

Exercise 3: Random Grade Generator

Date Due: October 15th, 2014

Write a program that asks the user to enter the number of students in his/her class and then calculates and displays number of A's, B's, C's, D's, and F's for the entire class. Each student is graded on the following categories:

- 10 programming Exercises (progEx)
- 1 Midterm (midTerm)
- 1 Final Exam (final)

For each student, use random number generator to generate scores for each category. You need to make sure that the random number generator returns value in the range 1-100 for each of the grade book categories. So for each student you need to calculate their grade using the following formula:

$$\text{numericGrade} = (\text{progEx Average} * .70) + (\text{midTerm} * .15) + (\text{final} * .15)$$

The program needs to compute the letter grade equivalent according to the following chart:

numericGrade (range)	letterGrade
0 – 59	F
60-69	D
70-79	C
80-89	B
90-100	A

Once letter grade has been computed, update the count for that letter grade. When the program finishes the loop, it should display the following information:

Number of students who received each letter grade:

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10    A
14    B
 6    C
 4    D
 4    F
```

Make sure you use programming techniques discussed in class, such as defensive programming, descriptive variable names, named constants, and source code comments. Create a Visio drawing of your logic and submit it along with the source code file (.cpp) as an archive (.ZIP). Name the archive file **Ex.03-LastnameFirstInitial.zip** - (i.e. **Ex.03-ZejnilovicA.zip**) and submit it for grading by clicking on the Attachments button in ANGEL (dropbox).