

CSCI-1200 Computer Science II — Fall 2006

Lab 6 — MP3 Maps & String Manipulation

Checkpoint 1

The first checkpoint of this lab gives you practice working with maps and understanding and modifying code written by someone else. Please download the MP3 code we discussed in lecture on Friday:

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http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/main.cpp
http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/computer.h
http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/computer.cpp
http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/mp3.h
http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/mp3_input.txt
http://www.cs.rpi.edu/academics/courses/fall06/cs2/labs/06_maps_strings/mp3_output.txt
```

and then turn off your internet connection. Re-familiarize yourself with the code, then compile and run it with the sample input provided. Refer to the diagram we created in lecture showing how the data is organized.

Complete the implementation of the final operation, finding all songs by a particular artist that are available on the network. Use the diagram to help you write this code. Run the code on the provided input and make up your own interesting test to be sure your code is debugged.

To complete this checkpoint: Show a TA your debugged program and be prepared to discuss the order notation for this operation in terms of n , the number of computers on the network, and m , the maximum number of songs per computer. How could we re-engineer the system if the performance of finding all the songs by a particular artist was critical?

Checkpoint 2

Write a function that takes in 2 strings that represent the names of 2 people and returns true if the names match and false otherwise. The match function should ignore capitalization, extra whitespace, and the presence of middle initials. If both strings have a middle initial and they are different, the function should return false. A middle initial is defined as either a single character or a single character followed by a period. Some examples:

"Sally A. Jones"	<i>matches</i>	"	SALLY	JONES	"
"Sally A. Jones"	<i>matches</i>	"	SALLY a	JONES	"
"Sally A. Jones"	<i>does not match</i>	"	SALLY R	JONES	"

Create at least 5 new interesting test cases that demonstrate your debugged program. Create at least one test case for which the the program requirements are under-specified or ambiguous. What does your program do?

To complete this checkpoint: Show a TA your debugged program and test cases.