GPA Calculation

Grade settings: Maximum grade: 100
Disable external file upload, paste and drop external content: Yes
Run: Yes **Evaluate**: Yes
Automatic grade: Yes **Maximum execution time**: 16 s

Ranveer is an engineering student. He wants to calculate his GPA (Grade Point Average) scored in his current semester.

To calculate the GPA, first store the details of the grade scored in all the subjects in a semester and then calculate the GPA based on the grade point.

As a java programmer, help him to do this by writing a java program to develop a GPA calculator.

Component Specification: GPACalculator Class

Type(Class)	Attributes	Methods	Responsibilities
GPACalculator	List<Integer> gradePointList	Include the getter and setter methods for the attribute.	

Requirement 1: Store the grade points scored by a student

When Ranveer gets his semester results, store the grade points scored by him for calculating the GPA.

The addGradePoint method accepts grades obtained as an argument. This method should convert the grade to the appropriate grade point and add it to the gradePointList.

Grade point is set based on the grade obtained as shown below.

Grade	S	A	B	C	D	E
Grade Point	10	9	8	7	6	5

Grade is case sensitive.

Component Specification: GPACalculator Class

Component Name	Type (Class)	Methods	Responsibilities
Add the grade points obtained by the student to the gradePointList	GPACalculator	public void addGradePoint (char gradeObtained)	This method takes the grade as an argument, converts the grade to the grade point and adds it to the gradePointList.

Requirement 2: Calculate the GPA

Ranveer needs to know his performance level for further up gradation. To know this, the GPA needs to be calculated.

The method calculateGPAScored should calculate the GPA based on the values populated in the gradePointList.

Component Specification: GPACalculator Class

Component Name	Type(Class)	Methods	Responsibilities
Fetch the grade points available in the list and calculate the GPA.	GPACalculator	public double calculateGPAScored ()	This method needs to calculate the GPA based on the values in the gradePointList and return the result. If the gradePointList is empty, then the method should return 0.

The GPA needs to be calculated as:

GPA= (gradePoint1 + gradePoint2 + ... + gradePointN) / (size of List)

Create a Main class with the main method.

Design the menu as described in the Sample Input and Output as:

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

When the choice is 1, get the grade from the user and add it to the gradePointList.

When the choice is 2, display the GPA scored.

The entire program should be executed within a loop. It should not terminate after the completion of a functionality. When the choice provided is 3, it should terminate with a message "Thank you for using the Application".

Please do not use System.exit(0). Instead use a break to terminate the program.

Note:

In the Sample Input / Output provided, the highlighted text in bold corresponds to the input given by the user and the rest of the text represents the output.

Ensure to follow the object oriented specifications provided in the question description.
Ensure to provide the names for the classes, attributes and methods as specified in the question description.

Adhere to the code template, if provided.

Sample Input / Output 1:

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

1

Enter the obtained grade

S

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

1

Enter the obtained grade

A

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

1

Enter the obtained grade

B

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

2

GPA Scored

9.0

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

3

Thank you for using the Application

Sample Input / Output 2:

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

2

No GradePoints available

1. Add Grade

2. Calculate GPA

3. Exit

Enter your choice

3

Thank you for using the Application