San José State University
Department of Computer Engineering

CMPE 180-92

Data Structures and Algorithms in C++

Fall 2017

Instructor: Ron Mak

Assignment #2

Assigned:	Thursday, August 31
Due:	Thursday, September 7 at 5:30 PM
CodeCheck:	(to be determined)
Canvas:	Assignment 2. Functional Decomposition
Points:	100

Functional decomposition

This assignment will give you practice doing a functional decomposition.

As suggested by the program outline in CodeCheck for Assignment #1, the program **WateringPlans.cpp** consisted of one large main function. For anything other than a trivial program, writing only one large main function is nearly always poor design.

Rewrite the solution to Assignment #1, but this time implement a design that shows good functional decomposition, as demonstrated in class. Start with your solution to the first assignment. If your solution to that assignment did not produce the right results, you should first fix it by studying the sample solution at http://www.cs.sjsu.edu/~mak/CMPE180-92/assignments/1/solution/WateringPlans.cpp. Your revised program for this assignment should read the same input and produce the same output as before.

A good decomposition is hierarchical. Choose meaningful function names. Do not use global variables. Follow the convention shown in the Savitch textbook: Place function declarations before the main, and the function definitions after the main.

Academic integrity

You may study together and discuss the assignments, but what you turn in must be your individual work. Assignment submissions will be checked for plagiarism using Moss (http://theory.stanford.edu/~aiken/moss/). **Copying another student's program or sharing your program is a violation of academic integrity.** Moss is not fooled by renaming variables, reformatting source code, or re-ordering functions.

Violators of academic integrity will suffer severe sanctions, including academic probation. Students who are on academic probation are not eligible for work as instructional assistants in the university or for internships at local companies.

Submission into Canvas

When you're satisfied with your program in CodeCheck, click the "Download" link at the very bottom of the Report screen to download a signed zip file of your solution. Submit this zip file into Canvas. You can submit as many times as you want until the deadline, and the number of submissions will not affect your score. Only your last submission will be graded.

Note: Input file **`counts.txt`** has already been uploaded into CodeCheck.

Submit the signed zip file from CodeCheck into Canvas:
Assignment 2. Functional Decomposition.

Note: You must submit the signed zip file that you download from CodeCheck, or your submission will not be graded. Do not rename the zip file.

Rubric

Your program will be graded according to these criteria:

Criteria	Maximum points
Good output (as determined by CodeCheck) • Correct output values. • Correct output format.	**20** • 10 • 10
Good program design • Hierarchical functional decomposition. • Well-designed functions (parameters, statements, etc.) • Meaningful function names. • No global variables.	**55** • 15 • 20 • 15 • 5
Good program style • Descriptive variable names. • Meaningful comments. • Follows the coding style (formatting, braces, indentation, etc.) of the Savitch textbook. • Function declarations before the main and function definitions after the main.	**25** • 5 • 5 • 5 • 10