German-Malaysian Institute

DIPLOMA PROGRAMME

LAB TASK

Academic Period : JULY 2024

Code	SPG 0453	Course Name	Secured Object Oriented Programming
Title	GRADING SYSTEM	Examiner	Ainin Sofiya Hisham
Name	AISHAH NABILA BINTI MOHAMAD MANSOR	Program/ Group	DSWE3

No	Assessment Criteria	CLO	PO	Level of Diff	Full Marks	Score	Marks	Comment
	Ability to apply required selection statement	2	4	P4	4			
	Ability to apply required looping statement	2	4	P4	4			
	Program execution: Ability to run with correct output-design logic	2	4	P4	5			
	Design of output: Scanner Class & JOptionPane components & arrangement	2	4	P4	4			
	Documentation: Comment / Description	2	4	P4	3			
	Ability to analyze problem and identify requirements (input & output)	2	4	P4	5			
	Ability to demonstrate design solution	2	4	P4	5			
				Total	30			

Total Marks		
Total	PO 4	
Signature		

LAB ASSIGNMENT: REPORT GUIDELINES

1. Introduction
2. System Pseudo-code or Flowchart to represent program algorithm
3. Briefly explain the flow of the system based on several important screenshots of the program output
4. Source Code
5. Conclusion

Grading System (10%)

Develop an interactive java program to:

1. Allow user to insert a sequence of marks based on the number of students inserted by the user earlier. The program should be able to identify the grade for each mark.
2. display the number of student who get grade A, B, C, D and F.
3. identify the number of students who failed and the number who passed
4. Display the number of pass and fail.
5. If students passed more than fail, display “Bonus to instructor” and vice versa.
6. allow user to continue or exit from the program. (Bonus Mark)

Evaluation: Report submission

Dateline: 2024 via GMi VLU

Rules : variables and object name should be unique, apply at least 3 method, comment is compulsory for each of the method, variable or object, apply looping OR selection statement

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Introduction

This system used JOptionPane to create graphical input/output dialogs, basically a pop-up windows. It also uses Scanner to read input from the console. In this system, a loop is used to allow repeated execution, meaning the user can use the system multiple times.

Some variables are use for grade counting. These variables are used to track how many students received each grade and how many passed or failed. The system loops for each student, prompting the user to input their mark. For closing the system, the user can simply types "no" to end the loops.

In this student grading system, the user will to insert the number of students first before the user can insert a sequence of marks. The system will display the number of students who get grade A, B, C, D, and F. It will also show the number of students who failed and the number who passed. The user will get a display "Bonus to Instructor" if the student who is passed more than failed. The user also can easily exit or continue the system.

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Pseudocode

```
START

   Initialize a Scanner for console input (studentGrade)

   DO:
      Display input dialog: "Enter number of students:"
      Read number of students (numStudents)

      Initialize gradeA = 0, gradeB = 0, gradeC = 0, gradeD = 0, gradeF = 0
      Initialize passCount = 0, failCount = 0

      FOR i from 1 to numStudents:
         Display input dialog: "Enter mark for student i:"
         Read student mark (mark)

         IF mark >= 70:
            Increment gradeA by 1
            Increment passCount by 1
         ELSE IF mark >= 60:
            Increment gradeB by 1
            Increment passCount by 1
         ELSE IF mark >= 50:
            Increment gradeC by 1
            Increment passCount by 1
         ELSE IF mark >= 40:
            Increment gradeD by 1
            Increment passCount by 1
         ELSE:
            Increment gradeF by 1
            Increment failCount by 1
         END IF

      END FOR
```


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```
        Create a string gradeFinalization with counts of A, B, C, D, F grades

        Create a string passFailSummary with total passCount and failCount

        IF passCount > failCount:
            Set resultMessage = "Bonus to instructor!"
        ELSE:
            Set resultMessage = "More students failed."
        END IF

        Combine gradeFinalization, passFailSummary, and resultMessage into finalMessage

        Display finalMessage in console or message dialog

        Display input dialog: "Do you want to continue? (yes to continue, no to exit):"
        Read user choice (choice)

    WHILE choice is "yes"

    Close the Scanner

    Display message dialog: "Program exited."

END
```


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Flow of the system

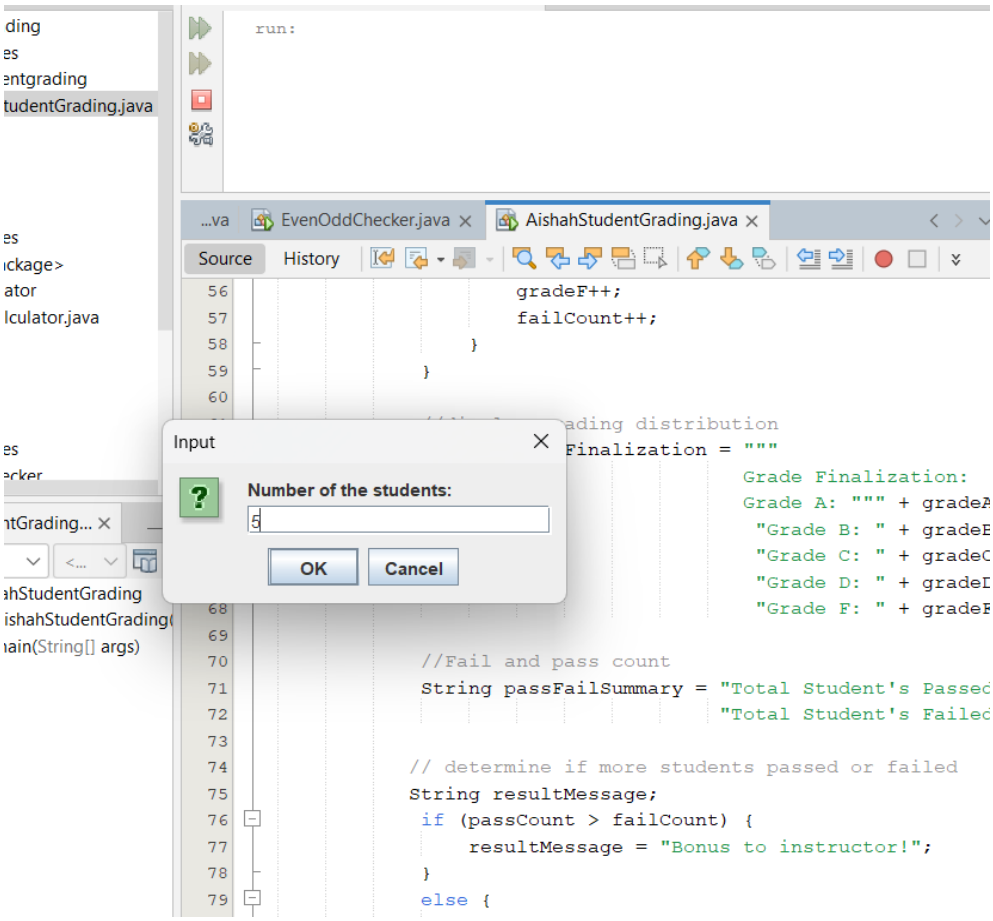

Figure 1 input the number of students

Firstly, the user needs to enter the number of students. Example: 5. Then, click ok.

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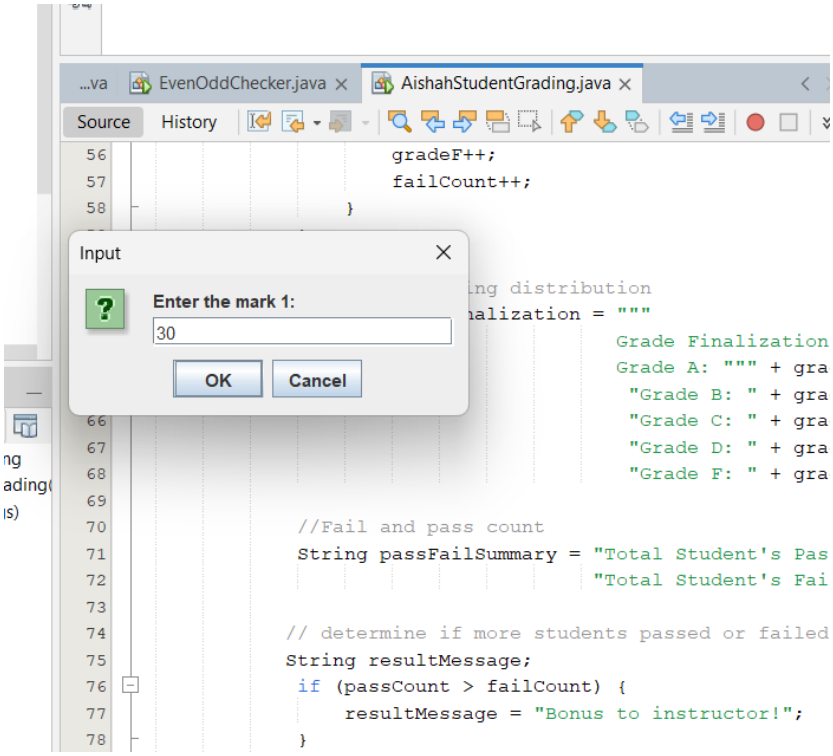

Figure 2 input the students mark

Next, proceed to insert the mark of the students until the number of students.

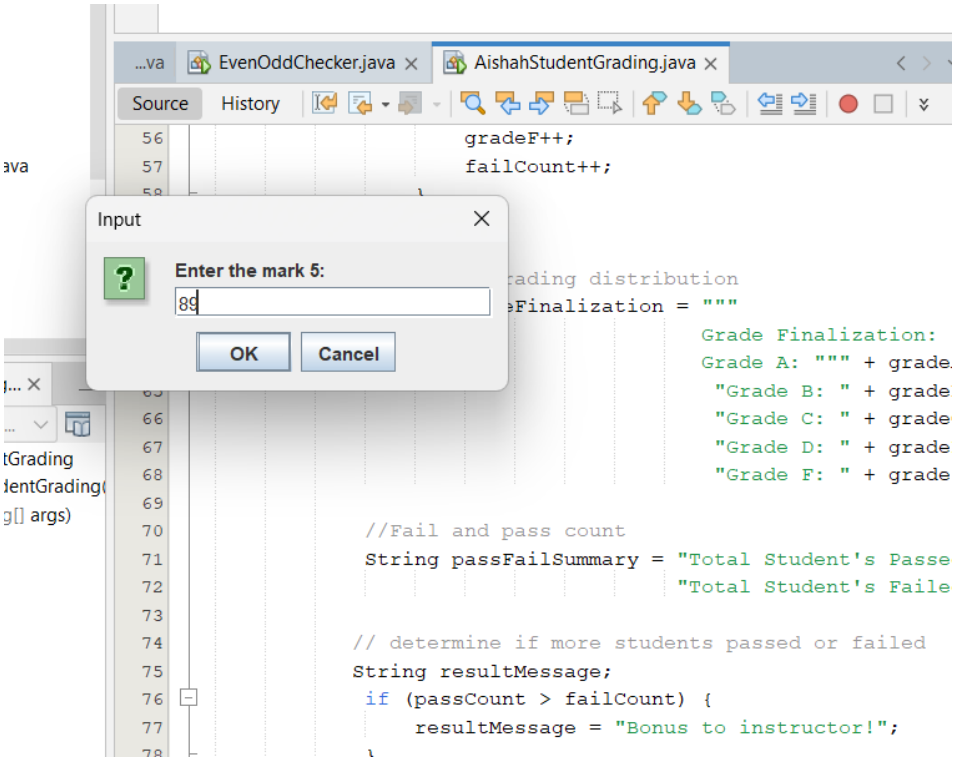

Figure 3 input the mark for the 5th student

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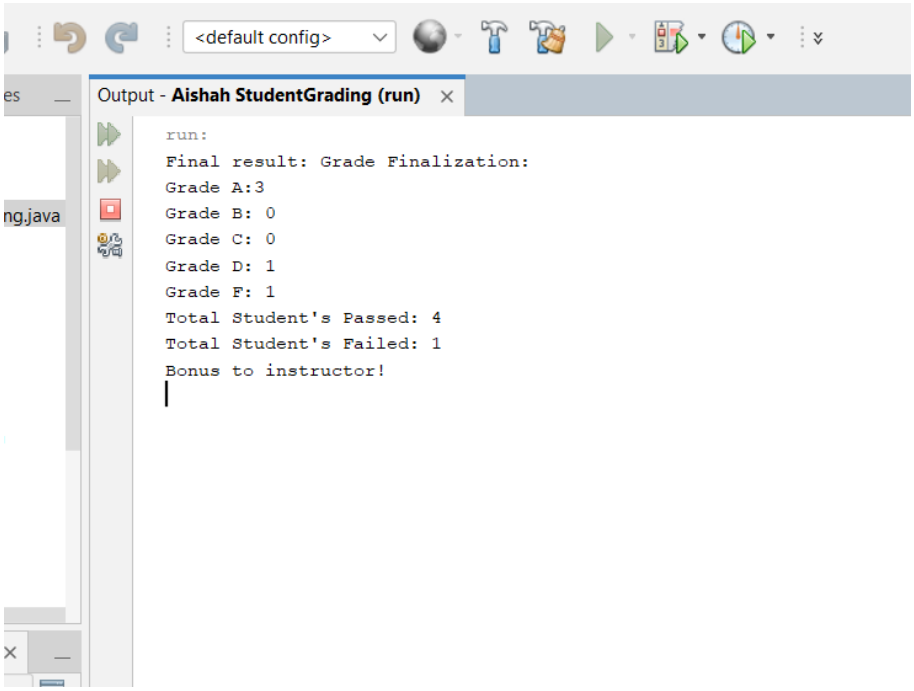

Figure 4 console that shows the results

After the user click ok, the console display will show up. It will display the Grade finalization. How many students passed and how many students failed.

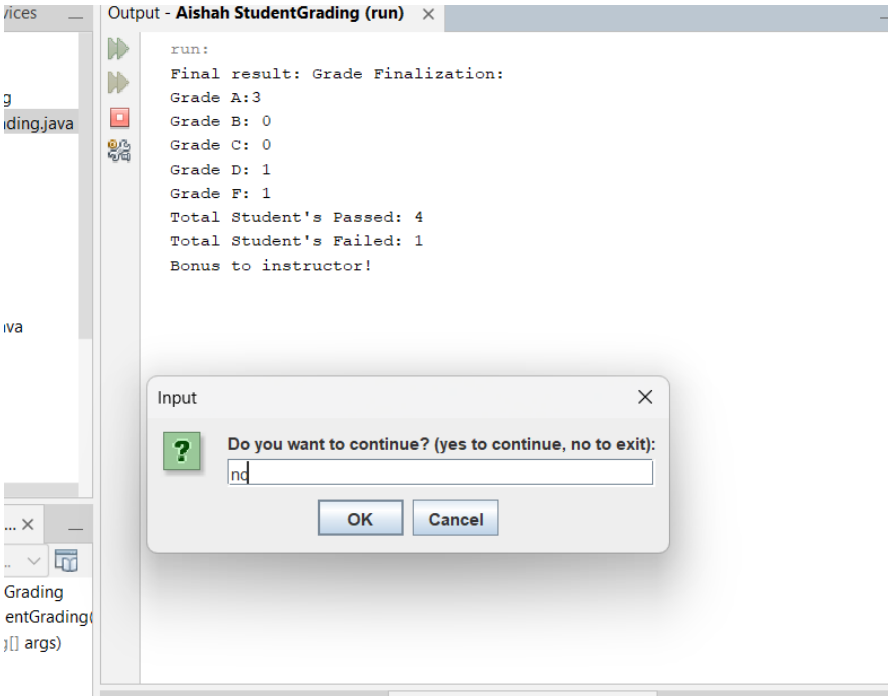

Figure 5 pop up to continue or exit the system

The user will press "enter" button and a pop-up will show up and ask if the user wants to continue the system or exit.

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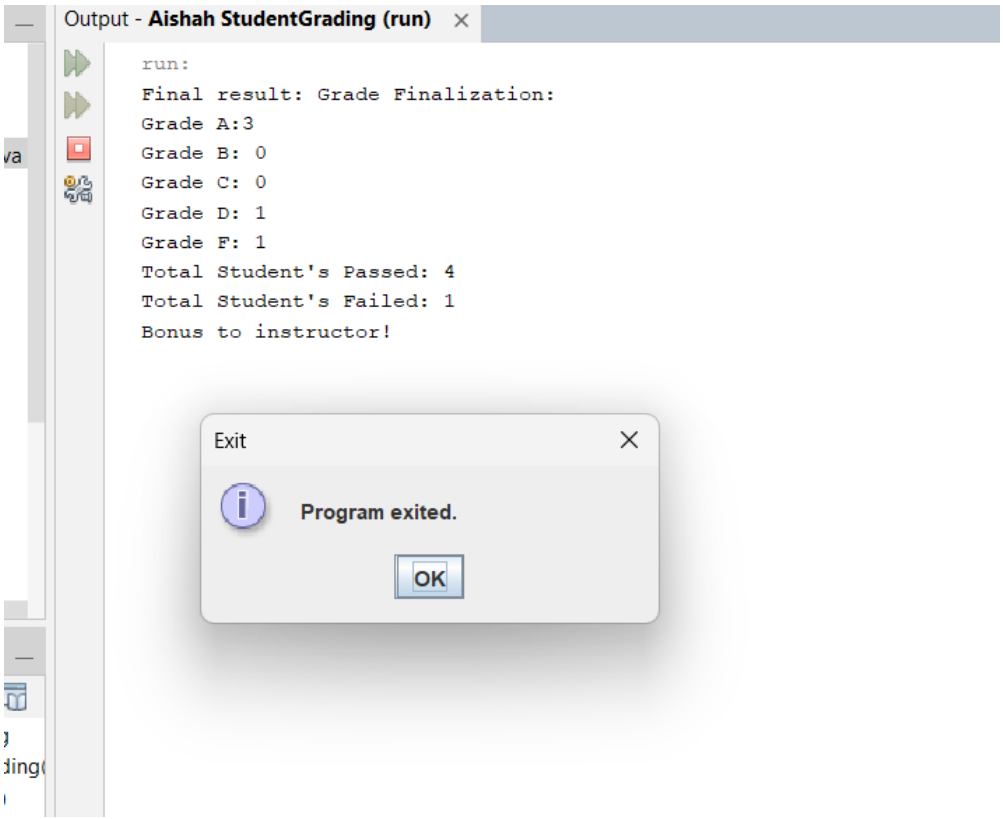

Figure 6 exit system message

If the user wishes to exit, just types "no" and the next pop-up display will show the exit massage. Just click "ok" and the program will end.

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Conclusion

The student grading system provides an easy interface through JOptioPane pop-up dialogs and utilizes a loop to facilitate repeated usage. The system efficiently handles input by allowing the user to first specify the number of students and then input each student's mark. Based on the marks entered, the system classifies the students into grades (A, B, C, D, F) and determines how many passed or failed. It then presents a summary of the results, including a message of encouragement ("Bonus to Instructor") if more students pass than fail. The user can choose to continue entering a new data or exit the system by simply typing "no". This makes the grading system easy to use for the user.

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