

CSCI-1200 Data Structures — Spring 2020

Lab 9 — Maps

Reminder: The contents of the lab will not be graded, only whether or not you submit lab-related code. You can safely ignore any requirements that say things like “explain to a TA”, though for completeness, you may want to write your answers in a plaintext file (e.g. *.txt*) and submit them as well.

This lab gives you practice initial practice in working with the STL associative container, maps. No downloads are needed until Checkpoint 3.

Checkpoint 1

estimate: 10-20 minutes

Write a program from scratch that uses a `map` to find **all** the modes in an input sequence of integers. Remember, a mode is an integer that occurs at least as many times in the sequence as any other integer. Thus, in the sequence

19 83 -12 83 65 19 45 -12 45 19 45

the two modes are 19 and 45. Include one command-line argument to provide an input file. Use `operator[]` for maps when inserting values.

To complete this checkpoint: show a TA your debugged implementation and how it runs correctly on several interesting test cases.

Checkpoint 2

estimate: 10-20 minutes

Rewrite your program from checkpoint 1 to use `find` or `insert` or both instead of `operator[]`.

To complete this checkpoint: show a TA your revised and tested program.

Checkpoint 3 will be available at the start of Wednesday’s lab period.