# Practical No: 01

Create a login application with a remember me checkbox. On successful login Store username and password if the checkbox is checked in sharedPreferences.

Activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">
    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Username"
        android:inputType="text"/>
    <EditText
        android:id="@+id/password"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/username"
        android:hint="Password"
        android:inputType="textPassword" />
    <CheckBox
        android:id="@+id/rememberMe"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/password"
        android:text="Remember Me"/>
    <Button
        android:id="@+id/loginButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/rememberMe"
        android:text="Login"/>
    <Button
        android:id="@+id/clearButton"
```

```xml
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/rememberMe"
        android:layout_marginLeft="120dp"
        android:text="Clear" />
</RelativeLayout>
```
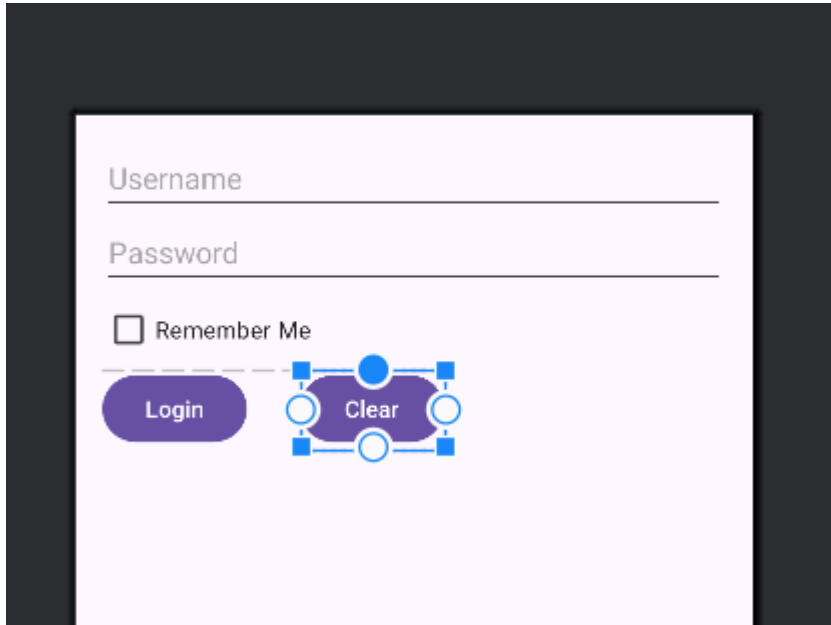

MainActivity.java:

```java
package com.example.sharedpreferences;
import android.annotation.SuppressLint;
import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    private EditText uname;
    private EditText pwd;
    private CheckBox rememberMeCheckBox;
```

```java
private Button loginButton;
private Button clearButton;
private SharedPreferences pref;
private static final String SHARED_PREFS_NAME = "LoginPrefs";
private static final String KEY_EMAIL = "username";
private static final String KEY_PASSWORD = "password";
@SuppressLint("MissingInflatedId")
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    uname = findViewById(R.id.username);
    pwd = findViewById(R.id.password);
    rememberMeCheckBox = findViewById(R.id.rememberMe);
    loginButton = findViewById(R.id.loginButton);
    clearButton = findViewById(R.id.clearButton);
    // Initialize SharedPreferences
    pref = getSharedPreferences(SHARED_PREFS_NAME,
Context.MODE_PRIVATE);
    // Check if the user is already logged in
    if (isAlreadyLoggedIn()) {
        // Redirect to the welcome screen
        startActivity(new Intent(MainActivity.this, SecondActivity.class));
        finish();
    }
    loginButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            String username = uname.getText().toString();
            String password = pwd.getText().toString();
            if (username.equals("Kratos2520") &&
password.equals("kratos123456")) {
                if (rememberMeCheckBox.isChecked()) {
                    pref.edit().putString(KEY_EMAIL, username).apply();
                    pref.edit().putString(KEY_PASSWORD, password).apply();
                }
```

```java
                Toast.makeText(getApplicationContext(), "Login Successful",
Toast.LENGTH_SHORT).show();
                startActivity(new Intent(MainActivity.this, SecondActivity.class));
                finish();
            } else {
                Toast.makeText(getApplicationContext(), "Credentials are not
valid", Toast.LENGTH_SHORT).show();
            }
        }
    });
    clearButton.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            pref.edit().clear().apply();
            uname.setText("");
            pwd.setText("");
        }
    });
    }
    private boolean isAlreadyLoggedIn() {
        return pref.contains(KEY_EMAIL) &&
pref.contains(KEY_PASSWORD);
    }
}
```

Activity_second.xml:
```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=".SecondActivity">
    <TextView
        android:id="@+id/resultView"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:text="Hey welcome to the Session."
        android:textSize="25dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.054" />
    <Button
        android:id="@+id/btnLogout"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Logout"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.169" />
</androidx.constraintlayout.widget.ConstraintLayout>
```
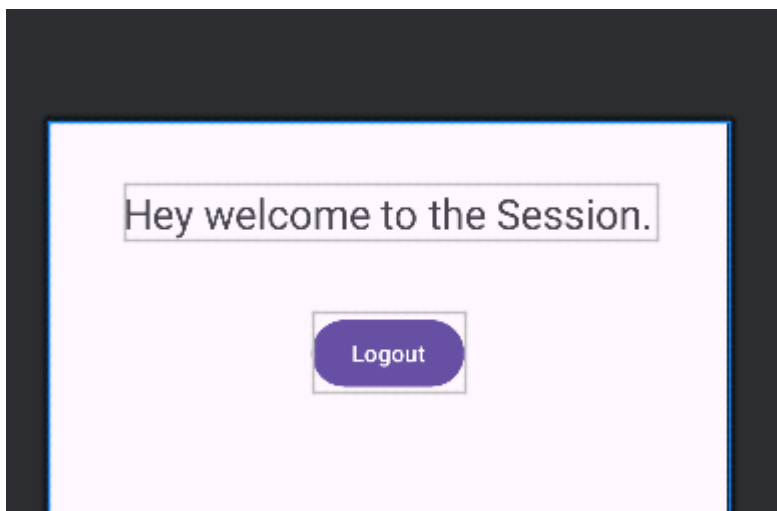

SecondActivity.java:
```java
package com.example.sharedpreferences;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
import android.annotation.SuppressLint;
import android.content.Intent;
import android.content.SharedPreferences;
```

```java
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
public class SecondActivity extends AppCompatActivity {
    private SharedPreferences prf;
    @SuppressLint("SetTextI18n")
    @Override
    protected void onCreate(@Nullable Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        TextView result = findViewById(R.id.resultView);
        Button btnLogout = findViewById(R.id.btnLogout);
        // Ensure consistent SharedPreferences name
        prf = getSharedPreferences("LoginPrefs", MODE_PRIVATE);
        // Retrieve username from SharedPreferences
        String username = prf.getString("username", "Guest");
        result.setText("Hello, " + username);
        btnLogout.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                // Clear SharedPreferences and navigate to MainActivity
                SharedPreferences.Editor editor = prf.edit();
                editor.clear();
                editor.apply();
                startActivity(new Intent(SecondActivity.this, MainActivity.class));
                finish(); // End the current activity
            }
        });
    }
}
```

Output:
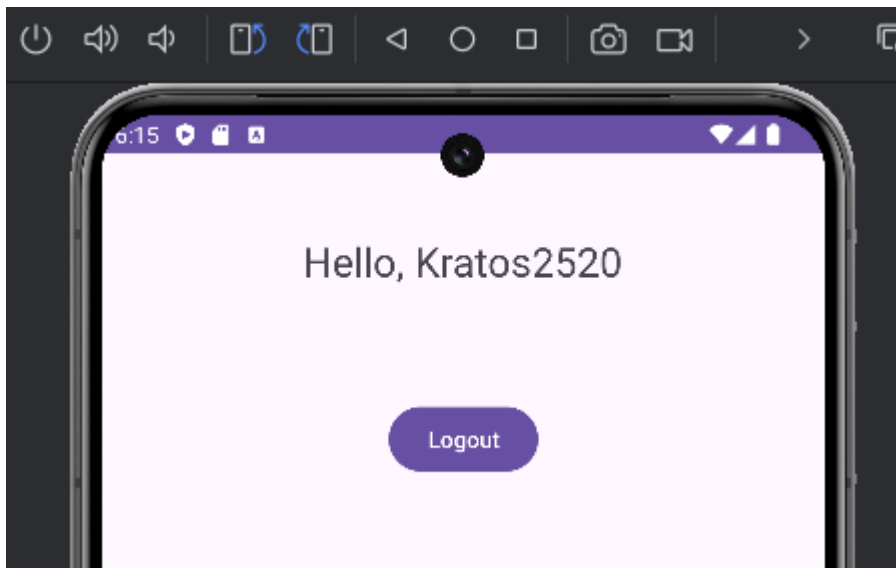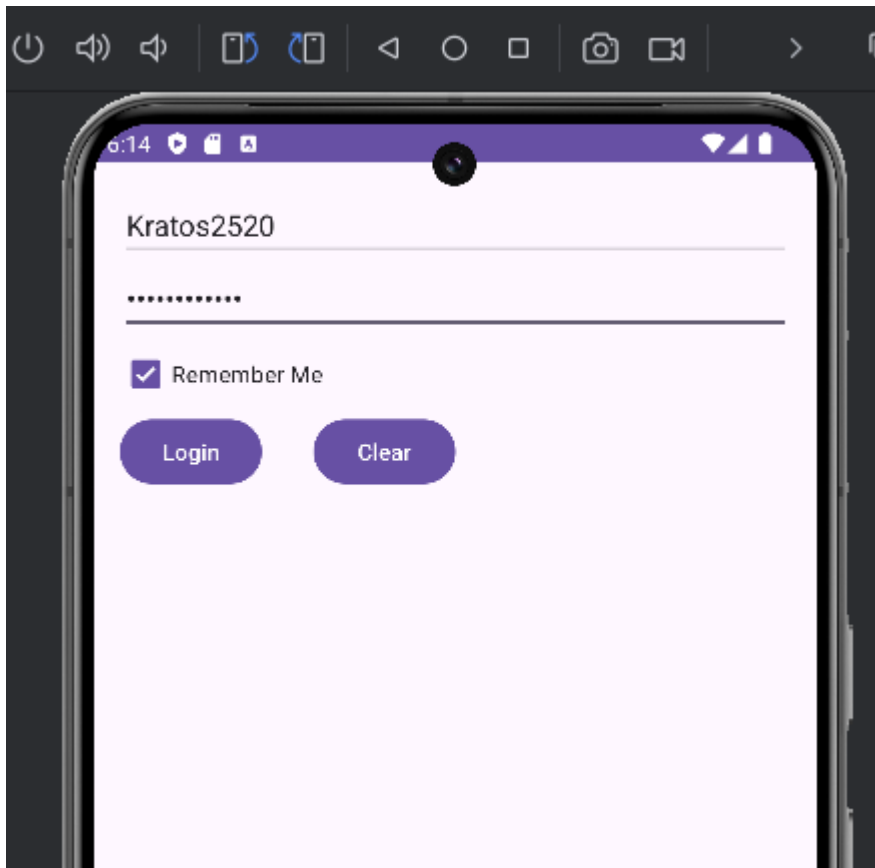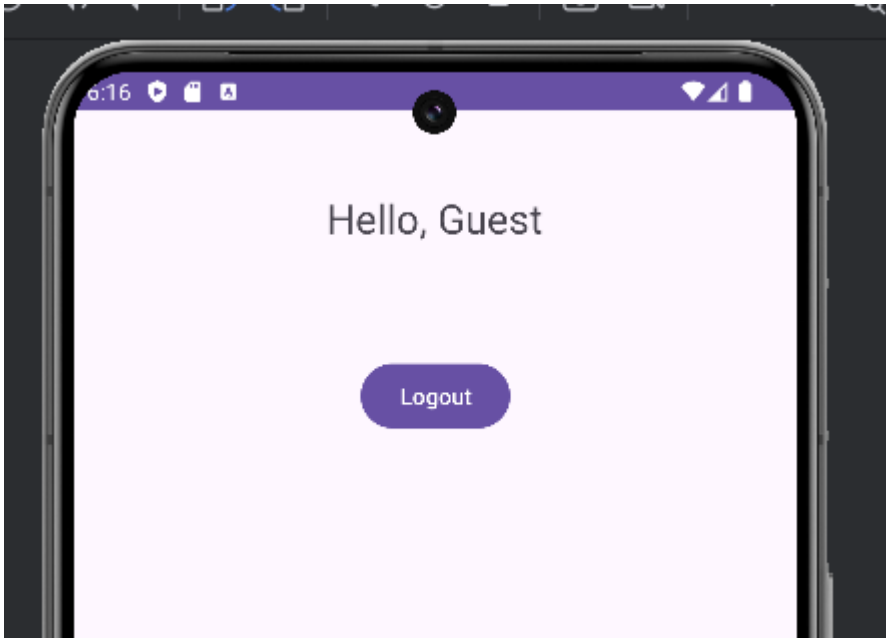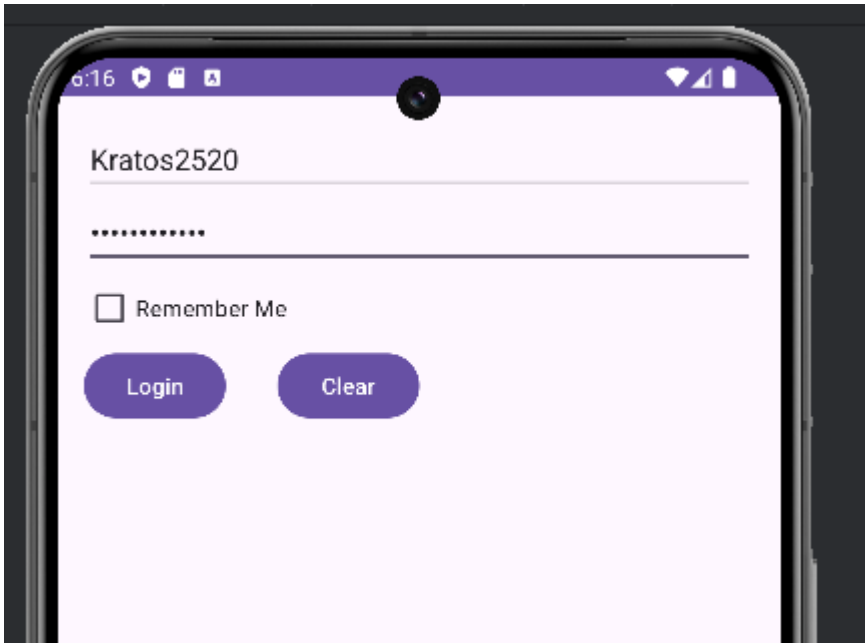
Practical No: 02

Create an android application for file handling in the internal storage. Do the following operations onClick of respective button:Write Read and delete

Activity_main.xml:

```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:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="50dp"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="145dp"
        android:text="Text:"
        android:textSize="22sp" />
    <EditText
        android:id="@+id/editText"
        android:layout_width="263dp"
        android:layout_height="wrap_content"
        android:layout_alignBottom="@+id/textView"
        android:layout_alignEnd="@+id/button3"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="18sp" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentBottom="true"
```

```xml
        android:layout_marginStart="28dp"
        android:layout_marginBottom="214dp"
        android:text="Read" />
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignTop="@+id/button"
        android:layout_centerHorizontal="true"
        android:text="Write" />
    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignTop="@+id/button"
        android:layout_alignParentEnd="true"
        android:layout_marginEnd="16dp"
        android:text="Delete" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="270dp"
        android:layout_height="65dp"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="100dp"
        android:textSize="22sp" />
    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_marginTop="82dp"
        android:text="Filename:"
        android:textSize="22sp" />
    <EditText
        android:id="@+id/editText2"
```
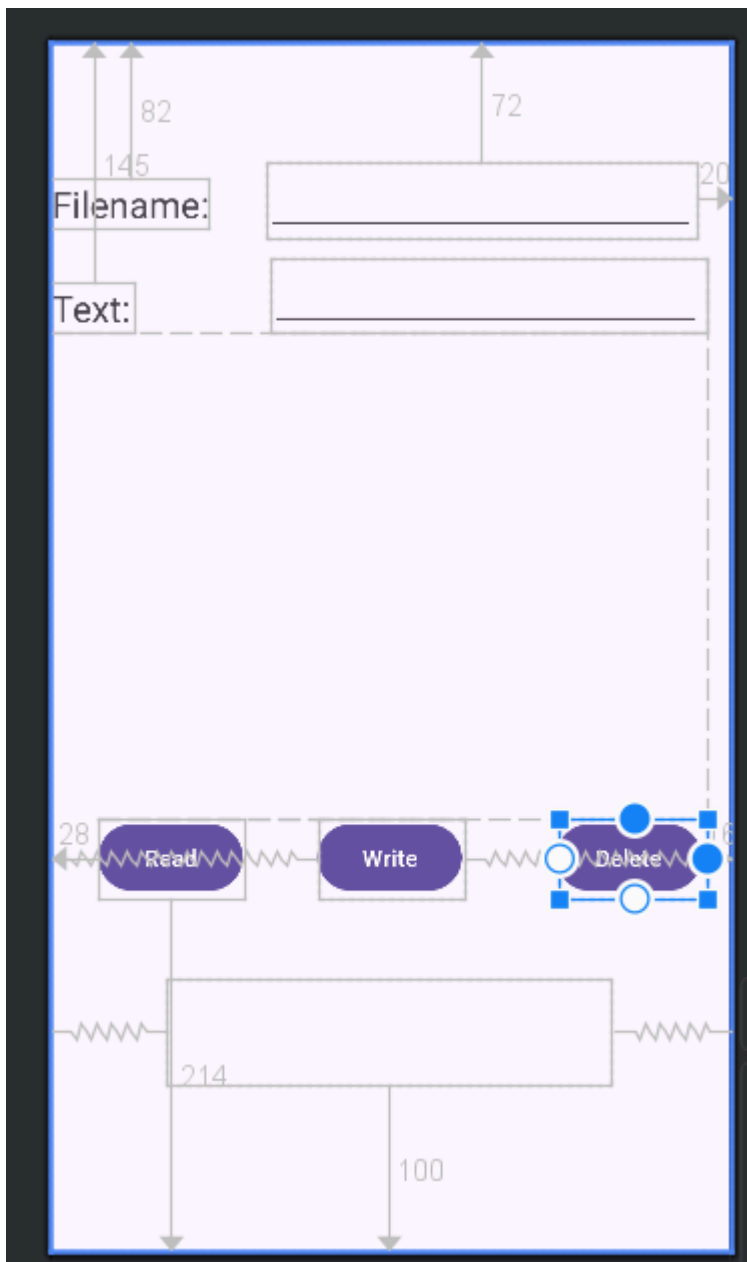
```
        android:layout_width="261dp"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentTop="true"
        android:layout_marginEnd="20dp"
        android:layout_marginTop="72dp"
        android:ems="10"
        android:inputType="textPersonName" />
</RelativeLayout>
```

MainActivity.java:

```java
package com.example.internalstorage;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
public class MainActivity extends AppCompatActivity {
    Button b1,b2,b3;
    EditText e1,e2;
    TextView t1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText) findViewById(R.id.editText);
        e2=(EditText) findViewById(R.id.editText2);
        b1=(Button)findViewById(R.id.button) ;
        b2=(Button) findViewById(R.id.button2);
        b3=(Button)findViewById(R.id.button3);
        t1=(TextView) findViewById(R.id.textView2) ;
        b1.setOnClickListener(new View.OnClickListener() {//read
            @Override
            public void onClick(View v) {
                String filename=e2.getText().toString()+".txt";
                try {
                    BufferedReader bReader = new BufferedReader(new
InputStreamReader(openFileInput(filename)));
                    String line;
```

```java
                StringBuffer text = new StringBuffer();
                while ((line = bReader.readLine()) != null) {
                    t1.setText((text.append(line + "\n")));
                }
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    });
    b2.setOnClickListener(new View.OnClickListener() {//write
        @Override
        public void onClick(View v) {
            String filename=e2.getText().toString()+".txt";
            String str=e1.getText().toString();
            try {
                FileOutputStream fos = openFileOutput(filename,
Context.MODE_PRIVATE);
                fos.write(str.getBytes());
                e1.setText("");
                fos.close();
                Toast.makeText(getApplicationContext(),"Successful",
Toast.LENGTH_SHORT).show();
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    });
    b3.setOnClickListener(new View.OnClickListener() {//Delete
        @Override
        public void onClick(View v) {
            String filename=e2.getText().toString()+".txt";
            try {
                File dir = getFilesDir();
                File file = new File(dir, filename);
                boolean deleted = file.delete();
            }
            catch (Exception e) {
```

```
                e.printStackTrace();
            }
        }
    });
    }
}
```

Output:

Filename: GOD OF WAR

Text:

Read   Write   Delete

KRATOS WILL RETURN

Create android application for file handling in the external storage.Do the following operations onClick of respective button:Write and Read Activity_main.xml:

```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:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="37dp"
        android:layout_marginTop="76dp"
        android:text="Reading and Writting External Storage"
        android:textAlignment="center"
        android:textAppearance="@style/TextAppearance.AppCompat.Large"
        android:textColor="#3F51B5"
        android:textStyle="bold"/>
    <EditText
        android:id="@+id/editdata"
        android:layout_width="313dp"
        android:layout_height="60dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="49dp"
        android:layout_marginTop="213dp"
        android:layout_marginEnd="48dp"
```

```xml
        android:hint="Enter Data" />
    <Button
        android:id="@+id/butRead"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="98dp"
        android:layout_marginBottom="276dp"
        android:text="Read" />
    <Button
        android:id="@+id/butwrite"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentEnd="true"
        android:layout_alignParentBottom="true"
        android:layout_marginEnd="77dp"
        android:layout_marginBottom="275dp"
        android:text="Write" />
    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="182dp"
        android:layout_marginBottom="52dp"
        android:text="TextView"
        android:textColor="#E91E63" />
</RelativeLayout>
```
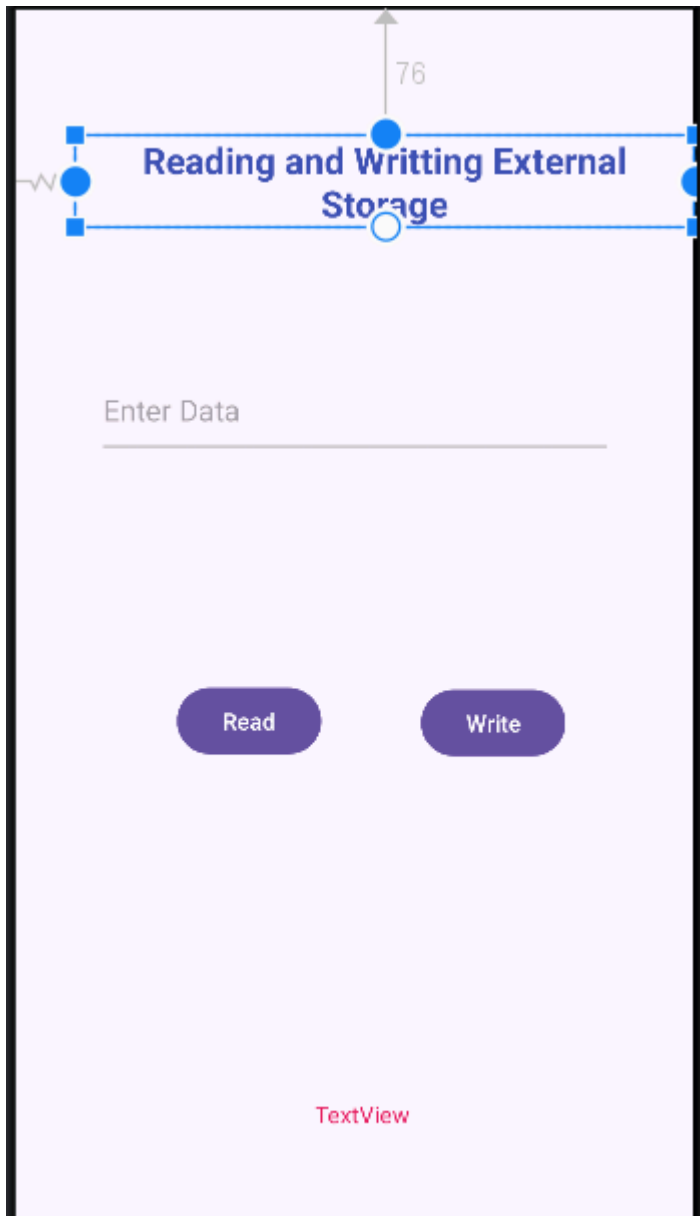
MainActivity.java:

```java
package com.example.externalstorage;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Environment;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import java.io.BufferedReader;
import java.io.DataInputStream;
```

```java
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
public class MainActivity extends AppCompatActivity {
    Button b1,b2;
    EditText e1;
    TextView t1;
    private String filename = "SampleFile.txt";
    private String filepath = "MyFileStorage";
    File myExternalFile;
    String myData = "";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1 = findViewById(R.id.editdata);
        b1 = findViewById(R.id.butwrite);
        b2 = findViewById(R.id.butRead);
        t1 = findViewById(R.id.textView2);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                //save the data into the file in byte format
                try {
                    FileOutputStream fos = new FileOutputStream(myExternalFile);
                    //write data in byte format in file
                    fos.write(e1.getText().toString().getBytes());
                    fos.close();
                } catch (IOException e) {
                    e.printStackTrace();
                }
                //display message and filepath_where_the_file_is_saved"
                e1.setText("");
                t1.setText("SampleFile.txt saved to External
Storage..."+myExternalFile.getAbsolutePath());
```

```java
            }
        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                try {
                    // Read the data that is saved in byte format in the file
                    FileInputStream fis = new FileInputStream(myExternalFile);
                    DataInputStream in = new DataInputStream(fis);
                    BufferedReader br = new BufferedReader(new
InputStreamReader(in));
                    String strLine;
                    while ((strLine = br.readLine()) != null) {
                        myData = myData + strLine;
                    }
                    in.close();
                } catch (IOException e) {
                    e.printStackTrace();
                }
                e1.setText(myData);
                t1.setText("SampleFile.txt data retrieved from Storage...");
            }
        });
        //to check whether the media is available or not
        if (!isExternalStorageAvailable() || isExternalStorageReadOnly()) {
            b2.setEnabled(false);
        } else {
            // Creating folder with name MyFileStorage
            // Creating file with name "SampleFile.txt"
            myExternalFile = new File(getExternalFilesDir(filepath), filename);
        }
    }
    private boolean isExternalStorageReadOnly() {
        String extStorageState = Environment.getExternalStorageState();
        if
(Environment.MEDIA_MOUNTED_READ_ONLY.equals(extStorageState)) {
            return true;
```
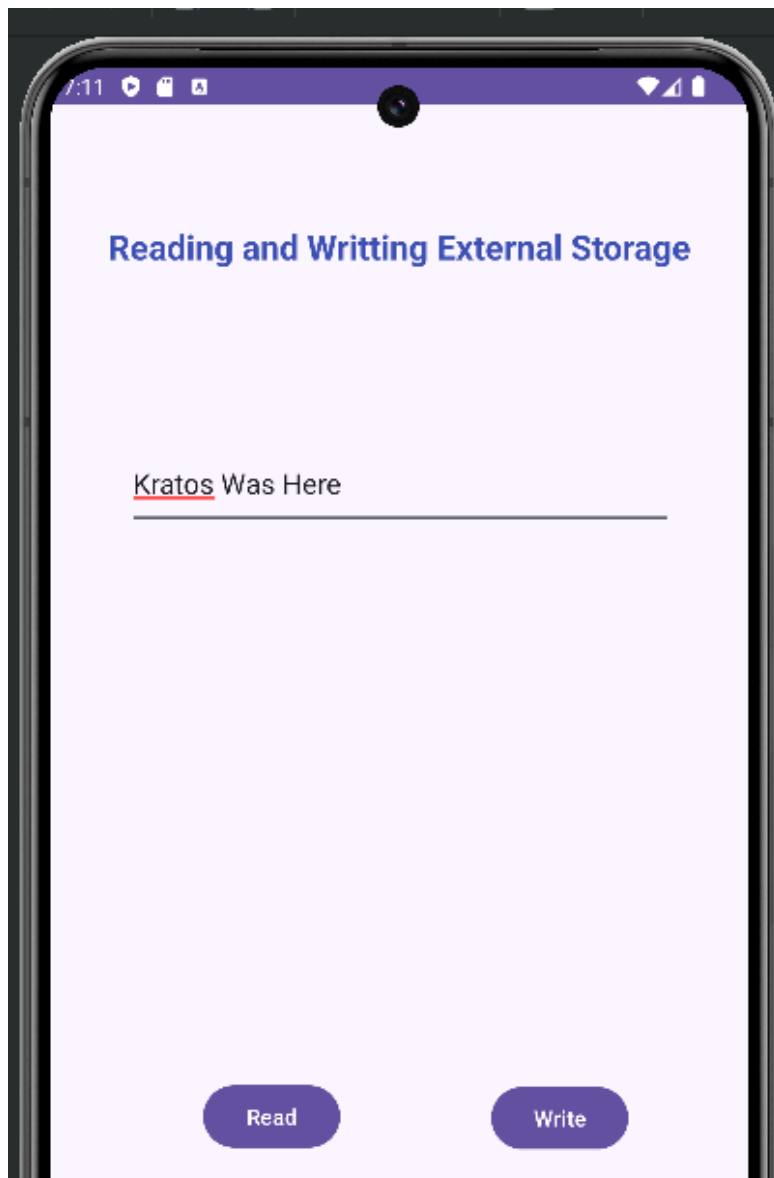
```
        }
        return false;
    }
    private boolean isExternalStorageAvailable() {
        String extStorageState = Environment.getExternalStorageState();
        if (Environment.MEDIA_MOUNTED.equals(extStorageState)) {
            return true;
        }
        return false;
    }
}
```
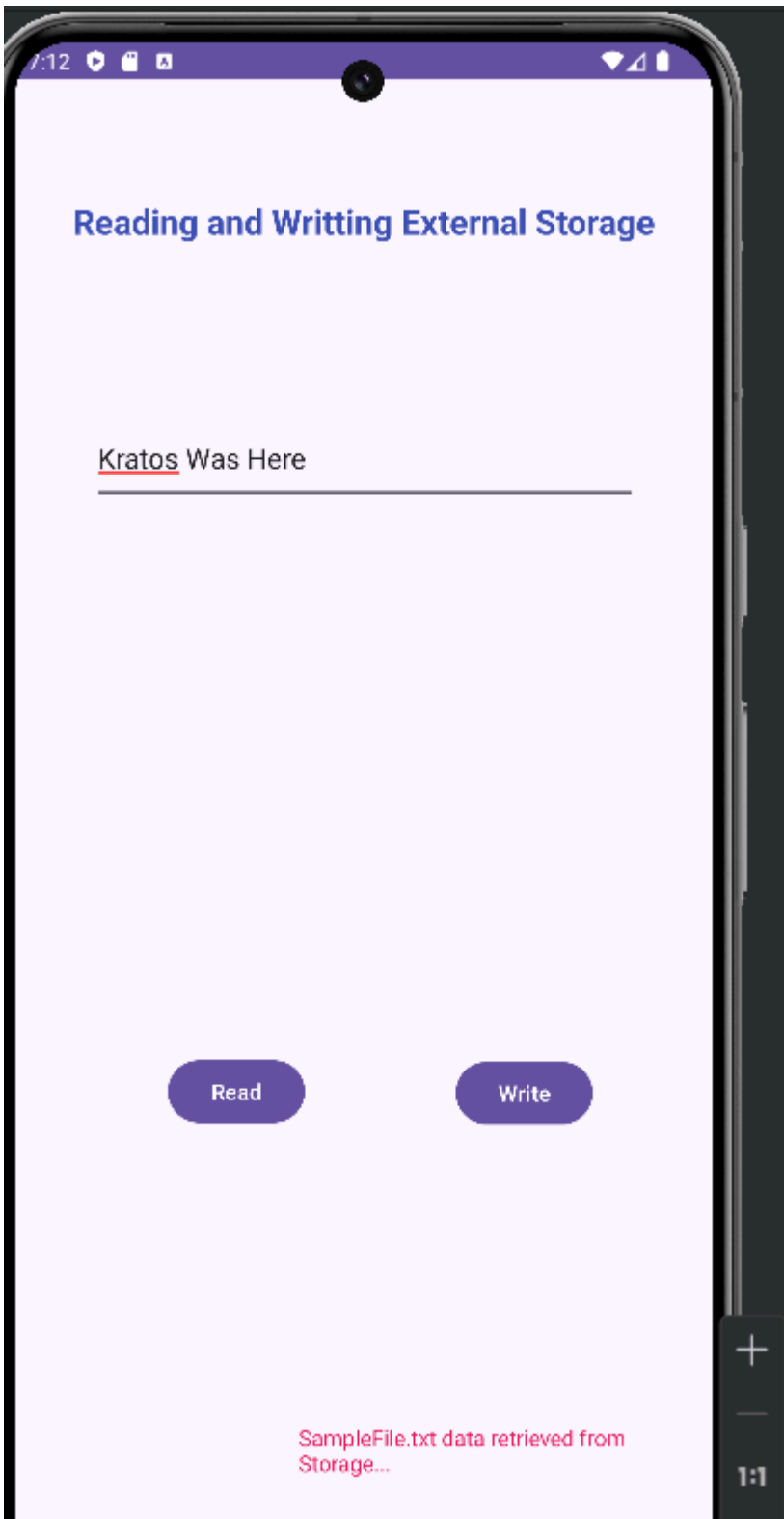
Output:

Reading and Writting External Storage

Enter Data

Read   Write

SampleFile.txt saved to External
Storage.../storage/emulated/0/Android/
data/com.example.external/files/
MyFileStorage/SampleFile.txt

# Reading and Writting External Storage

Kratos Was Here

Read **Write**

SampleFile.txt data retrieved from Storage....

Practical No: 04
Create a Student registration application to perform CRUD operations.
(Insert, Update, Delete & Search)
Activity_main.xml:

```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/editTextId"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="ID"
        android:inputType="number" />
    <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:hint="Email" />
    <EditText
        android:id="@+id/editTextPhone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Phone Number"
        android:inputType="number" />
    <Button
        android:id="@+id/buttonSave"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Save" />
```

```xml
    <Button
        android:id="@+id/buttonView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="View" />
    <Button
        android:id="@+id/buttonDelete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Delete" />
    <Button
        android:id="@+id/buttonUpdate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Update" />
    <Button
        android:id="@+id/buttonSearch"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Search" />
</LinearLayout>
```
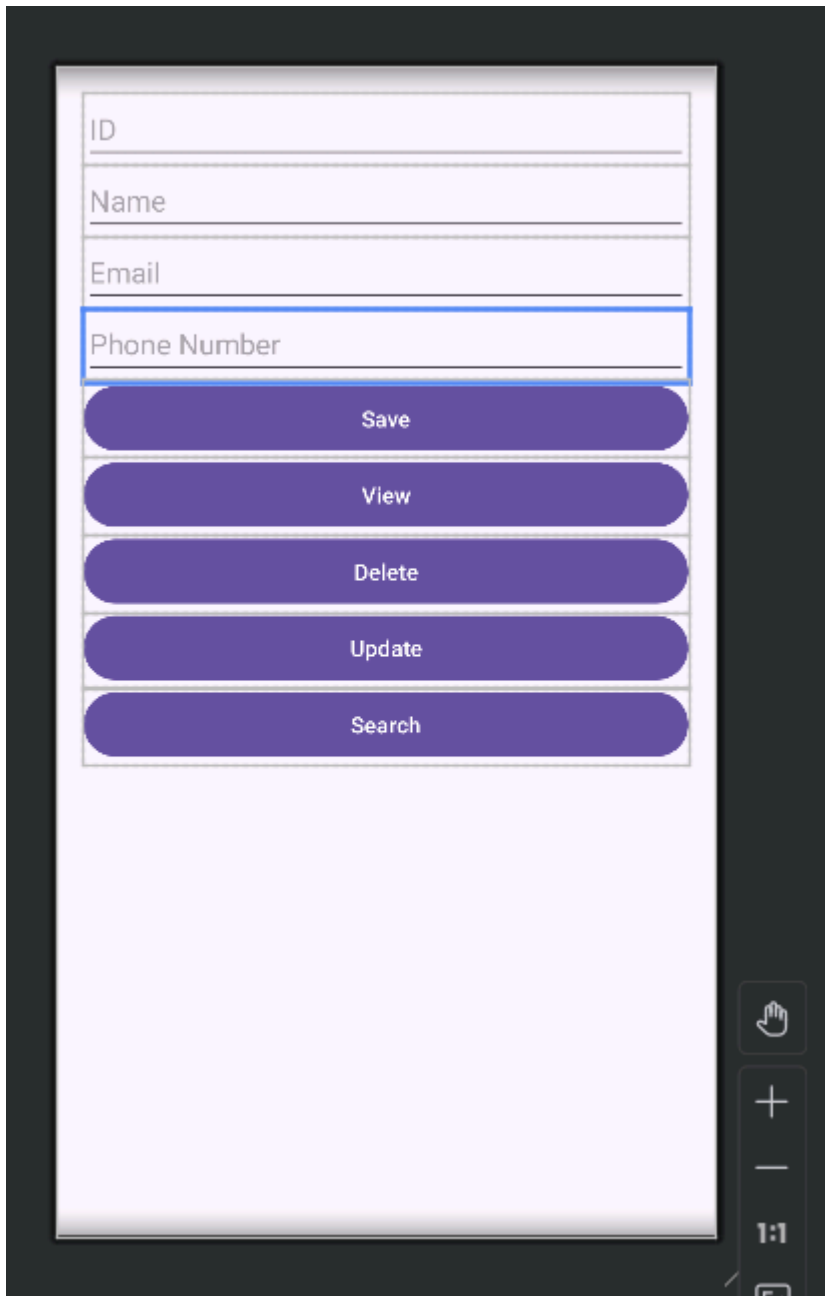
MainActivity.java:
package com.example.crud;
import android.annotation.SuppressLint;
import android.content.Intent;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

```java
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    EditText editTextId, editTextName, editTextEmail, editTextPhone;
    Button buttonSave, buttonView, buttonDelete, buttonUpdate, buttonSearch;
    DBHelper dbHelper;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextId = findViewById(R.id.editTextId);  // ID field remains for display
        editTextName = findViewById(R.id.editTextName);
        editTextEmail = findViewById(R.id.editTextEmail);
        editTextPhone = findViewById(R.id.editTextPhone);
        buttonSave = findViewById(R.id.buttonSave);
        buttonView = findViewById(R.id.buttonView);
        buttonDelete = findViewById(R.id.buttonDelete);
        buttonUpdate = findViewById(R.id.buttonUpdate);
        buttonSearch = findViewById(R.id.buttonSearch);
        dbHelper = new DBHelper(this);
        buttonSave.setOnClickListener(v -> saveData());
        buttonView.setOnClickListener(v -> viewData());
        buttonDelete.setOnClickListener(v -> deleteData());
        buttonUpdate.setOnClickListener(v -> updateData());
        buttonSearch.setOnClickListener(v -> searchData());
    }
    @Override
    protected void onResume() {
        super.onResume();
        // Clear all EditText fields when returning from another screen
        clearEditTexts();
    }
    private void clearEditTexts() {
        editTextId.setText("");
        editTextName.setText("");
        editTextEmail.setText("");
        editTextPhone.setText("");
```

```java
    }
    private void saveData() {
        String name = editTextName.getText().toString();
        String email = editTextEmail.getText().toString();
        String phoneStr = editTextPhone.getText().toString();
        if (name.isEmpty() || email.isEmpty() || phoneStr.isEmpty()) {
            Toast.makeText(this, "Please fill all fields",
Toast.LENGTH_SHORT).show();
            return;
        }
        int phone = Integer.parseInt(phoneStr);
        boolean isInserted = dbHelper.insertData(name, email, phone);


        // After inserting, retrieve the last inserted ID to display
        if (isInserted) {
            Cursor cursor = dbHelper.getAllDataCursor();
            if (cursor.moveToLast()) {
                editTextId.setText(String.valueOf(cursor.getInt(0))); // Display the last
inserted ID
            }
            cursor.close();
            Toast.makeText(this, "Data Saved", Toast.LENGTH_SHORT).show();
        } else {
            Toast.makeText(this, "Error Saving Data",
Toast.LENGTH_SHORT).show();
        }
    }
    private void viewData() {
        Intent intent = new Intent(this, ViewActivity.class);
        startActivity(intent);
    }
    private void deleteData() {
        String idStr = editTextId.getText().toString();
        if (idStr.isEmpty()) {
            Toast.makeText(this, "Enter ID to delete",
Toast.LENGTH_SHORT).show();
```

```java
            return;
        }
        int id = Integer.parseInt(idStr);
        boolean isDeleted = dbHelper.deleteData(id);
        Toast.makeText(this, isDeleted ? "Data Deleted" : "Error Deleting Data",
Toast.LENGTH_SHORT).show();
    }
    private void updateData() {
        String idStr = editTextId.getText().toString();
        String name = editTextName.getText().toString();
        String email = editTextEmail.getText().toString();
        String phoneStr = editTextPhone.getText().toString();
        if (idStr.isEmpty() || name.isEmpty() || email.isEmpty() ||
phoneStr.isEmpty()) {
            Toast.makeText(this, "Please fill all fields",
Toast.LENGTH_SHORT).show();
            return;
        }
        int id = Integer.parseInt(idStr);
        int phone = Integer.parseInt(phoneStr);
        boolean isUpdated = dbHelper.updateData(id, name, email, phone);
        Toast.makeText(this, isUpdated ? "Data Updated" : "Error Updating Data",
Toast.LENGTH_SHORT).show();
    }
    private void searchData() {
        String idStr = editTextId.getText().toString();
        if (idStr.isEmpty()) {
            Toast.makeText(this, "Enter ID to search",
Toast.LENGTH_SHORT).show();
            return;
        }
        int id = Integer.parseInt(idStr);
        Cursor cursor = dbHelper.searchData(id);
        if (cursor.moveToFirst()) {
            editTextName.setText(cursor.getString(1));
            editTextEmail.setText(cursor.getString(2));
            editTextPhone.setText(cursor.getString(3));
```

```
        Toast.makeText(this, "Data Found", Toast.LENGTH_SHORT).show();
    } else {
        Toast.makeText(this, "Data Not Found",
Toast.LENGTH_SHORT).show();
    }
    cursor.close();
  }
}
```

DBHelper.java:

```
package com.example.crud;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import java.util.ArrayList;
public class DBHelper extends SQLiteOpenHelper {
    private static final String DATABASE_NAME = "user.db";
    private static final String TABLE_NAME = "user_table";
    private static final String COL_1 = "ID";
    private static final String COL_2 = "NAME";
    private static final String COL_3 = "EMAIL";
    private static final String COL_4 = "PHONE";
    public DBHelper(Context context) {
        super(context, DATABASE_NAME, null, 1);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("CREATE TABLE " + TABLE_NAME + " (ID INTEGER
PRIMARY KEY AUTOINCREMENT, NAME TEXT, EMAIL TEXT, PHONE
INTEGER)");
    }
    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS " + TABLE_NAME);
        onCreate(db);
```

```java
    }
    public boolean insertData(String name, String email, int phone) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COL_2, name);
        contentValues.put(COL_3, email);
        contentValues.put(COL_4, phone);
        long result = db.insert(TABLE_NAME, null, contentValues);
        return result != -1;
    }
    public ArrayList<String> getAllData() {
        ArrayList<String> dataList = new ArrayList<>();
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cursor = db.rawQuery("SELECT * FROM " + TABLE_NAME,
null);
        while (cursor.moveToNext()) {
            dataList.add("ID: " + cursor.getInt(0) + "\nName: " + cursor.getString(1)
+ "\nEmail: " + cursor.getString(2) + "\nPhone: " + cursor.getInt(3));
        }
        cursor.close();
        return dataList;
    }
    public boolean deleteData(int id) {
        SQLiteDatabase db = this.getWritableDatabase();
        return db.delete(TABLE_NAME, "ID = ?", new
String[]{String.valueOf(id)}) > 0;
    }
    public boolean updateData(int id, String name, String email, int phone) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COL_2, name);
        contentValues.put(COL_3, email);
        contentValues.put(COL_4, phone);
        return db.update(TABLE_NAME, contentValues, "ID = ?", new
String[]{String.valueOf(id)}) > 0;
    }
    public Cursor searchData(int id) {
```

```
        SQLiteDatabase db = this.getReadableDatabase();
        return db.rawQuery("SELECT * FROM " + TABLE_NAME + " WHERE
ID = ?", new String[]{String.valueOf(id)});
    }
    public Cursor getAllDataCursor() {
        SQLiteDatabase db = this.getWritableDatabase();
        return db.rawQuery("SELECT * FROM " + TABLE_NAME, null);
    }
}
```

Activity_view.xml:
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp">
    <TextView
        android:id="@+id/textViewDetails"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="18sp" />
    <Button
        android:id="@+id/buttonBack"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Back" />
</LinearLayout>
```
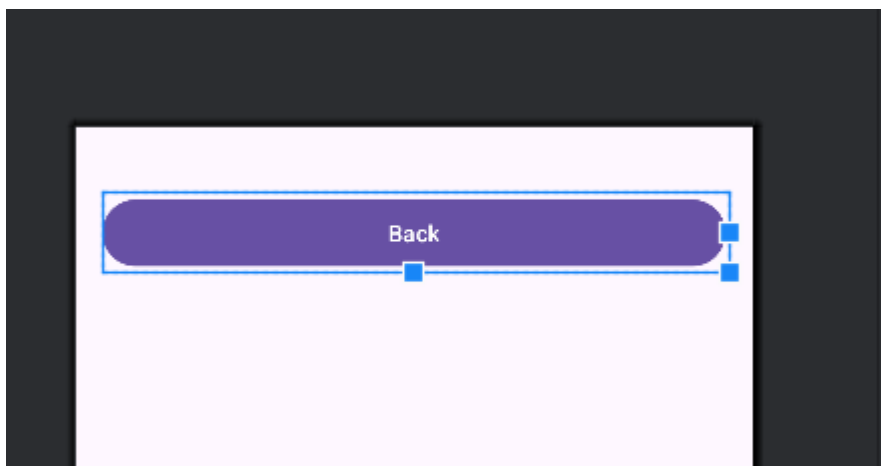
ViewActivity.java:

```java
package com.example.crud;
import android.os.Bundle;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.util.ArrayList;
public class ViewActivity extends AppCompatActivity {
    TextView textViewDetails;
    Button buttonBack;
    DBHelper dbHelper;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_view);
        textViewDetails = findViewById(R.id.textViewDetails);
        buttonBack = findViewById(R.id.buttonBack);
        dbHelper = new DBHelper(this);
        ArrayList<String> dataList = dbHelper.getAllData();
        if (dataList.isEmpty()) {
            textViewDetails.setText("No Data Available");
        } else {
            StringBuilder details = new StringBuilder();
            for (String data : dataList) {
                details.append(data).append("\n\n");
            }
            textViewDetails.setText(details.toString());
        }
        buttonBack.setOnClickListener(v -> finish());
    }
}
```

Output:

Enter more data
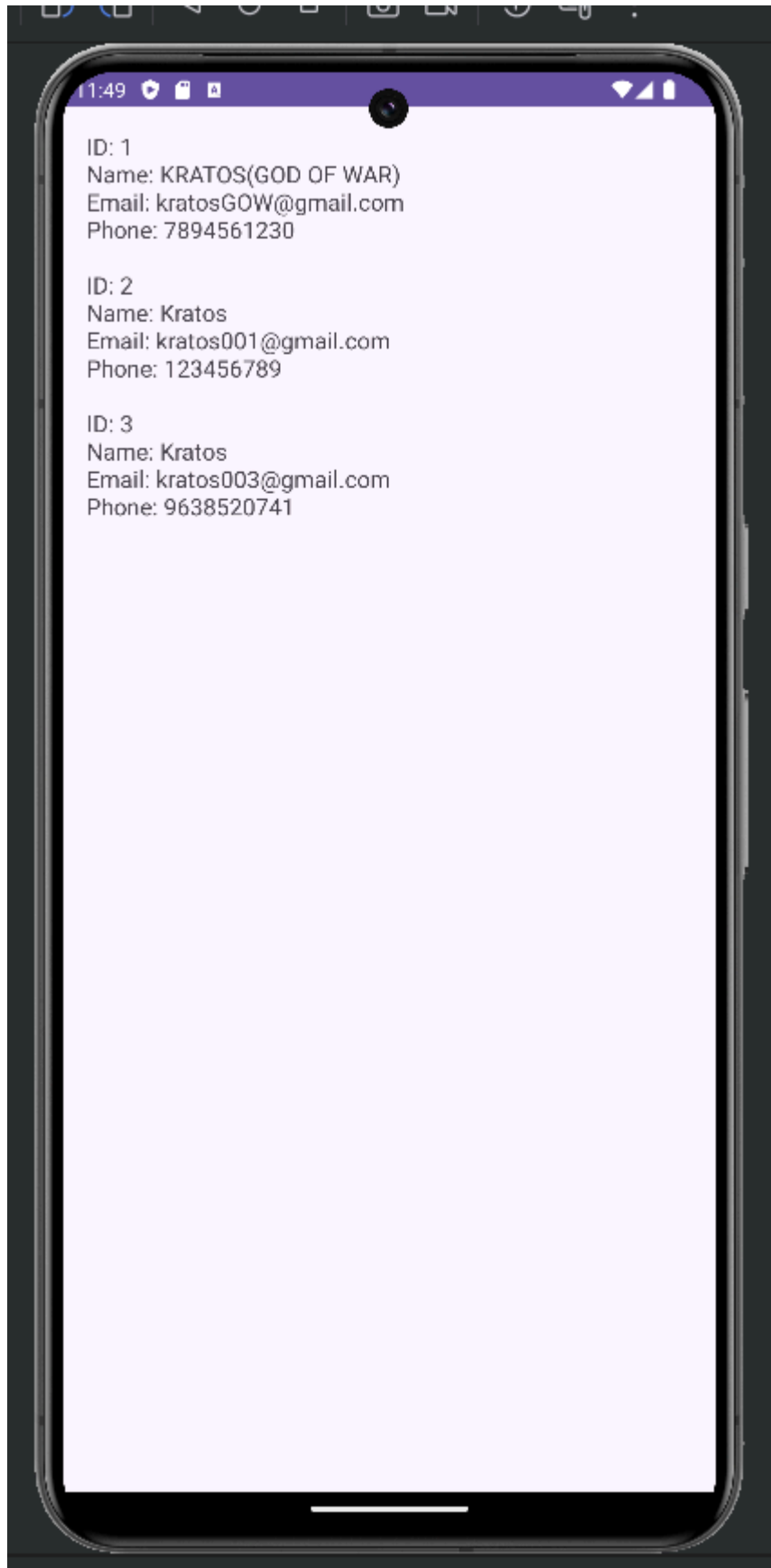
ID: 1
Name: Kratos
Email: kratos@gmail.com
Phone: 987654321

ID: 2
Name: Kratos
Email: kratos001@gmail.com
Phone: 123456789

ID: 3
Name: Kratos
Email: kratos003@gmail.com
Phone: 9638520741
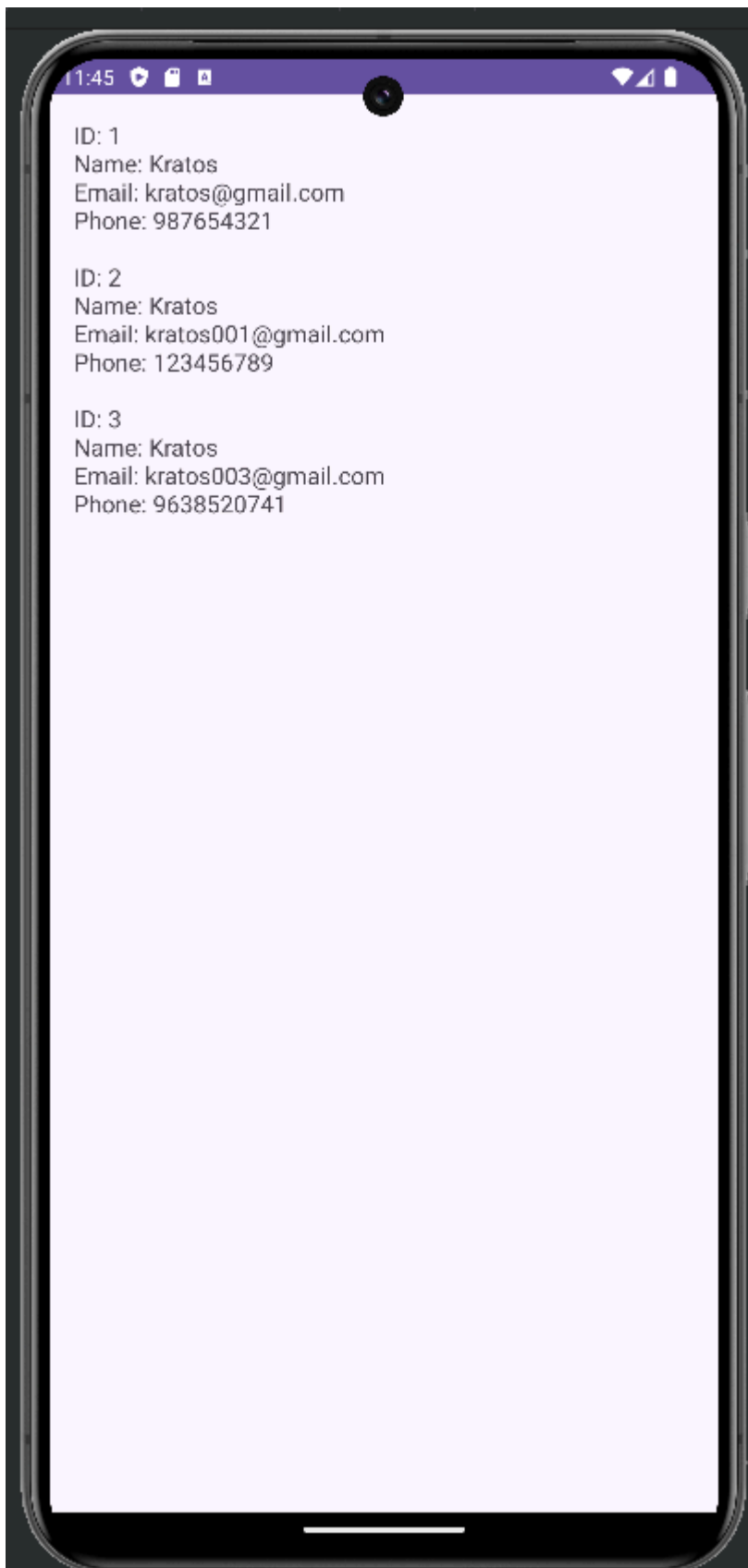
2

Kratos

kratos001@gmail.com

123456789

Save

View All

Search

Update

Delete

1

KRATOS(GOD OF WAR)

kratosGOW@gmail.com

7894561230

Save

View All

Search
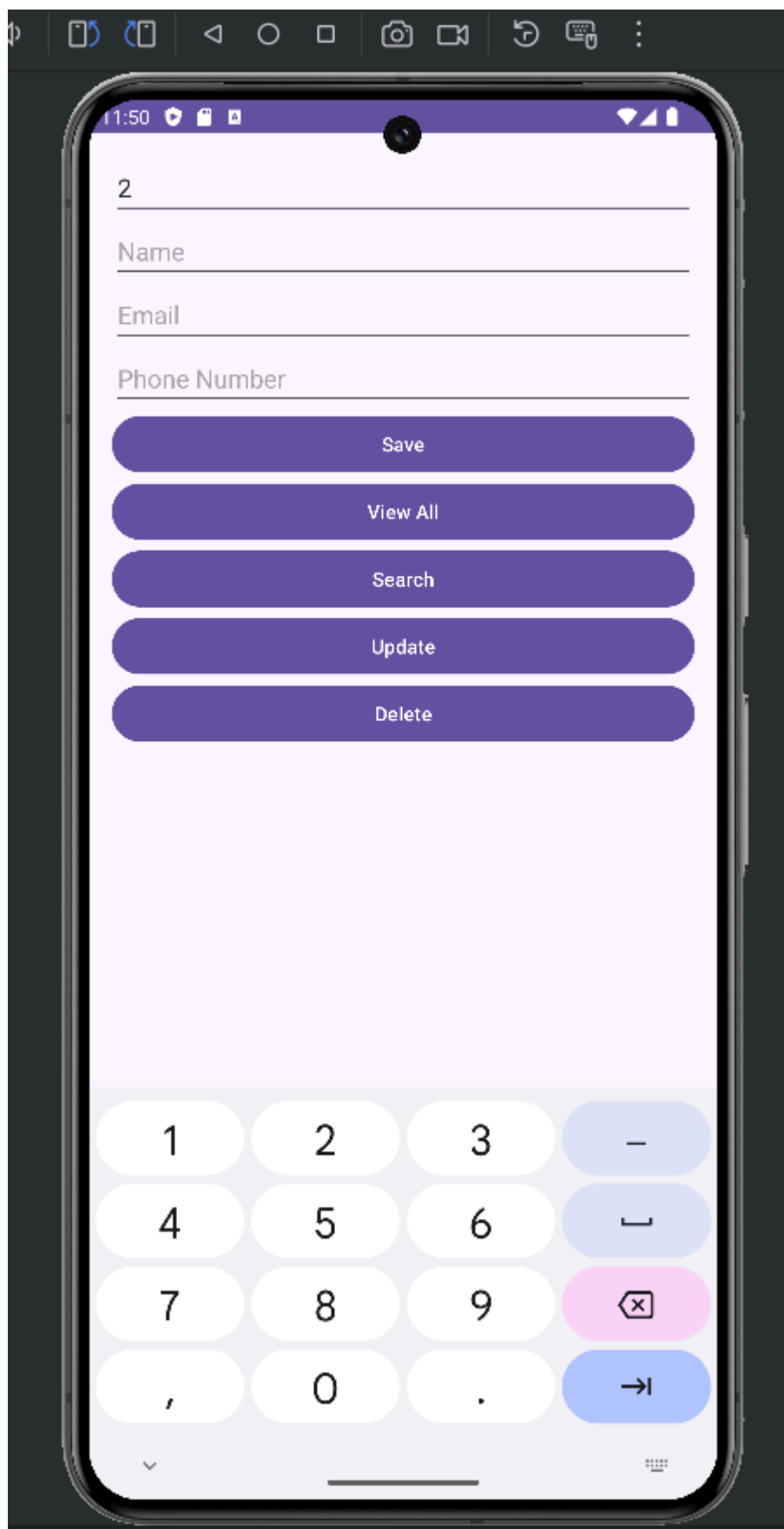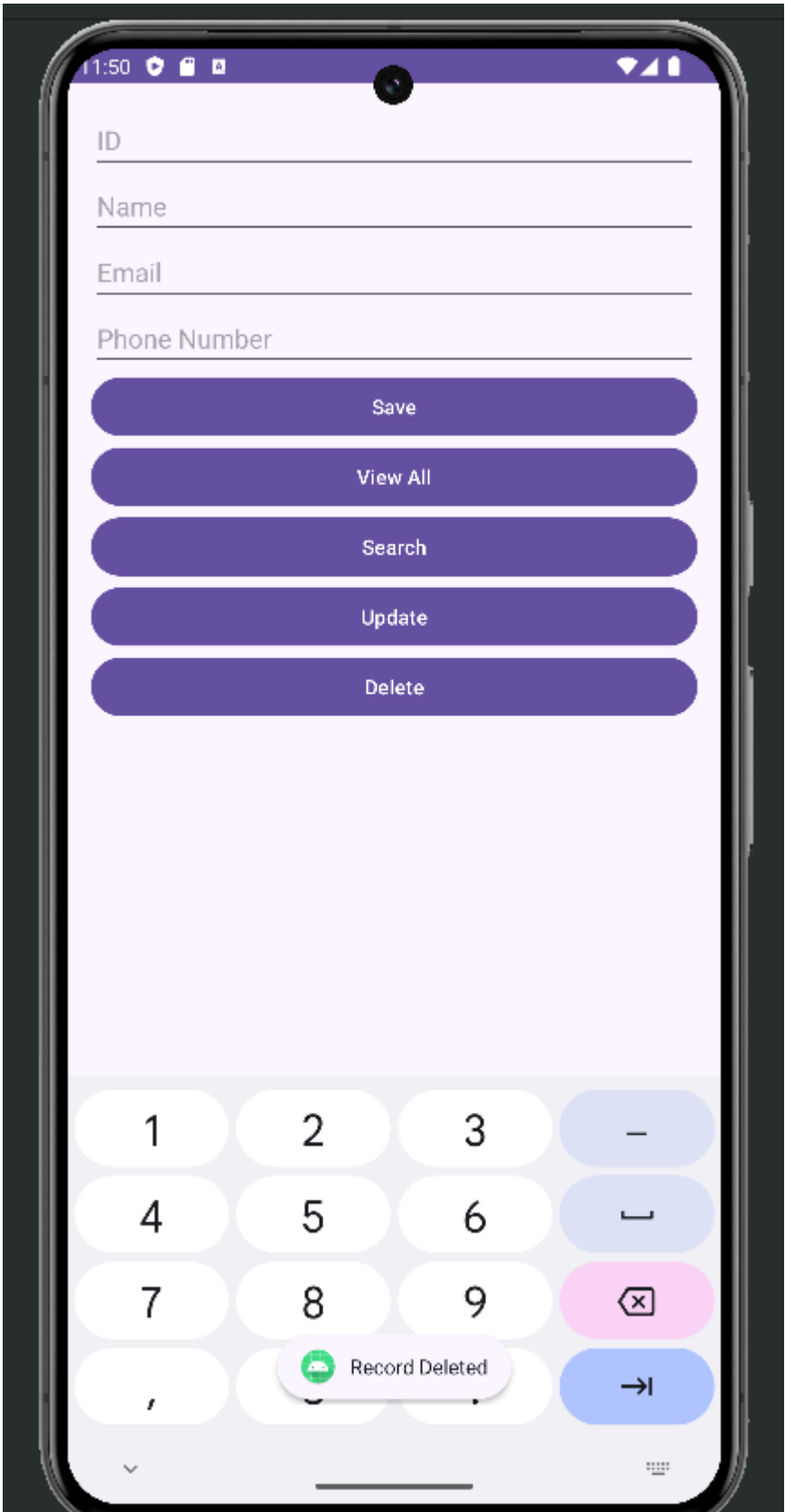
Update

Delete
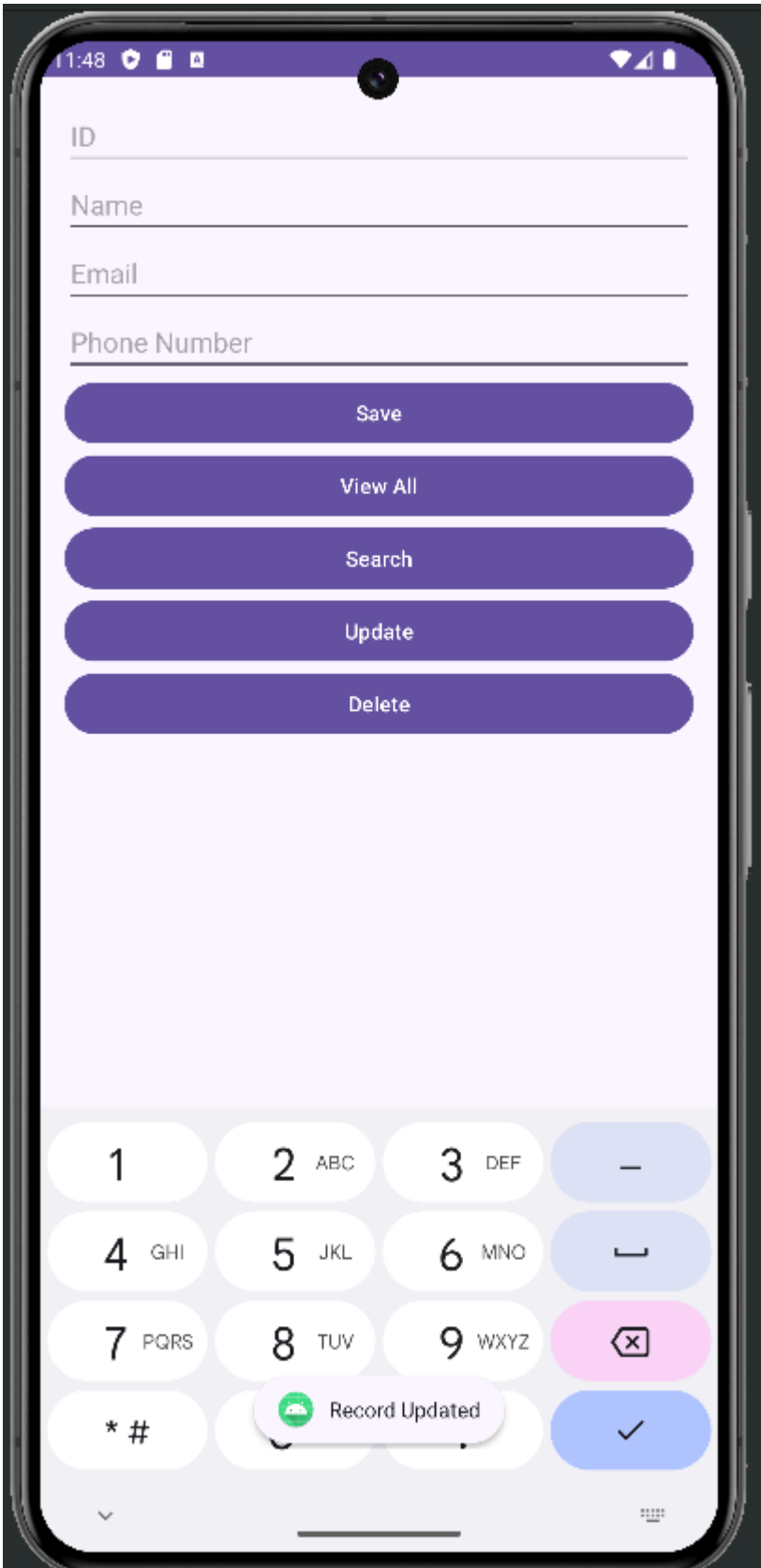
ID: 1
Name: KRATOS(GOD OF WAR)
Email: kratosGOW@gmail.com
Phone: 7894561230

ID: 2
Name: Kratos
Email: kratos001@gmail.com
Phone: 123456789

ID: 3
Name: Kratos
Email: kratos003@gmail.com
Phone: 9638520741

2

Name

Email

Phone Number

Save

View All

Search

Update

Delete

ID: 1
Name: KRATOS(GOD OF WAR)
Email: kratosGOW@gmail.com
Phone: 7894561230

ID: 3
Name: Kratos
Email: kratos003@gmail.com
Phone: 9638520741