

COP 2200 Introduction to C

Homework 3

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In this assignment, you are going to turn in **a single** cpp file. Your goal is to determine the final grade given certain threshold values and the score. For example, here is an example for threshold values: 90 up for A, 80 - below 90 for B, 70 - below 80 for C, and below 70 for F. Here we can think of 90, 80, 70 as the threshold values. Under these values, if your grade is 86, then your final grade is B.

In this assignment, we consider the case where there are only 4 possible grades: A, B, C, and F, so we need 3 integers to specify the threshold. Next we describe your tasks:

- **Task 1:** write a function to determine whether the input threshold values are valid. The function takes inputs 3 integers a, b, c and returns a boolean value (true/false). In particular, it checks whether $100 > a > b > c > 0$. If the condition is true, then return **true**. Otherwise, return **false**.
- **Task 2:** write a function that takes input a threshold and a score, and then returns the grade. (Think about what output data type you should use). In particular, the function takes inputs 4 integers a, b, c and g . The first three numbers represent the threshold, and the last represents the score. Then the function first checks whether the input threshold values are valid. If not, return a character 'N'; if valid, then return the final grade.
- **Task 3:** Inside the main function, you print “Enter the values of threshold for A,B,C, and F” on the first line, and then the user inputs 3 integers. Then print “What is your grade?” on the next line, followed by a user input (for an integers). On the next line, print either “The threshold is not valid.” or “Your final grade is X.”, where X depends on the threshold and your grade.

Task 2 should use Task 1 (do not re-write codes!)