " + address);  
 genderTextView.setText("Gender: " + gender);  
 phoneTextView.setText("Phone: " + phone);  
 companyTextView.setText("Company: " + companyName);  
 joiningDateTextView.setText("Joining Date: " + joiningDate);  
 } catch (JSONException ex) {  
 Log.e("JsonParser Example", "unexpected JSON exception", ex);  
 }  
 }  
 private String getEmployeeData() {  
 return "{" +  
 "\"name\":\"Ace\"," +  
 "\"email\":\"Engineer@123\"," +  
 "\"address\":\"pune\"," +  
 "\"gender\":\"male\"," +  
 "\"phone\":\"123456789\"," +  
 "\"companyName\":\"ABC Inc\"," +  
 "\"joiningDate\":\"2023-10-25\"" +  
 "}";  
 }  
}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="5dp">  
 <TextView  
 android:id="@+id/name"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="20dp"  
 android:text="Name"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/email"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/name"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp"  
 android:text="Email"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/address"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/email"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp"  
 android:text="Address"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/gender"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/address"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp"  
 android:text="Gender"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/phone"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/gender"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="10dp"  
 android:text="Phone"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/companyName"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/gender"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="38dp"  
 android:text="companyName"  
 tools:ignore="HardcodedText" />  
 <TextView  
 android:id="@+id/joiningDate"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/gender"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="20dp"  
 android:layout\_marginTop="71dp"  
 android:text="joiningDate"  
 tools:ignore="HardcodedText" />  
</RelativeLayout>

**Output:**



Slip 1 -> Q2

<uses-permission android:name="android.permission.INTERNET" />  
<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE" />

<?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/editTextRollNo"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Roll No" />  
  
 <EditText  
 android:id="@+id/editTextName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/editTextRollNo"  
 android:hint="Name"  
 android:minHeight="48dp" />  
  
 <EditText  
 android:id="@+id/editTextClass"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/editTextName"  
 android:hint="Class"  
 android:minHeight="48dp" />  
  
 <EditText  
 android:id="@+id/editTextContact"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/editTextClass"  
 android:hint="Contact"  
 android:minHeight="48dp" />  
  
 <Button  
 android:id="@+id/buttonInsert"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/editTextContact"  
 android:text="Insert" />  
  
 <Button  
 android:id="@+id/buttonDisplay"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/buttonInsert"  
 android:text="Display"  
 tools:ignore="VisualLintButtonSize" />  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/buttonDisplay"  
 android:layout\_marginTop="16dp" />  
</RelativeLayout>

package com.example.student\_database;  
  
import android.annotation.SuppressLint;  
import android.content.ContentValues;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
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 {  
  
 EditText rollNoEditText, nameEditText, classEditText, contactEditText;  
 Button insertButton, displayButton;  
 TextView displayTextView;  
  
 DatabaseHelper dbHelper;  
 SQLiteDatabase db;  
  
 @SuppressLint("MissingInflatedId")  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 dbHelper = new DatabaseHelper(this);  
 db = dbHelper.getWritableDatabase();  
  
 rollNoEditText = findViewById(R.id.*editTextRollNo*);  
 nameEditText = findViewById(R.id.*editTextName*);  
 classEditText = findViewById(R.id.*editTextClass*);  
 contactEditText = findViewById(R.id.*editTextContact*);  
  
 insertButton = findViewById(R.id.*buttonInsert*);  
 displayButton = findViewById(R.id.*buttonDisplay*);  
  
 displayTextView = findViewById(R.id.*textView*);  
  
 insertButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 insertStudent();  
 }  
 });  
  
 displayButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 displayStudents();  
 }  
 });  
 }  
  
 private void insertStudent() {  
 ContentValues values = new ContentValues();  
 values.put(DatabaseHelper.*COLUMN\_NAME*, nameEditText.getText().toString());  
 values.put(DatabaseHelper.*COLUMN\_CLASS*, classEditText.getText().toString());  
 values.put(DatabaseHelper.*COLUMN\_CONTACT*, contactEditText.getText().toString());  
  
 long newRowId = db.insert(DatabaseHelper.*TABLE\_STUDENT*, null, values);  
  
 if (newRowId != -1) {  
 displayTextView.setText("Student inserted with ID: " + newRowId);  
 } else {  
 displayTextView.setText("Error inserting student.");  
 }  
 }  
  
 private void displayStudents() {  
 Cursor cursor = db.query(  
 DatabaseHelper.*TABLE\_STUDENT*,  
 null,  
 null,  
 null,  
 null,  
 null,  
 null  
 );  
  
 if (cursor != null && cursor.moveToFirst()) {  
 StringBuilder displayText = new StringBuilder();  
 do {  
 @SuppressLint("Range") int rollNo = cursor.getInt(cursor.getColumnIndex(DatabaseHelper.*COLUMN\_ROLLNO*));  
 String name = cursor.getString(cursor.getColumnIndex(DatabaseHelper.*COLUMN\_NAME*));  
 String studentClass = cursor.getString(cursor.getColumnIndex(DatabaseHelper.*COLUMN\_CLASS*));  
 String contact = cursor.getString(cursor.getColumnIndex(DatabaseHelper.*COLUMN\_CONTACT*));  
  
 displayText.append("Roll No: ").append(rollNo)  
 .append(", Name: ").append(name)  
 .append(", Class: ").append(studentClass)  
 .append(", Contact: ").append(contact)  
 .append("\n");  
 } while (cursor.moveToNext());  
  
 displayTextView.setText(displayText.toString());  
 } else {  
 displayTextView.setText("No students found.");  
 }  
  
 if (cursor != null) {  
 cursor.close();  
 }  
 }  
}

package com.example.student\_database;  
  
import android.content.Context;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
  
public class DatabaseHelper extends SQLiteOpenHelper {  
  
 private static final String *DATABASE\_NAME* = "StudentDB";  
 private static final int *DATABASE\_VERSION* = 1;  
  
 // Table and columns  
 public static final String *TABLE\_STUDENT* = "Student";  
 public static final String *COLUMN\_ROLLNO* = "Rollno";  
 public static final String *COLUMN\_NAME* = "Name";  
 public static final String *COLUMN\_CLASS* = "Class";  
 public static final String *COLUMN\_CONTACT* = "Contact";  
  
 // Create table query  
 private static final String *CREATE\_STUDENT\_TABLE* = "CREATE TABLE " + *TABLE\_STUDENT* + "("  
 + *COLUMN\_ROLLNO* + " INTEGER PRIMARY KEY AUTOINCREMENT,"  
 + *COLUMN\_NAME* + " TEXT,"  
 + *COLUMN\_CLASS* + " TEXT,"  
 + *COLUMN\_CONTACT* + " TEXT"  
 + ")";  
  
 public DatabaseHelper(Context context) {  
 super(context, *DATABASE\_NAME*, null, *DATABASE\_VERSION*);  
 }  
  
 @Override  
 public void onCreate(SQLiteDatabase db) {  
 db.execSQL(*CREATE\_STUDENT\_TABLE*);  
 }  
  
 @Override  
 public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {  
 // Drop older table if it exists and create a new one  
 db.execSQL("DROP TABLE IF EXISTS " + *TABLE\_STUDENT*);  
 onCreate(db);  
 }  
}

Slip 2-> Q2

<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">  
  
 <ListView  
 android:id="@+id/listView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"/>  
 <Button  
 android:id="@+id/btnAdd"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentBottom="true"  
 android:text="Add Details"/>  
</RelativeLayout>

package com.example.custme\_listview;  
  
// MainActivity.java  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.Button;  
import android.widget.ListView;  
import android.widget.Toast;  
import androidx.appcompat.app.AppCompatActivity;  
import java.util.ArrayList;  
import java.util.List;  
  
public class MainActivity extends AppCompatActivity {  
  
 private CustomListAdapter adapter;  
 private List<String> dataList;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 // Create a list of data  
 dataList = new ArrayList<>();  
 dataList.add("Item 1");  
 dataList.add("Item 2");  
 // Add more items as needed  
  
 // Create custom adapter  
 adapter = new CustomListAdapter(this, dataList);  
  
 // Get reference to ListView in your layout  
 ListView listView = findViewById(R.id.*listView*);  
  
 // Set the custom adapter to the ListView  
 listView.setAdapter(adapter);  
  
 // Get reference to the "Add Details" button  
 Button btnAdd = findViewById(R.id.*btnAdd*);  
  
 // Set onClickListener for the button  
 btnAdd.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 addDetail();  
 }  
 });  
 }  
  
 private void addDetail() {  
 // Add a new item to the list  
 dataList.add("New Item");  
  
 // Notify the adapter that the data set has changed  
 adapter.notifyDataSetChanged();  
  
 // Scroll to the last item in the list  
 ListView listView = findViewById(R.id.*listView*);  
 listView.setSelection(adapter.getCount() - 1);  
  
 // Optionally, show a toast message  
 Toast.*makeText*(this, "Details added", Toast.*LENGTH\_SHORT*).show();  
 }  
}

<LinearLayout  
 xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical">  
  
 <TextView  
 android:id="@+id/textViewName"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textSize="18sp"  
 android:textStyle="bold"/>  
  
 <TextView  
 android:id="@+id/textViewClass"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textSize="14sp"/>  
  
</LinearLayout>

package com.example.custme\_listview;  
  
// CustomAdapter.java  
import android.content.Context;  
import android.view.LayoutInflater;  
import android.view.View;  
import android.view.ViewGroup;  
import android.widget.BaseAdapter;  
import android.widget.TextView;  
import java.util.List;  
  
public class CustomListAdapter extends BaseAdapter {  
  
 private Context context;  
 private List<String> dataList;  
  
 // Constructor to initialize the adapter with context and data  
 public CustomListAdapter(Context context, List<String> dataList) {  
 this.context = context;  
 this.dataList = dataList;  
 }  
  
 // Return the number of items in the data set  
 @Override  
 public int getCount() {  
 return dataList.size();  
 }  
  
 // Return the data item at the specified position  
 @Override  
 public Object getItem(int position) {  
 return dataList.get(position);  
 }  
  
 // Return the row ID of the item at the specified position  
 @Override  
 public long getItemId(int position) {  
 return position;  
 }  
  
 // Get a View that displays the data at the specified position  
 // The convertView parameter is recycled for efficiency  
 @Override  
 public View getView(int position, View convertView, ViewGroup parent) {  
 ViewHolder viewHolder;  
  
 // If the view is not recycled, inflate it from the layout  
 if (convertView == null) {  
 convertView = LayoutInflater.*from*(context).inflate(R.layout.*list\_item\_layout*, parent, false);  
  
 // Create a ViewHolder and store references to the child views  
 viewHolder = new ViewHolder();  
 viewHolder.textViewItem = convertView.findViewById(R.id.*textViewName*);  
  
 // Store the ViewHolder in the tag of the view for later reuse  
 convertView.setTag(viewHolder);  
 } else {  
 // If the view is recycled, reuse the ViewHolder from the tag  
 viewHolder = (ViewHolder) convertView.getTag();  
 }  
  
 // Get the data item for this position  
 String item = (String) getItem(position);  
  
 // Bind the data to the view  
 viewHolder.textViewItem.setText(item);  
  
 return convertView;  
 }  
  
 // ViewHolder pattern to cache views for recycling  
 private static class ViewHolder {  
 TextView textViewItem;  
 }  
}

Slip3-> Q1 B) Switch Toggle

implementation 'androidx.appcompat:appcompat:1.3.1'  
implementation 'com.google.android.material:material:1.4.0'

<!-- activity\_main.xml -->  
<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">  
  
 <Switch  
 android:id="@+id/switchButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Switch"  
 android:layout\_marginTop="50dp"  
 android:layout\_centerHorizontal="true"/>  
  
 <ToggleButton  
 android:id="@+id/toggleButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Toggle"  
 android:layout\_below="@+id/switchButton"  
 android:layout\_marginTop="20dp"  
 android:layout\_centerHorizontal="true"/>  
  
 <TextView  
 android:id="@+id/textViewResult"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/toggleButton"  
 android:layout\_marginTop="20dp"  
 android:layout\_centerHorizontal="true"  
 android:text=""  
 android:textSize="18sp"/>  
</RelativeLayout>

package com.example.switch\_toggle;  
  
// MainActivity.java  
import android.os.Bundle;  
import android.widget.CompoundButton;  
import android.widget.Switch;  
import android.widget.TextView;  
import android.widget.ToggleButton;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 private Switch switchButton;  
 private ToggleButton toggleButton;  
 private TextView textViewResult;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 switchButton = findViewById(R.id.*switchButton*);  
 toggleButton = findViewById(R.id.*toggleButton*);  
 textViewResult = findViewById(R.id.*textViewResult*);  
  
 // Set listeners for Switch and ToggleButton state changes  
 switchButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {  
 @Override  
 public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {  
 updateResult("Switch is " + (isChecked ? "ON" : "OFF"));  
 }  
 });  
  
 toggleButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {  
 @Override  
 public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {  
 updateResult("Toggle is " + (isChecked ? "ON" : "OFF"));  
 }  
 });  
 }  
  
 // Update the TextView with the result  
 private void updateResult(String result) {  
 textViewResult.setText(result);  
 }  
}

Slip4-> A) sms manager intent

<uses-permission android:name="android.permission.SEND\_SMS" />  
<uses-permission android:name="android.permission.RECEIVE\_SMS" />

<!-- activity\_main.xml -->  
<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/editTextPhoneNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Phone Number"  
 android:inputType="phone"/>  
  
 <EditText  
 android:id="@+id/editTextMessage"  
 android:layout\_below="@+id/editTextPhoneNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:hint="Message"/>  
  
 <Button  
 android:id="@+id/buttonSend"  
 android:layout\_below="@+id/editTextMessage"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:text="Send SMS"/>  
</RelativeLayout>

package com.example.sms\_manager\_intent;  
  
// MainActivity.java  
import android.Manifest;  
import android.annotation.SuppressLint;  
import android.content.BroadcastReceiver;  
import android.content.Context;  
import android.content.Intent;  
import android.content.IntentFilter;  
import android.content.pm.PackageManager;  
import android.os.Build;  
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;  
  
public class MainActivity extends AppCompatActivity {  
  
 private static final int *PERMISSION\_REQUEST\_CODE* = 1;  
  
 private EditText phoneNumberEditText;  
 private EditText messageEditText;  
 private Button sendButton;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 phoneNumberEditText = findViewById(R.id.*editTextPhoneNumber*);  
 messageEditText = findViewById(R.id.*editTextMessage*);  
 sendButton = findViewById(R.id.*buttonSend*);  
  
 sendButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 sendSMS();  
 }  
 });  
  
 // Register BroadcastReceiver for incoming SMS  
 registerReceiver(new SmsReceiver(), new IntentFilter("android.provider.Telephony.SMS\_RECEIVED"));  
  
 // Request SMS permission at runtime for Android 6.0 and above  
 if (Build.VERSION.*SDK\_INT* >= Build.VERSION\_CODES.*M*) {  
 if (checkSelfPermission(Manifest.permission.*SEND\_SMS*) != PackageManager.*PERMISSION\_GRANTED*) {  
 requestPermissions(new String[]{Manifest.permission.*SEND\_SMS*}, *PERMISSION\_REQUEST\_CODE*);  
 }  
 }  
 }  
  
 // Method to send SMS  
 private void sendSMS() {  
 String phoneNumber = phoneNumberEditText.getText().toString();  
 String message = messageEditText.getText().toString();  
  
 // Use SmsManager to send SMS  
 SmsManager smsManager = SmsManager.*getDefault*();  
 smsManager.sendTextMessage(phoneNumber, null, message, null, null);  
  
 Toast.*makeText*(this, "Message Sent", Toast.*LENGTH\_SHORT*).show();  
 }  
  
 // BroadcastReceiver to receive incoming SMS  
 public class SmsReceiver extends BroadcastReceiver {  
 @Override  
 public void onReceive(Context context, Intent intent) {  
 // Retrieve SMS message  
 // Note: This is a basic example, and in a real application, you should parse the SMS content appropriately.  
 String sender = intent.getStringExtra("address");  
 String messageBody = intent.getStringExtra("body");  
  
 Toast.*makeText*(context, "Received SMS from " + sender + ": " + messageBody, Toast.*LENGTH\_LONG*).show();  
 }  
 }  
  
 // Handle permission request result  
 @SuppressLint("MissingSuperCall")  
 @Override  
 public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull int[] grantResults) {  
 if (requestCode == *PERMISSION\_REQUEST\_CODE*) {  
 if (grantResults.length > 0 && grantResults[0] == PackageManager.*PERMISSION\_GRANTED*) {  
 // Permission granted  
 Toast.*makeText*(this, "SMS permission granted", Toast.*LENGTH\_SHORT*).show();  
 } else {  
 // Permission denied  
 Toast.*makeText*(this, "SMS permission denied", Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
 }  
}

Slip4-> B) factorial intent

<activity android:name=".FactorialActivity" />

<!-- activity\_main.xml -->  
<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/editTextNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerInParent="true"  
 android:hint="Enter a positive number"  
 android:inputType="numberDecimal"  
 android:layout\_margin="16dp"/>  
  
 <Button  
 android:id="@+id/buttonCalculate"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextNumber"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="16dp"  
 android:text="Calculate Factorial"/>  
</RelativeLayout>

package com.example.factorial\_intent;  
  
// MainActivity.java  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 private EditText editTextNumber;  
 private Button buttonCalculate;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 editTextNumber = findViewById(R.id.*editTextNumber*);  
 buttonCalculate = findViewById(R.id.*buttonCalculate*);  
  
 buttonCalculate.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 calculateFactorial();  
 }  
 });  
 }  
  
 private void calculateFactorial() {  
 String numberString = editTextNumber.getText().toString();  
  
 if (!numberString.isEmpty()) {  
 int number = Integer.*parseInt*(numberString);  
  
 if (number >= 0) {  
 // If the number is non-negative, launch the FactorialActivity  
 Intent intent = new Intent(MainActivity.this, FactorialActivity.class);  
 intent.putExtra("number", number);  
 startActivity(intent);  
 } else {  
 editTextNumber.setError("Please enter a non-negative number");  
 }  
 } else {  
 editTextNumber.setError("Please enter a number");  
 }  
 }  
}

package com.example.factorial\_intent;  
  
// FactorialActivity.java  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class FactorialActivity extends AppCompatActivity {  
  
 private TextView textViewResult;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_factorial*);  
  
 textViewResult = findViewById(R.id.*textViewResult*);  
  
 // Get the number from the intent  
 int number = getIntent().getIntExtra("number", 0);  
  
 // Calculate the factorial  
 long factorial = calculateFactorial(number);  
  
 // Display the result  
 textViewResult.setText("Factorial of " + number + " is " + factorial);  
 }  
  
 private long calculateFactorial(int n) {  
 if (n == 0 || n == 1) {  
 return 1;  
 } else {  
 return n \* calculateFactorial(n - 1);  
 }  
 }  
}

<!-- activity\_factorial.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TextView  
 android:id="@+id/textViewResult"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerInParent="true"  
 android:textSize="18sp"/>  
</RelativeLayout>

Slip4-> Q2 Car Database

<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE" />  
<uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE" />

<!-- activity\_main.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <TextView  
 android:id="@+id/resultTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerInParent="true"  
 android:textSize="18sp"/>  
</RelativeLayout>

package com.example.car\_db;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.os.Bundle;  
  
// MainActivity.java  
import android.content.ContentValues;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
import java.util.ArrayList;  
import java.util.List;  
  
// MainActivity.java  
import android.content.ContentValues;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.os.Bundle;  
import android.widget.TextView;  
import androidx.appcompat.app.AppCompatActivity;  
import java.util.ArrayList;  
import java.util.List;  
  
public class MainActivity extends AppCompatActivity {  
  
 private TextView resultTextView;  
 private CarDatabaseHelper dbHelper;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 resultTextView = findViewById(R.id.*resultTextView*);  
 dbHelper = new CarDatabaseHelper(this);  
  
 // Perform operations  
 updateCarDetails();  
 displayAllRecords();  
 }  
  
 private void updateCarDetails() {  
 // Update the car details whose colour is blue  
 SQLiteDatabase db = dbHelper.getWritableDatabase();  
  
 ContentValues values = new ContentValues();  
 values.put(CarDatabaseHelper.*COLUMN\_MODEL*, "New Model"); // You can update other columns as well  
  
 int rowsAffected = db.update(  
 CarDatabaseHelper.*TABLE\_CAR*,  
 values,  
 CarDatabaseHelper.*COLUMN\_COLOUR* + "=?",  
 new String[]{"blue"});  
  
 db.close();  
  
 resultTextView.append("\n\nUpdated " + rowsAffected + " car details with blue colour.");  
 }  
  
 private void displayAllRecords() {  
 // Display all records  
 SQLiteDatabase db = dbHelper.getReadableDatabase();  
  
 String[] projection = {  
 CarDatabaseHelper.*COLUMN\_CAR\_NO*,  
 CarDatabaseHelper.*COLUMN\_NAME*,  
 CarDatabaseHelper.*COLUMN\_MODEL*,  
 CarDatabaseHelper.*COLUMN\_COLOUR* };  
  
 Cursor cursor = db.query(  
 CarDatabaseHelper.*TABLE\_CAR*,  
 projection,  
 null,  
 null,  
 null,  
 null,  
 null);  
  
 List<Car> carList = new ArrayList<>();  
  
 while (cursor.moveToNext()) {  
 @SuppressLint("Range") int carNo = cursor.getInt(cursor.getColumnIndex(CarDatabaseHelper.*COLUMN\_CAR\_NO*));  
 @SuppressLint("Range") String name = cursor.getString(cursor.getColumnIndex(CarDatabaseHelper.*COLUMN\_NAME*));  
 @SuppressLint("Range") String model = cursor.getString(cursor.getColumnIndex(CarDatabaseHelper.*COLUMN\_MODEL*));  
 @SuppressLint("Range") String colour = cursor.getString(cursor.getColumnIndex(CarDatabaseHelper.*COLUMN\_COLOUR*));  
  
 Car car = new Car(carNo, name, model, colour);  
 carList.add(car);  
 }  
  
 cursor.close();  
 db.close();  
  
 // Display the results  
 resultTextView.append("\n\nAll Car Records:\n");  
  
 for (Car car : carList) {  
 resultTextView.append(  
 "Car No: " + car.getCarNo() +  
 ", Name: " + car.getName() +  
 ", Model: " + car.getModel() +  
 ", Colour: " + car.getColour() + "\n");  
 }  
 }  
}

package com.example.car\_db;  
  
// Car.java  
public class Car {  
 private int carNo;  
 private String name;  
 private String model;  
 private String colour;  
  
 public Car(int carNo, String name, String model, String colour) {  
 this.carNo = carNo;  
 this.name = name;  
 this.model = model;  
 this.colour = colour;  
 }  
  
 public int getCarNo() {  
 return carNo;  
 }  
  
 public String getName() {  
 return name;  
 }  
  
 public String getModel() {  
 return model;  
 }  
  
 public String getColour() {  
 return colour;  
 }  
}

package com.example.car\_db;  
  
// CarDatabaseHelper.java  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
  
public class CarDatabaseHelper extends SQLiteOpenHelper {  
  
 private static final String *DATABASE\_NAME* = "car\_database";  
 private static final int *DATABASE\_VERSION* = 1;  
  
 public static final String *TABLE\_CAR* = "car";  
 public static final String *COLUMN\_CAR\_NO* = "carno";  
 public static final String *COLUMN\_NAME* = "name";  
 public static final String *COLUMN\_MODEL* = "model";  
 public static final String *COLUMN\_COLOUR* = "colour";  
  
 private static final String *CREATE\_TABLE\_CAR* =  
 "CREATE TABLE " + *TABLE\_CAR* + "(" +  
 *COLUMN\_CAR\_NO* + " INTEGER PRIMARY KEY," +  
 *COLUMN\_NAME* + " TEXT," +  
 *COLUMN\_MODEL* + " TEXT," +  
 *COLUMN\_COLOUR* + " TEXT)";  
  
 public CarDatabaseHelper(Context context) {  
 super(context, *DATABASE\_NAME*, null, *DATABASE\_VERSION*);  
 }  
  
 @Override  
 public void onCreate(SQLiteDatabase db) {  
 db.execSQL(*CREATE\_TABLE\_CAR*);  
 // Insert some existing records  
 insertInitialData(db);  
 }  
  
 @Override  
 public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {  
 // Implement if needed when database schema changes.  
 }  
  
 private void insertInitialData(SQLiteDatabase db) {  
 ContentValues values1 = new ContentValues();  
 values1.put(*COLUMN\_NAME*, "Car1");  
 values1.put(*COLUMN\_MODEL*, "Model1");  
 values1.put(*COLUMN\_COLOUR*, "blue");  
 db.insert(*TABLE\_CAR*, null, values1);  
  
 ContentValues values2 = new ContentValues();  
 values2.put(*COLUMN\_NAME*, "Car2");  
 values2.put(*COLUMN\_MODEL*, "Model2");  
 values2.put(*COLUMN\_COLOUR*, "blue");  
 db.insert(*TABLE\_CAR*, null, values2);  
  
 ContentValues values3 = new ContentValues();  
 values3.put(*COLUMN\_NAME*, "Car3");  
 values3.put(*COLUMN\_MODEL*, "Model3");  
 values3.put(*COLUMN\_COLOUR*, "Black");  
 db.insert(*TABLE\_CAR*, null, values3);  
 // Add more records as needed  
 }  
}

slip6 -> Q2 onclick listview

<!-- activity\_main.xml -->  
<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">  
  
 <ListView  
 android:id="@+id/listView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"/>  
</RelativeLayout>

package com.example.onclick\_listview;  
  
// MainActivity.java  
import android.os.Bundle;  
import android.view.View;  
import android.widget.AdapterView;  
import android.widget.ArrayAdapter;  
import android.widget.ListView;  
import android.widget.Toast;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MainActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 // Sample data for the ListView  
 String[] data = {"Item 1", "Item 2", "Item 3", "Item 4", "Item 5"};  
  
 // Create an ArrayAdapter to populate the ListView  
 ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.*simple\_list\_item\_1*, data);  
  
 // Get the ListView from the layout  
 ListView listView = findViewById(R.id.*listView*);  
  
 // Set the adapter for the ListView  
 listView.setAdapter(adapter);  
  
 // Set a click listener for the items in the ListView  
 listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {  
 @Override  
 public void onItemClick(AdapterView<?> parent, View view, int position, long id) {  
 // Get the selected item from the adapter  
 String selectedItem = (String) parent.getItemAtPosition(position);  
  
 // Display a Toast with the selected item  
 Toast.*makeText*(MainActivity.this, "Selected: " + selectedItem, Toast.*LENGTH\_SHORT*).show();  
 }  
 });  
 }  
}

slip7 -> Q1

<service android:name=".AudioService" />

<uses-permission android:name="android.permission.FOREGROUND\_SERVICE" />

package com.example.audio\_bgm;  
  
// MainActivity.java  
import android.content.Intent;  
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*);  
  
 // Start the AudioService when the main activity is created  
 startService(new Intent(this, AudioService.class));  
 }  
  
 public void openOtherActivity(View view) {  
 // Example button click to open another activity  
 Intent intent = new Intent(this, OtherActivity.class);  
 startActivity(intent);  
 }  
  
 @Override  
 protected void onDestroy() {  
 super.onDestroy();  
  
 // Stop the AudioService when the main activity is destroyed  
 stopService(new Intent(this, AudioService.class));  
 }  
}

package com.example.audio\_bgm;  
  
// OtherActivity.java  
import android.os.Bundle;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class OtherActivity extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_other*);  
 }  
}

package com.example.audio\_bgm;  
  
// AudioService.java  
import android.app.Service;  
import android.content.Intent;  
import android.media.MediaPlayer;  
import android.os.IBinder;  
import androidx.annotation.Nullable;  
  
public class AudioService extends Service {  
  
 private MediaPlayer mediaPlayer;  
  
 @Override  
 public void onCreate() {  
 super.onCreate();  
  
 // Initialize and start playing the audio  
 mediaPlayer = MediaPlayer.*create*(this, R.raw.*sample*);  
 mediaPlayer.setLooping(true); // Loop the audio  
 mediaPlayer.start();  
 }  
  
 @Override  
 public int onStartCommand(Intent intent, int flags, int startId) {  
 return *START\_STICKY*;  
 }  
  
 @Override  
 public void onDestroy() {  
 super.onDestroy();  
  
 // Stop and release the MediaPlayer when the service is destroyed  
 if (mediaPlayer != null) {  
 mediaPlayer.stop();  
 mediaPlayer.release();  
 }  
 }  
  
 @Nullable  
 @Override  
 public IBinder onBind(Intent intent) {  
 return null;  
 }  
}

slip 11 Q2 Email with attachment

<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE" />

package com.example.email\_attachment;  
  
// MainActivity.java  
import android.content.Intent;  
import android.net.Uri;  
import android.os.Bundle;  
import android.os.Environment;  
import android.view.View;  
import androidx.appcompat.app.AppCompatActivity;  
import java.io.File;  
  
public class MainActivity extends AppCompatActivity {  
  
 private static final String *EMAIL\_SUBJECT* = "Email Subject";  
 private static final String *EMAIL\_BODY* = "Hello,\n\nPlease find the attached file.";  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 }  
  
 public void sendEmail(View view) {  
 // File to be attached (replace "your\_file\_name.txt" with your actual file name)  
 File attachmentFile = new File(Environment.*getExternalStorageDirectory*(), "resume.pdf");  
  
 // Create the email Intent  
 Intent emailIntent = new Intent(Intent.*ACTION\_SEND*);  
 emailIntent.setType("text/plain");  
  
 // Set the recipient email address (replace "recipient@example.com" with the actual email address)  
 emailIntent.putExtra(Intent.*EXTRA\_EMAIL*, new String[]{"gandasp18@gamil.com"});  
  
 // Set the email subject and body  
 emailIntent.putExtra(Intent.*EXTRA\_SUBJECT*, *EMAIL\_SUBJECT*);  
 emailIntent.putExtra(Intent.*EXTRA\_TEXT*, *EMAIL\_BODY*);  
  
 // Attach the file  
 Uri fileUri = Uri.*fromFile*(attachmentFile);  
 emailIntent.putExtra(Intent.*EXTRA\_STREAM*, fileUri);  
  
 // Start the email client  
 startActivity(Intent.*createChooser*(emailIntent, "Send Email"));  
 }  
}

<!-- activity\_main.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp">  
  
 <Button  
 android:id="@+id/btnSendEmail"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Send Email"  
 android:onClick="sendEmail"  
 android:layout\_centerInParent="true"/>  
</RelativeLayout>

Slip13-> Q2

<uses-permission android:name="android.permission.READ\_CONTACTS" />

<!-- activity\_main.xml -->  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp">  
  
 <Button  
 android:id="@+id/btnSendSMS"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Send SMS"  
 android:onClick="sendSMS"  
 android:layout\_centerInParent="true"/>  
</RelativeLayout>

package com.example.sms\_img;  
  
// MainActivity.java  
import android.Manifest;  
import android.content.Intent;  
import android.net.Uri;  
import android.os.Bundle;  
import android.provider.ContactsContract;  
import android.provider.MediaStore;  
import android.view.View;  
import android.widget.Toast;  
  
import androidx.activity.result.ActivityResult;  
import androidx.activity.result.ActivityResultLauncher;  
import androidx.activity.result.contract.ActivityResultContracts;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.app.ActivityCompat;  
  
public class MainActivity extends AppCompatActivity {  
  
 private ActivityResultLauncher<Intent> pickContactLauncher;  
 private ActivityResultLauncher<String> requestPermissionLauncher;  
 private ActivityResultLauncher<Intent> pickImageLauncher;  
  
 private static final int *PICK\_CONTACT\_REQUEST* = 1;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 // Initialize ActivityResultLaunchers  
 pickContactLauncher = registerForActivityResult(  
 new ActivityResultContracts.StartActivityForResult(),  
 result -> {  
 if (result.getResultCode() == *RESULT\_OK*) {  
 pickImage();  
 }  
 }  
 );  
  
 requestPermissionLauncher = registerForActivityResult(  
 new ActivityResultContracts.RequestPermission(),  
 isGranted -> {  
 if (isGranted) {  
 pickContact();  
 } else {  
 // Handle permission denied  
 }  
 }  
 );  
  
 pickImageLauncher = registerForActivityResult(  
 new ActivityResultContracts.StartActivityForResult(),  
 result -> {  
 if (result.getResultCode() == *RESULT\_OK*) {  
 composeAndSendSMS(result.getData().getData());  
 }  
 }  
 );  
  
 // Request READ\_CONTACTS permission  
 requestPermissionLauncher.launch(Manifest.permission.*READ\_CONTACTS*);  
 }  
  
 public void sendSMS(View view) {  
 // Select a contact  
 pickContact();  
 }  
  
 private void pickContact() {  
 Intent pickContactIntent = new Intent(Intent.*ACTION\_PICK*, ContactsContract.Contacts.*CONTENT\_URI*);  
 pickContactLauncher.launch(pickContactIntent);  
 }  
  
 private void pickImage() {  
 Intent pickImageIntent = new Intent(Intent.*ACTION\_PICK*, MediaStore.Images.Media.*EXTERNAL\_CONTENT\_URI*);  
 pickImageLauncher.launch(pickImageIntent);  
 }  
  
 private void composeAndSendSMS(Uri imageUri) {  
 // Compose the SMS  
 String smsBody = "Check out this image!";  
 Intent smsIntent = new Intent(Intent.*ACTION\_SENDTO*, Uri.*parse*("smsto:"));  
 smsIntent.putExtra("sms\_body", smsBody);  
  
 // Attach the image  
 smsIntent.putExtra(Intent.*EXTRA\_STREAM*, imageUri);  
 smsIntent.setType("image/\*");  
  
 // Check if there is an activity available to handle the intent  
 if (smsIntent.resolveActivity(getPackageManager()) != null) {  
 // Start the messaging app  
 startActivity(smsIntent);  
 } else {  
 // Handle the case where there is no activity available  
 // (e.g., show a message to the user)  
 Toast.*makeText*(this, "No messaging app available", Toast.*LENGTH\_SHORT*).show();  
 }  
 }  
  
}

slip14 -> Q1 A)Orientation Portait

android:configChanges="orientation|screenSize"

package com.example.orientation;  
  
// MainActivity.java  
import android.content.res.Configuration;  
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*);  
 }  
  
 @Override  
 public void onConfigurationChanged(Configuration newConfig) {  
 super.onConfigurationChanged(newConfig);  
  
 // Handle configuration changes if needed  
 // Example: Check if the orientation is landscape or portrait  
 if (newConfig.orientation == Configuration.*ORIENTATION\_LANDSCAPE*) {  
 // Do something when in landscape mode  
 } else if (newConfig.orientation == Configuration.*ORIENTATION\_PORTRAIT*) {  
 // Do something when in portrait mode  
 }  
 }  
}

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Portrait Layout"  
 android:textSize="24sp"  
 android:layout\_centerInParent="true"/>  
</RelativeLayout>

AcceptRejectSlip9

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.EditText;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class AcceptRejectSlip9 extends AppCompatActivity {  
 private EditText editTextNumber1;  
 private EditText editTextNumber2;  
 private TextView resultTextView;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.accept\_reject\_slip9);  
  
 editTextNumber1 = findViewById(R.id.editTextNumber1);  
 editTextNumber2 = findViewById(R.id.editTextNumber2);  
 resultTextView = findViewById(R.id.resultTextView);  
  
 }  
 public void onSubmitClick(View view){  
 String input1 = editTextNumber1.getText().toString();  
 String input2 = editTextNumber2.getText().toString();  
  
 if(!input1.isEmpty()&&!input2.isEmpty()){  
 double number1 = Double.parseDouble(input1);  
 double number2 = Double.parseDouble(input2);  
  
 if(number1>10 && number2>10){  
 resultTextView.setText("Both Numbers are greater than 10 enter new numbers ");  
 }else{  
 resultTextView.setText("Number1"+number1+"\n Number2"+number2);  
 }  
 }else{  
 resultTextView.setText("PleaseEnter both numbers");  
 }  
 }  
}

<?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=".AcceptRejectSlip9">  
  
 <EditText  
 android:id="@+id/editTextNumber1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter number 1"  
 android:inputType="numberDecimal"  
 android:layout\_marginTop="16dp"/>  
  
 <EditText  
 android:id="@+id/editTextNumber2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter number 2"  
 android:inputType="numberDecimal"  
 android:layout\_below="@id/editTextNumber1"  
 android:layout\_marginTop="16dp"/>  
  
 <Button  
 android:id="@+id/submitButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Submit"  
 android:layout\_below="@id/editTextNumber2"  
 android:layout\_marginTop="16dp"  
 android:onClick="onSubmitClick"/>  
  
 <TextView  
 android:id="@+id/resultTextView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/submitButton"  
 android:layout\_marginTop="16dp"/>  
</RelativeLayout>

Activity Life cycle

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.util.Log;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class ActivityLifecycle extends AppCompatActivity {  
 private static final String *TAG* = "ActivityLifecycle";  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
  
 Log.d(*TAG*, "onCreate");  
 }  
  
 @Override  
 protected void onStart() {  
 super.onStart();  
 Log.d(*TAG*, "onStart");  
 }  
  
 @Override  
 protected void onResume() {  
 super.onResume();  
 Log.d(*TAG*, "onResume");  
 }  
  
 @Override  
 protected void onPause() {  
 super.onPause();  
 Log.d(*TAG*, "onPause");  
 }  
  
 @Override  
 protected void onStop() {  
 super.onStop();  
 Log.d(*TAG*, "onStop");  
 }  
  
 @Override  
 protected void onDestroy() {  
 super.onDestroy();  
 Log.d(*TAG*, "onDestroy");  
 }  
  
 @Override  
 protected void onRestart() {  
 super.onRestart();  
 Log.d(*TAG*, "onRestart");  
 }  
}

factorial with alert

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AlertDialog;  
import androidx.appcompat.app.AppCompatActivity;  
  
public class AlertSlip7 extends AppCompatActivity {  
 private EditText editTextNumber;  
 private TextView textViewResult;  
  
 private Button buttonCalculateFactorial;  
 @Override  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.alert\_slip7);  
  
 editTextNumber = findViewById(R.id.editTextNumber);  
 textViewResult = findViewById(R.id.textViewResult);  
 buttonCalculateFactorial = findViewById(R.id.buttonCalculateFactorial);  
  
 buttonCalculateFactorial.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 calculateFactorial();  
 }  
 });  
 }  
 protected void calculateFactorial(){  
 String input = editTextNumber.getText().toString();  
 if(!input.isEmpty()){  
 int number = Integer.parseInt(input);  
 long factorial = 1;  
 for(int i=1;i<=number;i++){  
 factorial \*= 1;  
 }  
 String resultMessage = "Factorial of"+number+"is"+factorial;  
 showAlert("Factorial Result",resultMessage);  
 }else{  
 showAlert("Error","Please enter a number");  
 }  
 }  
 private void showAlert(String title, String message){  
 AlertDialog.Builder builder = new AlertDialog.Builder(this);  
 builder.setTitle(title).setMessage(message).setPositiveButton("OK",null).show();  
 }  
}

<!-- res/layout/activity\_main.xml -->  
<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=".AlertSlip7">  
  
 <EditText  
 android:id="@+id/editTextNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter a number"  
 android:inputType="number"/>  
  
 <Button  
 android:id="@+id/buttonCalculateFactorial"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Calculate Factorial"  
 android:layout\_below="@id/editTextNumber"  
 android:layout\_marginTop="16dp"  
 android:onClick="calculateFactorial"/>  
  
 <TextView  
 android:id="@+id/textViewResult"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/buttonCalculateFactorial"  
 android:layout\_marginTop="16dp"  
 android:text=""  
 android:textSize="18sp"  
 android:layout\_centerHorizontal="true"/>  
</RelativeLayout>

Calculator

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class CalculatorSlip10 extends AppCompatActivity {  
  
 private TextView display;  
 private String currentInput = "";  
 private double operand1 = 0;  
 private String operator = "";  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.calculator\_slip10\_activity3);  
  
 display = findViewById(R.id.display);  
  
 setDigitButtonClickListeners();  
  
 setOperatorButtonClickListeners();  
  
 setEqualsButtonClickListener();  
 }  
  
 private void setDigitButtonClickListeners() {  
 int[] digitButtonIds = {R.id.button1, R.id.button2, R.id.button3, R.id.button4,  
 R.id.button5, R.id.button6, R.id.button7, R.id.button8,  
 R.id.button9,R.id.button0};  
  
 for (int digitButtonId : digitButtonIds) {  
 Button digitButton = findViewById(digitButtonId);  
 digitButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Button button = (Button) v;  
 currentInput += button.getText().toString();  
 display.setText(currentInput);  
 }  
 });  
 }  
 }  
  
 private void setOperatorButtonClickListeners() {  
 int[] operatorButtonIds = {R.id.buttonAdd, R.id.buttonMultiply, R.id.buttonMultiply, R.id.buttonDivide};  
  
 for (int operatorButtonId : operatorButtonIds) {  
 Button operatorButton = findViewById(operatorButtonId);  
 operatorButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if (!currentInput.isEmpty()) {  
 operand1 = Double.parseDouble(currentInput);  
 operator = ((Button) v).getText().toString();  
 currentInput = "";  
 }  
 }  
 });  
 }  
 }  
  
 private void setEqualsButtonClickListener() {  
 Button equalsButton = findViewById(R.id.buttonEquals);  
 equalsButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if (!currentInput.isEmpty() && !operator.isEmpty()) {  
 double operand2 = Double.parseDouble(currentInput);  
 double result = performOperation(operand1, operand2, operator);  
 display.setText(String.valueOf(result));  
 currentInput = "";  
 operator = "";  
 }  
 }  
 });  
 }  
  
 private double performOperation(double operand1, double operand2, String operator) {  
 switch (operator) {  
 case "+":  
 return operand1 + operand2;  
 case "-":  
 return operand1 - operand2;  
 case "×":  
 return operand1 \* operand2;  
 case "÷":  
 if (operand2 != 0) {  
 return operand1 / operand2;  
 } else {  
 return Double.NaN;  
 }  
 default:  
 return Double.NaN;  
 }  
 }  
}

<?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=".CalculatorSlip10">  
 <TextView  
 android:id="@+id/display"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:textSize="24sp"  
 android:text="CALCULATOR" />  
 <EditText  
 android:id="@+id/OutputEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="20dp"  
 android:textSize="24sp"  
 android:hint="0"/>  
  
 <GridLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/display"  
 android:layout\_marginTop="37dp"  
 android:columnCount="4">  
  
 <!-- Buttons for digits -->  
 <Button  
 android:id="@+id/button1"  
 android:text="1" />  
  
 <Button  
 android:id="@+id/button2"  
 android:text="2" />  
  
 <Button  
 android:id="@+id/button3"  
 android:text="3" />  
  
 <Button  
 android:id="@+id/button4"  
 android:text="4" />  
  
 <Button  
 android:id="@+id/button5"  
 android:text="5" />  
  
 <Button  
 android:id="@+id/button6"  
 android:text="6" />  
  
 <Button  
 android:id="@+id/button7"  
 android:text="7" />  
  
 <Button  
 android:id="@+id/button8"  
 android:text="8" />  
  
 <Button  
 android:id="@+id/button9"  
 android:text="9" />  
 <Button  
 android:id="@+id/button0"  
 android:text="0" />  
 <Button  
 android:id="@+id/buttonClear"  
 android:text="C" />  
 <Button  
 android:id="@+id/buttonPoint"  
 android:text="." />  
  
 <Button  
 android:id="@+id/buttonAdd"  
 android:text="+" />  
  
 <Button  
 android:id="@+id/Subtract"  
 android:text="-" />  
  
 <Button  
 android:id="@+id/buttonMultiply"  
 android:text="\*" />  
  
 <Button  
 android:id="@+id/buttonDivide"  
 android:text="/" />  
  
 <Button  
 android:id="@+id/buttonEquals"  
 android:text="=" />  
  
 </GridLayout>  
</RelativeLayout>

Date and time piker

package com.example.myapplication;  
  
import android.app.DatePickerDialog;  
import android.app.TimePickerDialog;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.DatePicker;  
import android.widget.TextView;  
import android.widget.TimePicker;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import java.util.Calendar;  
  
public class DateTimePickerSlip8 extends AppCompatActivity {  
 private TextView textViewResult;  
 private Button buttonPickDateTime;  
 @Override  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
  
 textViewResult = findViewById(R.id.resultTextView);  
 buttonPickDateTime = findViewById(R.id.buttonPickDateTime);  
  
 buttonPickDateTime.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 showDateTimePicker();  
 }  
 });  
 }  
 private void showDateTimePicker(){  
 Calendar calendar = Calendar.getInstance();  
 int year = calendar.get(Calendar.YEAR);  
 int month = calendar.get(Calendar.MONTH);  
 int day = calendar.get(Calendar.DAY\_OF\_MONTH);  
 int hour = calendar.get(Calendar.HOUR\_OF\_DAY);  
 int minute = calendar.get(Calendar.MINUTE);  
  
 DatePickerDialog datePickerDialog = new DatePickerDialog(this,  
 new DatePickerDialog.OnDateSetListener() {  
 @Override  
 public void onDateSet(DatePicker view, int year, int month, int dayOfMonth) {  
 calendar.set(Calendar.YEAR, year);  
 calendar.set(Calendar.MONTH, month);  
 calendar.set(Calendar.DAY\_OF\_MONTH, dayOfMonth);  
 TimePickerDialog timePickerDialog = new TimePickerDialog(DateTimePickerSlip8.this,  
 new TimePickerDialog.OnTimeSetListener() {  
 @Override  
 public void onTimeSet(TimePicker view, int hourOfDay, int minute) {  
 calendar.set(Calendar.HOUR\_OF\_DAY, hourOfDay);  
 calendar.set(Calendar.MINUTE, minute);  
 updateResultTextView(calendar);  
  
 }  
 },hour,  
 minute,  
 true );  
 }  
 },  
 year,  
 month,  
 day);  
 datePickerDialog.show();  
 }  
 private void updateResultTextView(Calendar calendar) {  
 String result = String.format(  
 "Selected Date and Time:\n%s",  
 android.text.format.DateFormat.format("MMM dd, yyyy hh:mm a", calendar)  
 );  
 textViewResult.setText(result);  
 }  
}

<?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=".DateTimePickerSlip8">  
  
 <Button  
 android:id="@+id/buttonPickDateTime"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_centerInParent="true"  
 android:text="Pick Date and Time" />  
  
 <TextView  
 android:id="@+id/textViewResult"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/buttonPickDateTime"  
 android:layout\_marginTop="16dp"  
 android:text=""  
 android:textSize="18sp"  
 android:layout\_centerHorizontal="true"/>  
</RelativeLayout>

Friend viewlist

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.widget.ListView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import java.util.ArrayList;  
  
public class ViewFriendSlip5 extends AppCompatActivity {  
 @Override  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.friend\_view\_slip\_5);  
  
 ArrayList<Friend> friendsList = new ArrayList<>();  
 friendsList.add(new Friend("Friend1",R.drawable.lightOff));  
 friendsList.add(new Friend("Friend2",R.drawable.lightOff));  
 friendsList.add(new Friend("Friend3",R.drawable.lightOff));  
  
 FriendAdapter friendAdapter = new FriendAdapter(this,friendsList);  
 ListView listViewFriends = findViewById(R.id.listViewFriends);  
 listViewFriends.setAdapter(friendAdapter);  
 }  
}

<?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=".ViewFriendSlip5">  
  
 <ListView  
 android:id="@+id/listViewFriends"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent" />  
</RelativeLayout>

Login and registration

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 static final String *VALID\_USERNAME* = "mca";  
 private static final String *VALID\_PASSWORD* = "android";  
  
 private EditText usernameEditText;  
 private EditText passwordEditText;  
 private Button loginButton;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
  
 usernameEditText = findViewById(R.id.usernameEditText);  
 passwordEditText = findViewById(R.id.passwordEditText);  
 loginButton = findViewById(R.id.loginButton);  
  
 loginButton.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String enteredUsername = usernameEditText.getText().toString();  
 String enteredPassword = passwordEditText.getText().toString();  
  
 if (enteredUsername.equals(*VALID\_USERNAME*) && enteredPassword.equals(*VALID\_PASSWORD*)) {  
 showToast("Login successful");  
 } else {  
 showToast("Invalid username or password");  
 }  
 }  
 });  
 }  
  
 private void showToast(String message) {  
 Toast.makeText(this, message, Toast.LENGTH\_SHORT).show();  
 }  
}

<?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/usernameEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="50dp"  
 android:hint="Username"/>  
  
 <EditText  
 android:id="@+id/passwordEditText"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/usernameEditText"  
 android:layout\_marginTop="20dp"  
 android:inputType="textPassword"  
 android:hint="Password"/>  
  
 <Button  
 android:id="@+id/loginButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/passwordEditText"  
 android:layout\_marginTop="20dp"  
 android:text="Login"/>  
</RelativeLayout>

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 MainActivity2 extends AppCompatActivity {  
 private Button btnRegister;  
 private EditText editTextName;  
 private EditText editTextEmail;  
 private EditText editTextPassword;  
 private EditText editTextAge;  
 private EditText editTextMobile;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main2);  
  
 btnRegister = findViewById(R.id.btnRegister);  
 btnRegister.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 validateForm();  
 }  
 });  
 }  
 private void validateForm(){  
  
 editTextName = findViewById(R.id.editTextName);  
 editTextEmail = findViewById(R.id.editTextEmail);  
 editTextPassword = findViewById(R.id.editTextPassword);  
 editTextAge = findViewById(R.id.editTextAge);  
 editTextMobile = findViewById(R.id.editTextMobile);  
  
 String name = editTextName.getText().toString().trim();  
 String email = editTextEmail.getText().toString().trim();  
 String password = editTextPassword.getText().toString().trim();  
 String age = editTextAge.getText().toString().trim();  
 String mobileNo = editTextMobile.getText().toString().trim();  
  
 if(name.isEmpty()||email.isEmpty()||password.isEmpty()||age.isEmpty()||mobileNo.isEmpty()) {  
 Toast.makeText(this, "All fields are required", Toast.LENGTH\_SHORT).show();  
 }  
 else{  
 Toast.makeText(this, "Successfully Registered", Toast.LENGTH\_SHORT).show();  
 }  
 }  
  
}

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:padding="16dp"  
 tools:context=".MainActivity2"  
 >  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="8dp"  
 android:text="Registration" />  
  
  
 <EditText  
 android:id="@+id/editTextName"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Name"/>  
  
 <EditText  
 android:id="@+id/editTextEmail"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextName"  
 android:layout\_marginTop="8dp"  
 android:inputType="textEmailAddress"  
 android:hint="Email"/>  
  
 <EditText  
 android:id="@+id/editTextPassword"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextEmail"  
 android:layout\_marginTop="8dp"  
 android:inputType="textPassword"  
 android:hint="Password"/>  
  
 <EditText  
 android:id="@+id/editTextAge"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextPassword"  
 android:layout\_marginTop="8dp"  
 android:inputType="number"  
 android:hint="Age"/>  
  
 <EditText  
 android:id="@+id/editTextMobile"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextAge"  
 android:layout\_marginTop="8dp"  
 android:inputType="phone"  
 android:hint="Mobile Number"/>  
  
 <Button  
 android:id="@+id/btnRegister"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/editTextMobile"  
 android:layout\_marginTop="16dp"  
 android:text="Register"/>  
  
  
</RelativeLayout>

Login layout

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".LoginActivity">  
  
 <EditText  
 android:id="@+id/editTextUsernameConstraint"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:hint="Username"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 android:layout\_marginTop="16dp"/>  
  
 <EditText  
 android:id="@+id/editTextPasswordConstraint"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPassword"  
 android:hint="Password"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@id/editTextUsernameConstraint"  
 android:layout\_marginTop="8dp"/>  
  
 <Button  
 android:id="@+id/buttonLoginConstraint"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login"  
 app:layout\_constraintTop\_toBottomOf="@id/editTextPasswordConstraint"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 android:layout\_marginTop="16dp"/>  
</androidx.constraintlayout.widget.ConstraintLayout>

Linear layout

<?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"  
 tools:context=".LoginActivity">  
  
 <EditText  
 android:id="@+id/editTextUsernameLinear"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Username"/>  
  
 <EditText  
 android:id="@+id/editTextPasswordLinear"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="textPassword"  
 android:hint="Password"/>  
  
 <Button  
 android:id="@+id/buttonLoginLinear"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login"/>  
</LinearLayout>

Login layout table

<?xml version="1.0" encoding="utf-8"?>  
<TableLayout 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:padding="16dp"  
 tools:context=".LoginActivity">  
  
 <TableRow>  
 <EditText  
 android:id="@+id/editTextUsernameTable"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:hint="Username"/>  
 </TableRow>  
  
 <TableRow>  
 <EditText  
 android:id="@+id/editTextPasswordTable"  
 android:layout\_width="0dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_weight="1"  
 android:inputType="textPassword"  
 android:hint="Password"/>  
 </TableRow>  
  
 <TableRow>  
 <Button  
 android:id="@+id/buttonLoginTable"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Login"/>  
 </TableRow>  
</TableLayout>

Multiplication

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TableLayout;  
import android.widget.TableRow;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class MultiplicationTable extends AppCompatActivity {  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.multipliction\_table\_slip3);  
  
 final EditText editTextNumber = findViewById(R.id.editTextNumber);  
 Button buttonGenerateTable = findViewById(R.id.buttonGenerateTable);  
 final TableLayout tableLayout = findViewById(R.id.tableLayout);  
  
 buttonGenerateTable.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 tableLayout.removeAllViews();  
  
 String numberString = editTextNumber.getText().toString();  
  
 if (!numberString.isEmpty()) {  
 int number = Integer.parseInt(numberString);  
  
 for (int i = 1; i <= 10; i++) {  
 TableRow tableRow = new TableRow(MultiplicationTable.this);  
  
 TextView textViewMultiplicant = new TextView(MultiplicationTable.this);  
 textViewMultiplicant.setText(String.valueOf(number));  
 textViewMultiplicant.setTextSize(18);  
 tableRow.addView(textViewMultiplicant);  
  
 TextView textViewMultiplier = new TextView(MultiplicationTable.this);  
 textViewMultiplier.setText(" x " + i + " = ");  
 textViewMultiplier.setTextSize(18);  
 tableRow.addView(textViewMultiplier);  
  
 TextView textViewResult = new TextView(MultiplicationTable.this);  
 textViewResult.setText(String.valueOf(number \* i));  
 textViewResult.setTextSize(18);  
 tableRow.addView(textViewResult);  
  
 tableLayout.addView(tableRow);  
 }  
 }  
 }  
 });  
 }  
}

<?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:padding="16dp"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/editTextNumber"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:inputType="number"  
 android:hint="Enter a number"/>  
  
 <Button  
 android:id="@+id/buttonGenerateTable"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Generate Table"  
 android:layout\_marginTop="16dp"/>  
  
 <TableLayout  
 android:id="@+id/tableLayout"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:stretchColumns="\*"  
 android:shrinkColumns="\*">  
 </TableLayout>  
</LinearLayout>

Power and average

package com.example.myapplication;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class PowerIntent1Slip6 extends AppCompatActivity {  
 private EditText editTextNumber1;  
 private EditText editTextNumber2;  
 private Button buttonCalculate;  
  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.power\_intent1\_slip6);  
  
 editTextNumber1 = findViewById(R.id.editTextNumber1);  
 editTextNumber2 = findViewById(R.id.editTextNumber2);  
 buttonCalculate = findViewById(R.id.buttonCalculate);  
  
 buttonCalculate.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View view) {  
 String input1 = editTextNumber1.getText().toString();  
 String input2 = editTextNumber2.getText().toString();  
  
 if(!input1.isEmpty()&&!input2.isEmpty()) {  
 double number1 = Double.parseDouble(input1);  
 double number2 = Double.parseDouble(input2);  
 double powerResult = Math.pow(number1,number2);  
 double averageResult = (number1+number2)/2;  
 Intent i = new Intent(PowerIntent1Slip6.this,PowerIntent2Slip6.class);  
 i.putExtra("Power Result",powerResult);  
 i.putExtra("Average Result",averageResult);  
 startActivity(i);  
 }  
 }  
 });  
  
 }  
}

<?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=".PowerIntent1Slip6">  
  
 <EditText  
 android:id="@+id/editTextNumber1"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter number 1"  
 android:inputType="numberDecimal"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginLeft="16dp"  
 android:layout\_marginRight="16dp"/>  
  
 <EditText  
 android:id="@+id/editTextNumber2"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter number 2"  
 android:inputType="numberDecimal"  
 android:layout\_below="@id/editTextNumber1"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginLeft="16dp"  
 android:layout\_marginRight="16dp"/>  
  
 <Button  
 android:id="@+id/buttonCalculate"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Calculate"  
 android:layout\_below="@id/editTextNumber2"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginLeft="16dp"  
 android:layout\_marginRight="16dp"/>  
</RelativeLayout>

package com.example.myapplication;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.TextView;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class PowerIntent2Slip6 extends AppCompatActivity {  
 private TextView textViewPower;  
 private TextView textViewAverage;  
  
 protected void onCreate(Bundle savedInstanceState){  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.power\_intent2\_slip6);  
 textViewPower = findViewById(R.id.textViewPower);  
 textViewAverage = findViewById(R.id.textViewAverage);  
  
 Intent i = getIntent();  
 double powerResult = i.getDoubleExtra("Power Result",0.0);  
 double averageResult = i.getDoubleExtra("Average Result",0.0);  
  
 textViewPower.setText("Power Result"+powerResult);  
 textViewPower.setText("Average Result"+averageResult);  
 }  
}

<?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"  
 xmlns:tools="http://schemas.android.com/tools"  
 tools:context=".PowerIntent2Slip6">  
  
 <TextView  
 android:id="@+id/textViewPower"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginLeft="16dp"  
 android:layout\_marginRight="16dp"/>  
  
 <TextView  
 android:id="@+id/textViewAverage"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/textViewPower"  
 android:layout\_marginTop="16dp"  
 android:layout\_marginLeft="16dp"  
 android:layout\_marginRight="16dp"/>  
</RelativeLayout>

Toggle bulb

package com.example.myapplication;  
  
import android.os.Bundle;  
import android.widget.CompoundButton;  
import android.widget.ImageView;  
import android.widget.ToggleButton;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
public class ToggleSlip10 extends AppCompatActivity {  
 private ToggleButton toggleButton;  
 private ImageView lightBulb;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.toggle\_slip10\_activity);  
  
 toggleButton = findViewById(R.id.toggleButton);  
 lightBulb = findViewById(R.id.lightBulb);  
  
 lightBulb.setImageResource(R.drawable.lightOff);  
 toggleButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {  
 @Override  
 public void onCheckedChanged(CompoundButton compoundButton, boolean isChecked) {  
 if(isChecked){  
 lightBulb.setImageResource(R.drawable.lightOn);  
 }else{  
 lightBulb.setImageResource(R.drawable.lightOff);  
 }  
 }  
 });  
 }  
}

<?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=".ToggleSlip10">  
  
 <ToggleButton  
 android:id="@+id/toggleButton"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:textOff="OFF"  
 android:textOn="ON" />  
  
 <ImageView  
 android:id="@+id/lightBulb"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/toggleButton"  
 android:layout\_marginTop="202dp"  
 android:src="@drawable/lightOff" />  
</RelativeLayout>

Scrolline

<?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:text="A Scroll View"  
 android:layout\_height="match\_parent"  
 android:layout\_width="wrap\_content" />  
  
 <ScrollView  
 android:id="@+id/scrollView"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent">  
  
 <LinearLayout  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:orientation="vertical"  
 android:padding="16dp">  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button1"  
 android:id="@+id/button1"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button2"  
 android:id="@+id/button2"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button3"  
 android:id="@+id/button3"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button4"  
 android:id="@+id/button4"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button5"  
 android:id="@+id/button5"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button6"  
 android:id="@+id/button6"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button7"  
 android:id="@+id/button7"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button8"  
 android:id="@+id/button8"  
 android:padding="8dp"/>  
  
 <Button  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Button9"  
 android:id="@+id/button9"  
 android:padding="8dp"/>  
  
 </LinearLayout>  
 </ScrollView>  
</RelativeLayout>

Phonecall

<uses-permission android:name="android.permission.CALL\_PHONE" />

package com.example.phonecall;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.net.Uri;  
import android.os.Bundle;  
import android.widget.Button;  
import android.widget.EditText;  
  
public class MainActivity extends AppCompatActivity {  
  
  
 // define objects for edit text and button  
 EditText edittext;  
 Button button;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.activity\_main);  
  
 // Getting instance of edittext and button  
 button = findViewById(R.id.button);  
 edittext = findViewById(R.id.editText);  
  
 // Attach set on click listener to the button for initiating intent  
 button.setOnClickListener(arg -> {  
 // getting phone number from edit text and changing it to String  
 String phone\_number = edittext.getText().toString();  
  
 // Getting instance of Intent with action as ACTION\_CALL  
 Intent phone\_intent = new Intent(Intent.*ACTION\_CALL*);  
  
 // Set data of Intent through Uri by parsing phone number  
 phone\_intent.setData(Uri.*parse*("tel:" + phone\_number));  
  
 // start Intent  
 startActivity(phone\_intent);  
 });  
 }  
}

<?xml version="1.0" encoding="utf-8"?>  
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <!-- Edit text for phone number -->  
 <EditText  
 android:id="@+id/editText"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="30dp"  
 tools:ignore="SpeakableTextPresentCheck,TextFields,TouchTargetSizeCheck"  
 android:autofillHints=""  
 />  
  
 <!-- Button to make call -->  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="115dp"  
 android:padding="5dp"  
 android:text="Make Call!!" />  
</RelativeLayout>