

Write a complete Java program that will prompt the user for a series of exam grades (integer) and print out a summary report of the number of As, Bs, Fs, invalid grades, the total number of grades read in and the percentage of each category of grades. When calculating the percentage of each category of grades, consider the valid grades only. Output the percentages formatted to 2 decimal places.

To terminate the program the user is prompted to enter a negative grade.

A grade from 0 to 65 inclusive is an F, 66 to 75 inclusive is a B, 76 to 100 inclusive is an A, and grades greater than 100 are invalid.

If the user enters a negative number right away there are no grades to process; output message to that effect. (see figure 1)

Here are a few sample output screens to illustrate the expected behaviour of your program:

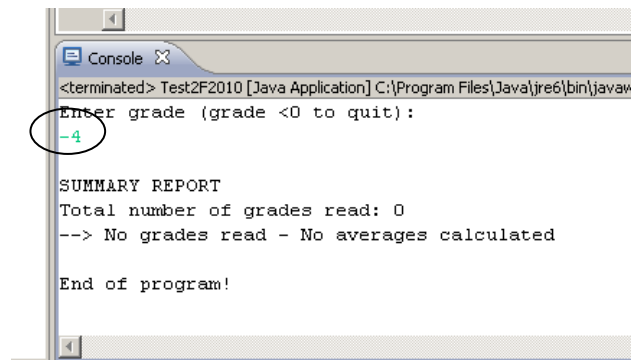


Figure 1 - User entered a negative number right away

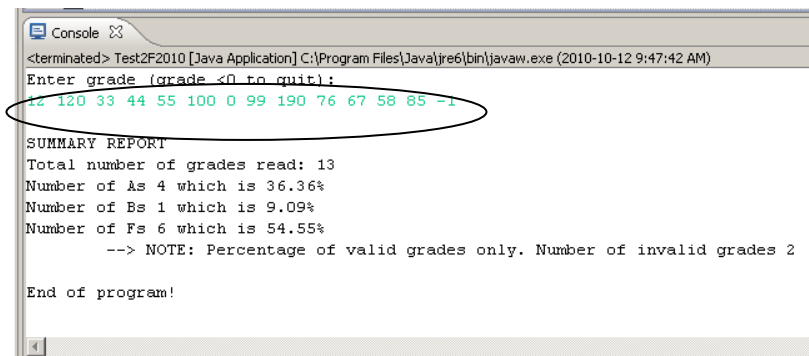
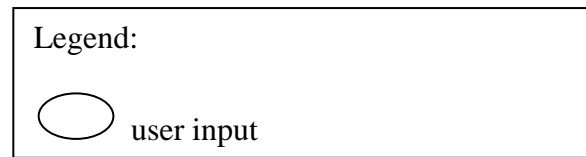


Figure 2 - Normal run

```
/*
 * COMP248/Fall 2010
 * One possible solution to Term Test 2
 * Created on 2010-10-12
 */

import java.util.Scanner;
public class Test2F2010 {
    public static void main(String[] args) {
        //Declare variables
        Scanner keyIn = new Scanner(System.in);
        int count = 0;           // number of grades read
        int numOfA = 0;         // num of As
        int numOfB = 0;         // num of Bs
```

```

int numOfF = 0;          // num of Cs
int numOfInvalid = 0;  // num of invalid grades (>100)
int grade;             // last grade read in

// Prompt user for a first grade
System.out.println("Enter grade (grade <0 to quit): ");
grade = keyIn.nextInt();

// As long as grade is >= 0 process and read next grade
while (grade >=0)
{
    count++;
    if (grade >100)
        numOfInvalid++;
    else if (grade > 75)
        numOfA++;
    else if (grade > 65)
        numOfB++;
    else
        numOfF++;
    grade = keyIn.nextInt();
} // end of while loop

// Show results
System.out.println("\nSUMMARY REPORT\nTotal number of grades read: " + count);
if (count > 0) // if have at least one grade
{
    count -= numOfInvalid; // considering valid grades only when calculating %
    System.out.print("Number of As " + numOfA + " which is ");
    System.out.printf("%.2f", 100.0*numOfA/count);
    System.out.println("%");
    System.out.print("Number of Bs " + numOfB + " which is ");
    System.out.printf("%.2f", 100.0*numOfB/count);
    System.out.println("%");
    System.out.print("Number of Fs " + numOfF + " which is ");
    System.out.printf("%.2f", 100.0*numOfF/count);
    System.out.println("%\n\t--> NOTE: Percentage of valid grades only. Number of"
        + " invalid grades " + numOfInvalid);
}
else // no grades read in
    System.out.println("--> No grades read - No averages calculated");

// Closing message
System.out.println("\nEnd of program!");
} // end of main()
} // end of class

```