

Androidmanifest.xml

```
<manifest
xmlns:android="http://schemas.android.com/apk/res/andr
oid" package="com.example.exe04_test04">
<application
android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
android:label="@string/app_name"
android:roundIcon="@mipmap/ic_launcher_round"
android:supportRtl="true"
android:theme="@style/Theme.AppCompat.Light.NoAct
ionBar">
<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> <uses-permission
android:name="android.permission.INTERNET" />
</manifest>
```

MainActivity.java

```
package com.example.exe04_test04;
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;
import java.io.IOException;
import java.util.List;
public class MainActivity extends AppCompatActivity {
    private EditText rollNoInput;
    private Button fetchButton;
    private TextView studentInfo;
    private GoogleSheetsClient sheetsClient;
    private final String SPREADSHEET_ID =
        "1i3tgnRsItIumf8CCDICdSXNv9UN89gmIO3axePuLD
        k4";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        rollNoInput = findViewById(R.id.rollno_input);
        fetchButton = findViewById(R.id.fetch_button);
        studentInfo = findViewById(R.id.student_info);
        sheetsClient = new GoogleSheetsClient(this);
        fetchButton.setOnClickListener(new
            View.OnClickListener() {
                @Override
                public void onClick(View v) {
                    fetchStudentDetails(); } });
        private void fetchStudentDetails() {
            String rollNumber =
                rollNoInput.getText().toString().trim();
            if (rollNumber.isEmpty()) {
                studentInfo.setText("Please enter a roll number.");
                return; }
```

```
new Thread() -> {
    try {
        List<Student> students =
            sheetsClient.readStudentsData(SPREADSHEET_ID,
                "Sheet1!A:N");
        Student foundStudent = null;
        for (Student student : students) {
            if (student.rollNo.equals(rollNumber)) {
                foundStudent = student;
                break; } }
        if (foundStudent != null) {
            StringBuilder result = new StringBuilder();
            result.append("Roll No:
                ").append(foundStudent.rollNo).append("\n")
                .append("Name:
                ").append(foundStudent.name).append("\n")
                .append("Address:
                ").append(foundStudent.address).append("\n")
                .append("Father's Mobile:
                ").append(foundStudent.fatherMobileNumber).append("\n")
                .append("Mother's Mobile:
                ").append(foundStudent.motherMobileNumber).append("\n")
                .append("Personal Mobile:
                ").append(foundStudent.personalMobileNumber).append("\n")
                .append("Sem 1 GPA:
                ").append(foundStudent.sem1GPA).append("\n")
                .append("Sem 2 GPA:
                ").append(foundStudent.sem2GPA).append("\n")
                .append("Sem 3 GPA:
                ").append(foundStudent.sem3GPA).append("\n")
                .append("Sem 4 GPA:
                ").append(foundStudent.sem4GPA).append("\n")
                .append("CGPA:
                ").append(foundStudent.cgpa).append("\n")
                .append("Govt or Management:
                ").append(foundStudent.govtOrManagement).append("\n")
                .append("Day Scholar or Hosteler:
                ").append(foundStudent.dayScholarOrHosteler).append("\n")
                .append("Community:
                ").append(foundStudent.community).append("\n");
            runOnUiThread() ->
                studentInfo.setText(result.toString());
        } else {
            runOnUiThread() -> studentInfo.setText("No student
                found with roll number " + rollNumber); } } catch
            (IOException e) {
                e.printStackTrace();
                runOnUiThread() -> studentInfo.setText("Error
                retrieving data: " + e.getMessage());
            } catch (Exception e) {
                e.printStackTrace();
                runOnUiThread() -> studentInfo.setText("An
                unexpected error occurred: " + e.getMessage());
            }
        }.start();
    }
}
```

GoogleSheetsClient

```
package com.example.exe04_test04;
import android.content.Context;
import android.util.Log;
import
com.google.api.client.googleapis.javanet.GoogleNetHttp
Transport;
import com.google.api.client.json.JsonFactory;
import com.google.api.client.json.gson.GsonFactory;
import com.google.api.services.sheets.v4.Sheets;
import
com.google.api.services.sheets.v4.model.ValueRange;
import com.google.api.services.sheets.v4.SheetsScopes;
import
com.google.api.client.googleapis.auth.oauth2.GoogleCre
dential;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.security.GeneralSecurityException;
import java.util.ArrayList;
import java.util.Collections;
import java.util.List;
public class GoogleSheetsClient {
    private static final String APPLICATION_NAME =
        "StudentDatabaseApp";
    private static final JsonFactory JSON_FACTORY =
        GsonFactory.getDefaultInstance();
    private Sheets sheetsService;
    public GoogleSheetsClient(Context context) {
        try {
            InputStream serviceAccountStream =
                context.getResources().openRawResource(R.raw.credent
                    ials);
            GoogleCredential credential =
                GoogleCredential.fromStream(serviceAccountStream)
                    .createScoped(Collections.singleton(SheetsScopes.SPRE
                        ADSHEETS));
            sheetsService = new
                Sheets.Builder(GoogleNetHttpTransport.newTrustedTran
                    sport(), JSON_FACTORY, credential)
                    .setApplicationName(APPLICATION_NAME)
                    .build();
            Log.i("GoogleSheetsClient", "Sheets service initialized
                successfully");
        } catch (GeneralSecurityException e) {
            Log.e("GoogleSheetsClient", "Security exception: " +
                e.getMessage());
        } catch (IOException e) {
            Log.e("GoogleSheetsClient", "IO exception: " +
                e.getMessage());
        } catch (Exception e) {
            Log.e("GoogleSheetsClient", "Error initializing Sheets
                API: " + e.getMessage());
        }
    }
    public List<Student> readStudentsData(String
        spreadsheetId, String range) throws IOException {
        ValueRange response =
            sheetsService.spreadsheets().values()
                .get(spreadsheetId, range)
                .execute();
        List<List<Object>> values = response.getValues();
```

```
List<Student> students = new ArrayList<>();
if (values != null && !values.isEmpty()) {
    for (List<Object> row : values) {
        if (row.size() >= 14) { // Ensure there are enough
            columns
            String rollNo = row.get(0).toString();
            String name = row.get(1).toString();
            String address = row.get(2).toString();
            String fatherMobileNumber = row.get(3).toString();
            String motherMobileNumber = row.get(4).toString();
            String personalMobileNumber = row.get(5).toString();
            double sem1GPA = parseDouble(row.get(6));
            double sem2GPA = parseDouble(row.get(7));
            double sem3GPA = parseDouble(row.get(8));
            double sem4GPA = parseDouble(row.get(9));
            double cgpa = parseDouble(row.get(10));
            String govtOrManagement = row.get(11).toString();
            String dayScholarOrHosteler = row.get(12).toString();
            String community = row.get(13).toString();
            students.add(new Student(rollNo, name, address,
                fatherMobileNumber, motherMobileNumber,
                personalMobileNumber, sem1GPA, sem2GPA,
                sem3GPA, sem4GPA, cgpa,
                govtOrManagement, dayScholarOrHosteler,
                community));
        }
    }
    return students;
}
private double parseDouble(Object value) {
    if (value == null || value.toString().trim().isEmpty()) {
        Log.e("GoogleSheetsClient", "Value is null or empty,
            returning 0.0");
        return 0.0;
    }
    try { return Double.parseDouble(value.toString().trim());
    } catch (NumberFormatException e) {
        Log.e("GoogleSheetsClient", "Invalid number format for
            value: " + value);
        return 0.0; // Return a default value or handle it as needed
    }
}
```

Student

```
package com.example.exe04_test04;
public class Student {
    public String rollNo;
    public String name;
    public String address;
    public String fatherMobileNumber;
    public String motherMobileNumber;
    public String personalMobileNumber;
    public double sem1GPA;
    public double sem2GPA;
    public double sem3GPA;
    public double sem4GPA;
    public double cgpa;
    public String govtOrManagement;
    public String dayScholarOrHosteler;
    public String community;
    public Student(String rollNo, String name, String
        address, String fatherMobileNumber,
        String motherMobileNumber, String
        personalMobileNumber, double sem1GPA,
        double sem2GPA, double sem3GPA, double sem4GPA,
        double cgpa, String govtOrManagement, String
        dayScholarOrHosteler, String community) {
        this.rollNo = rollNo;
```

```

this.name = name; this.address = address;
this.fatherMobileNumber = fatherMobileNumber;
this.motherMobileNumber = motherMobileNumber;
this.personalMobileNumber = personalMobileNumber;
this.sem1GPA = sem1GPA;
this.sem2GPA = sem2GPA;
this.sem3GPA = sem3GPA;
this.sem4GPA = sem4GPA;
this.cgpa = cgpa; this.govtOrManagement =
govtOrManagement;
this.dayScholarOrHosteler = dayScholarOrHosteler;
this.community = community; } }

```

Activity_Main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
xmlns:android="http://schemas.android.com/apk/res/andr
oid"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="16dp"
    android:background="@color/background">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/enter_roll_number"
        android:textSize="18sp"
        android:layout_marginBottom="8dp"/>

```

```

<EditText
    android:id="@+id/rollno_input"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Roll Number"
    android:inputType="number"
    android:layout_marginBottom="16dp"/>

```

```

<Button
    android:id="@+id/fetch_button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/fetch_student_details"/>

```

```

<TextView
    android:id="@+id/student_info"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:textSize="16sp"
    android:textColor="@color/textColor"/>

```

```

<include
    layout="@layout/footer_layout"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_alignParentBottom="true" />

```

```

</LinearLayout>

```

9:52



Enter Roll Number:

221501511

FETCH STUDENT DETAILS

Roll No: 221501511

Name: YOGESWARAN S

Address: D.4 RAJENDIRA CHOLAN APARTMENT
THIRUVALLUVAR SALAI W.K.K.NAGAR CHENNAI
600078

Father's Mobile: 9382854805

Mother's Mobile: 9840873211

Personal Mobile: 8807007475

Sem 1 GPA: 7.41

Sem 2 GPA: 7.41

Sem 3 GPA: 7.41

Sem 4 GPA: 7.41

CGPA: 7.41

Govt or Management: GOVERNMENT

Day Scholar or Hosteler: DAY SCHOLAR

Community: MBC

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