Experiment 9

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9.1 Aim:

To develop an Android Application that writes data to the SD Card/ or any other media

9.2 Procedure:

- Open eclipse or android studio and create new project Select our project in the project explorer
- Go to res folder and select layout Double click the main xml file Type the code for main.xml or drag and drop various components used in our program
- Drag and drop relative layout and change its properties
- Drag and drop image view and change its properties according to our programs
- Screen layout can be viewed by clicking graphics layout tab Include necessary files Override OnCreate() function
- Create Image view and initialize its using id of some components used in the xml program
- Save the program Run the program
- Output can be viewed in the android emulator

9.3 Program:

Code for Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
```

```
    tools:context=".MainActivity">



    <LinearLayout
        android:layout_width="393dp"
        android:layout_height="268dp"
        android:orientation="vertical"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.525">

        <EditText
            android:id="@+id/editText"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:singleLine="true" android:textSize="30dp" />


        <Button
            android:id="@+id/button"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Write Data" />

        <Button
            android:id="@+id/button2"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Read Data" />

        <Button
            android:id="@+id/button3"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Clear" />
    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.experiment1">

    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"
/>
    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE"/>
    <application

        android:requestLegacyExternalStorage="true"
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Experiment1">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

Code for MainActivity.java:

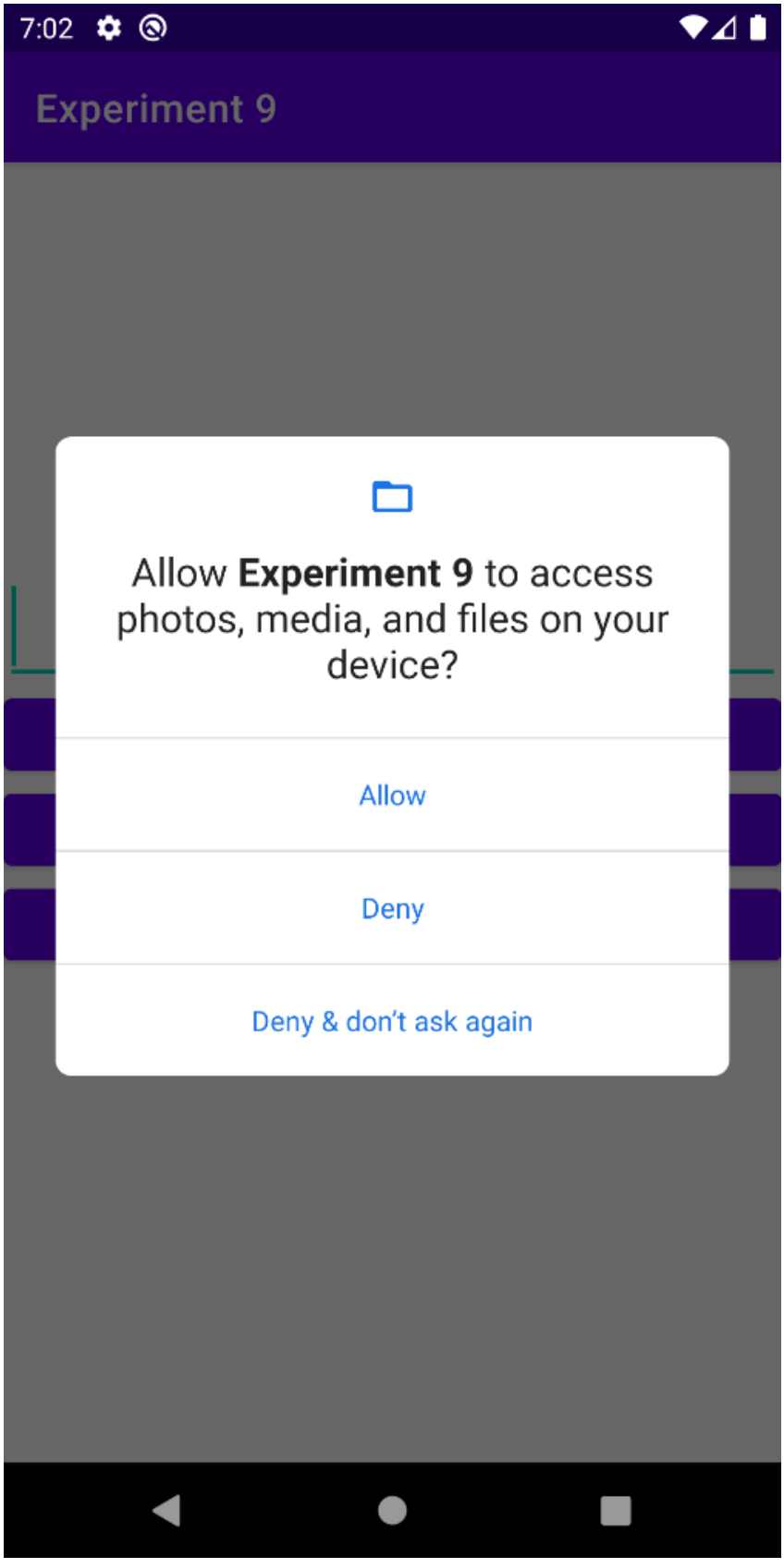
```
package com.example.experiment1;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;

import android.Manifest;
import android.content.Context;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;
```

```
public class MainActivity extends AppCompatActivity {


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final Button button = findViewById(R.id.button);
        final Button showButton = findViewById(R.id.button2);
        final Button clearButton = findViewById(R.id.button3);
        final EditText textInp   = findViewById(R.id.editText);


        ActivityCompat.requestPermissions(MainActivity.this,
                new String[]{Manifest.permission.READ_EXTERNAL_STORAGE,
Manifest.permission.WRITE_EXTERNAL_STORAGE},
                1);


        button.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
//                store data

                try{
                    File f=new File("/sdcard/myfile.txt"); f.createNewFile();
                    FileOutputStream fout=new FileOutputStream(f);
                    fout.write(textInp.getText().toString().getBytes());
fout.close();
                    ShowToast(v,"Data Written in SDCARD");

                }
                catch (Exception e)
                {
                    ShowToast(v,e.getMessage());

                }

            }
        });
        showButton.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
//                read data
                String message;
                String buf = "";
                try {
                    File f = new File("/sdcard/myfile.txt");
                    FileInputStream fin = new FileInputStream(f);
                    BufferedReader br = new BufferedReader(new
InputStreamReader(fin));
                    while ((message = br.readLine()) != null) {
                        buf += message;
                    }
                    textInp.setText(buf);
                    br.close();
                    fin.close();

                } catch (FileNotFoundException e) {
                    e.printStackTrace();
                } catch (IOException e) {
                    e.printStackTrace();
                }
```

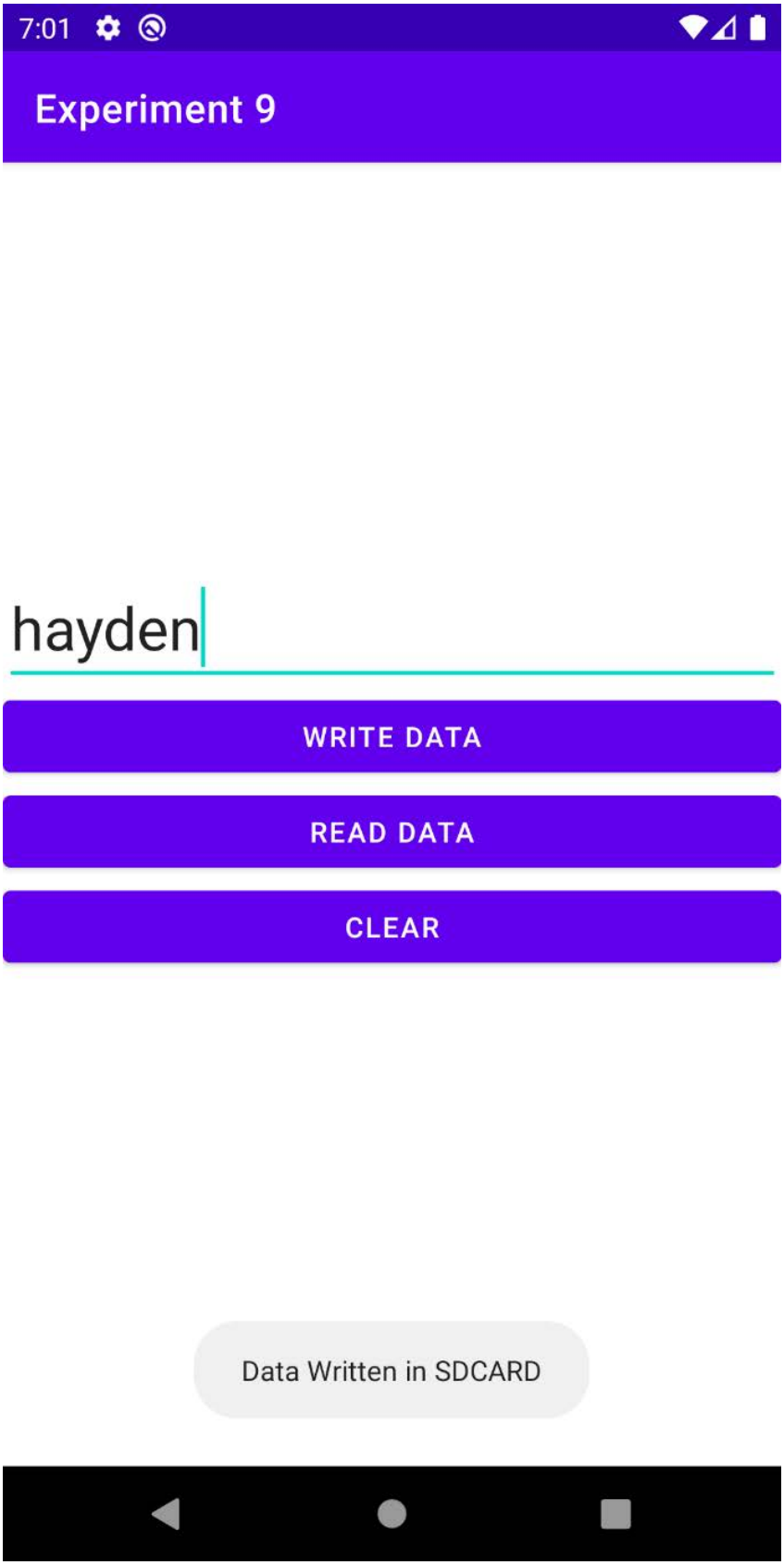
```
                Toast.makeText(getBaseContext(), "Data Recived from SDCARD",
Toast.LENGTH_LONG).show();


            }
            });

        clearButton.setOnClickListener(new View.OnClickListener() {
            public void onClick(View v) {
//                clear data
                textInp.setText("");
                ShowToast(v,"Cleared Input");
            }
        });

    }

    public void ShowToast(View v,String msg){

        Toast.makeText(v.getContext(), msg,
                Toast.LENGTH_SHORT).show();

    }
}
```

9.4 Inputs:

Request permission



Write Data


7:01
Experiment 9
hayden
WRITE DATA
READ DATA
CLEAR
Data Written in SDCARD

Clear

Read Data


7:02
Experiment 9
hayden
WRITE DATA
READ DATA
CLEAR
Data Recived from SDCARD

9.5 Conclusion:

Thus Android Application that writes data to the SD Card is developed and executed successfully.