

# CSCI-1200 Data Structures — Fall 2022

## Lab 9 — Maps

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

Checkpoint 3 will be available for download from the Submitty  
Course Materials page at the start of Wednesday's lab:

[https://submitty.cs.rpi.edu/courses/f22/csci1200/course\\_materials](https://submitty.cs.rpi.edu/courses/f22/csci1200/course_materials)