Ex. No.	**:**	**06**	**Date:**
Register No.:		**221701029**	**Name: Keerthana V**

SD Card

Aim

Implement an application to write the name and CGPA to the SD card in text file format.

Procedure:

1. Create a new Android project in Android Studio (Empty Activity, Java).
2. Design activity_main.xml with:
    a. Two EditText fields: Name and CGPA
    b. One Button: Save to SD Card
3. Request storage permission in AndroidManifest.xml
4. Create Java logic in MainActivity.java:
    a. Get inputs from EditText
    b. On button click:
        i. Check if SD card is available
        ii. Create or open a .txt file
        iii. Write the name and CGPA to the file
5. Test on real device or emulator.

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

  <application

    android:allowBackup="true"
    android:requestLegacyExternalStorage="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.Exp6"
    tools:targetApi="31">

    <activity
      android:name=".MainActivity"
      android:exported="true">
      <intent-filter>
        <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Activity_main.xml

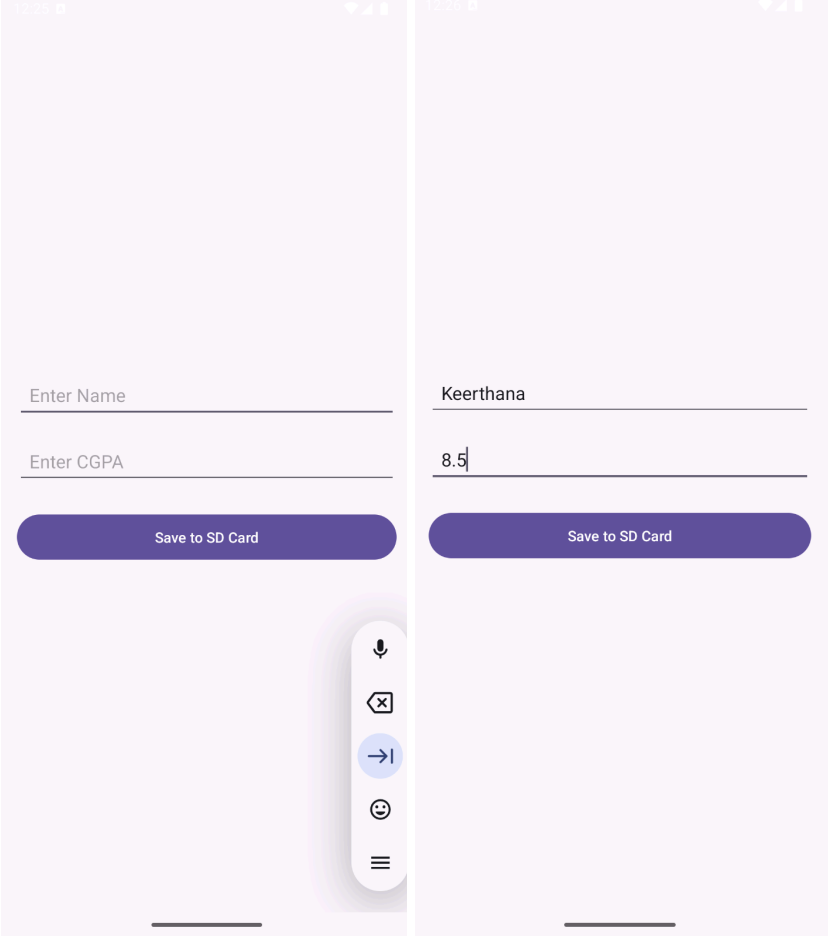
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:id="@+id/layout"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="20dp"
  android:gravity="center_vertical">

  <EditText
    android:id="@+id/nameInput"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:minHeight="48dp"
    android:padding="12dp"
    android:hint="Enter Name"
    android:inputType="textPersonName" />

  <EditText
    android:id="@+id/cgpaInput"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:minHeight="48dp"
    android:padding="12dp"
    android:hint="Enter CGPA"
    android:inputType="numberDecimal"
    android:layout_marginTop="16dp" />

  <Button
    android:id="@+id/saveButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:minHeight="48dp"
    android:text="Save to SD Card"
    android:layout_marginTop="24dp"
    android:padding="12dp" />

</LinearLayout>
```


MainActivity.java

```
package com.example.exp6;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Bundle;
import android.os.Environment;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import java.io.File;
import java.io.FileOutputStream;
import java.io.IOException;

public class MainActivity extends AppCompatActivity {

  EditText nameInput, cgpaInput;
  Button saveButton;

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

    nameInput = findViewById(R.id.nameInput);
    cgpaInput = findViewById(R.id.cgpaInput);
    saveButton = findViewById(R.id.saveButton);

    // Request write permission at runtime
    if (ContextCompat.checkSelfPermission(this,
                                Manifest.permission.WRITE_EXTERNAL_STORAGE)  !=
PackageManager.PERMISSION_GRANTED) {

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

    saveButton.setOnClickListener(v -> saveToSDCard());
```

```
    }

    private void saveToSDCard() {
        String name = nameInput.getText().toString().trim();
        String cgpa = cgpaInput.getText().toString().trim();

        if (name.isEmpty() || cgpa.isEmpty()) {
                        Toast.makeText(this, "Please enter both Name and CGPA",
Toast.LENGTH_SHORT).show();
            return;
        }

        String data = "Name: " + name + "\nCGPA: " + cgpa + "\n\n";

                                                                                if
(Environment.getExternalStorageState().equals(Environment.MEDIA_MOUNTED)
) {
            File sdCard = Environment.getExternalStorageDirectory();
            File folder = new File(sdCard, "StudentData");
            if (!folder.exists()) {
                folder.mkdirs();
            }

            File file = new File(folder, "student_info.txt");

            try {
                FileOutputStream fos = new FileOutputStream(file, true); // Append mode
                fos.write(data.getBytes());
                fos.close();
                            Toast.makeText(this, "Saved to:\n" + file.getAbsolutePath(),
Toast.LENGTH_LONG).show();
            } catch (IOException e) {
                e.printStackTrace();
                Toast.makeText(this, "Error writing file", Toast.LENGTH_SHORT).show();
            }
        } else {
                                    Toast.makeText(this, "SD Card not mounted",
Toast.LENGTH_SHORT).show();
        }
    }
}
```


Output



Result:

The application successfully writes the student's Name and CGPA to a text file on the SD card using a single screen interface in Android.