

```
1 package com.example.assignment3;
2
3 import androidx.appcompat.app.AppCompatActivity;
4
5 import android.content.Intent;
6 import android.os.Bundle;
7 import android.view.View;
8 import android.widget.Button;
9 import android.widget.EditText;
10 import android.widget.Toast;
11
12 import java.text.DecimalFormat;
13
14 public class GpaActivity extends AppCompatActivity implements View.OnClickListener {
15
16     private EditText
17     grade1Input, grade2Input, grade3Input, grade4Input, pointShow, creditShow, gpaShow;
18     private Button calculateGpaButton, backButtonMain3, btnResetButton3;
19
20     @Override
21     protected void onCreate(Bundle savedInstanceState) {
22         super.onCreate(savedInstanceState);
23         setContentView(R.layout.activity_gpa);
24
25         grade1Input = (EditText) findViewById(R.id.grade1Input);
26         grade2Input = (EditText) findViewById(R.id.grade2Input);
27         grade3Input = (EditText) findViewById(R.id.grade3Input);
28         grade4Input = (EditText) findViewById(R.id.grade4Input);
29
30         pointShow = (EditText) findViewById(R.id.pointShow);
31         creditShow = (EditText) findViewById(R.id.creditShow);
32         gpaShow = (EditText) findViewById(R.id.gpaShow);
33
34         calculateGpaButton = (Button) findViewById(R.id.calculateGpaButton);
35         calculateGpaButton.setOnClickListener(this);
36
37         backButtonMain3 = (Button) findViewById(R.id.backButtonMain3);
38         backButtonMain3.setOnClickListener(this);
39
40         btnResetButton3 = (Button) findViewById(R.id.btnResetButton3);
41         btnResetButton3.setOnClickListener(this);
42
43         pointShow.setEnabled(false);
44         creditShow.setEnabled(false);
45         gpaShow.setEnabled(false);
46     }
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60  @Override
61  public void onClick(View v) {
62      if (v == calculateGpaButton) {
63          calculateGpa();
64      } else if (v == backButtonMain3) {
65          Toast.makeText(this, "Back Main Program", Toast.LENGTH_SHORT).show();
66          Intent launchMain3 = new Intent( this, MainActivity.class);
67          startActivity(launchMain3);
68      } else if (v == btnResetButton3) {
69          grade1Input.setText("");
70          grade2Input.setText("");
71          grade3Input.setText("");
72          grade4Input.setText("");
73          pointShow.setText("");
74          creditShow.setText("");
75          gpaShow.setText("");
76      }
77  }
78  }
79
80  private void calculateGpa() {
81      // Get grades from EditText fields
82      String grade1 = grade1Input.getText().toString().toUpperCase();
83      String grade2 = grade2Input.getText().toString().toUpperCase();
84      String grade3 = grade3Input.getText().toString().toUpperCase();
85      String grade4 = grade4Input.getText().toString().toUpperCase();
86
87      // Check if any grade field is empty
88      if (grade1.isEmpty() || grade2.isEmpty() || grade3.isEmpty() ||
grade4.isEmpty()) {
89          pointShow.setText("Enter Grade");
90          creditShow.setText("Enter Grade");
91          gpaShow.setText("Enter Grade");
92          return;
93      }
94
95      int creditsPerCourse = 3; // Assuming each course has 3 credits
96
97      // Calculate total grade points
98      float totalGradePoints = getGradePoints(grade1) * creditsPerCourse
99          + getGradePoints(grade2) * creditsPerCourse
100      + getGradePoints(grade3) * creditsPerCourse
101      + getGradePoints(grade4) * creditsPerCourse;
102
103      // Calculate total credits
104      int totalCredits = 4 * creditsPerCourse; // Assuming 4 courses
105
106      // Calculate GPA
107      float gpa = totalGradePoints / totalCredits;
108
109      // Create a DecimalFormat with two decimal places
110      DecimalFormat decimalFormat = new DecimalFormat("0.00");
111
112      // Format the GPA with two decimal places
113      String formattedPoints = decimalFormat.format(totalGradePoints);
114      String formattedCredits = decimalFormat.format(totalCredits);
115      String formattedGpa = decimalFormat.format(gpa);
116
117
118

```

```
119 // Display total points, total credits, and GPA result
120 pointShow.setText("" + formattedPoints);
121 creditShow.setText("" + formattedCredits);
122 gpaShow.setText("" + formattedGpa);
123 }
124
125
126
127
128
129 private float getGradePoints(String grade) {
130     switch (grade) {
131         case "A":
132             return 4.0f;
133         case "B+":
134             return 3.5f;
135         case "B":
136             return 3.0f;
137         case "C+":
138             return 2.5f;
139         case "C":
140             return 2.0f;
141         case "D+":
142             return 1.5f;
143         case "D":
144             return 1.0f;
145         case "F":
146             return 0.0f; // Handle invalid grades
147         default:
148             return 0.0f;
149     }
150 }
151
152 }
```