

## **Assignment #7-A**

### **Goals:**

- This lab gives students more experience in
  - Arrays
  - Procedural abstraction using functions and procedures.

### **Requirement:**

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Write a program named `ClassifyScores` that classifies a series of scores entered by the user into ranges (0-9, 10-19, and so forth). The scores will be numbers between 0 and 100.

Design and implement a program to prompt the user to enter each score separately.

- If the score is within the correct range, then increment the appropriate range
- If the score entered is greater than 100, display an error message, ignore the incorrect score, and prompt for the user to enter the next score.
- If the score entered is less than 0, the program should display the result and terminate.

For example, if the user enters 1 score between 20 and 29, 2 scores between 40 and 49, 3 scores between 50 and 59, etc. The program should display the following.

<u>Range</u>	<u>Number of scores</u>
0-9	0
10-19	0
20-29	1
30-39	0
40-49	2
50-59	3
60-69	1
70-79	7
80-89	5
90-100	3

**Hint:** Create an array with 10 elements, one for each range. When each score is entered, increment the appropriate array element. The array index for each range can be calculated by  $(\text{score} / 10)$ . Please note that when the score is 100, the appropriate array index cannot be calculated this way.

**Note:** The user of your program can enter as many scores as (s)he wishes. The user identifies the end by entering a negative number for score; your program then should display the tabulated scores and exit.

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### **Marking Scheme**

[10 marks] Presentation/Style: Organization, readability, descriptive identifier, indentation, bracket placement.

[70 marks] Correctness: Program works without bugs. Appropriate use of methods.

[20 marks] Documentation: Internal and external