

CS170 Week 5 Lecture 2 Notes

Disclaimer: These notes are meant to be read in parallel with Professor Mead's online notes if you have missed class. Topics will not be covered extensively. You will only see the minor details Prof. Mead spoke about which were not thoroughly expressed in his topic notes.

Pre-Class Mentions/Q&A

- ➔ The first homework assignment has been put into the return folders
- ➔ The homework will be in the cs170s16 folder with no letter on it
- ➔ When the TA's have graded the assignments, the annotated versions will be uploaded
- ➔ First, look for the report file to see that everything went fine in the tests
- ➔ If your DrMemory/Valgrind file is empty, you passed the memory debugging tests
- ➔ For the TA graded version, look for Ocean-annotated.cpp
- ➔ Thursday at 7pm, two TA's will be in Al-Khwarizmi to help with DrMemory problems
- ➔ The `#ifndef WARBOATS_H` line is there to make sure the header file doesn't get included twice, in case you were wondering. More info on this in the textbook, beginning of Chapter 9

More Classes (Continued)

Member Initialization List

(In Case of Quiz): Know how to tell if a constructor is considered a default constructor.
Splitting an initializer list over multiple lines in order to comment each member is helpful.
The order that you declare members in a class is the order they should have in an initializer list.
Not all compilers will warn you if you initialize incorrectly.

How to Use Valgrind/DrMemory (terminal prompt text in *italics*)

First things first, build the cpp file.

(For the following lines, this is a single hyphen. “ - “ This is two hyphens. “ – “)

```
valgrind -q(for quiet) ./leaks64 1
```

```
cat command.txt (use this to see the commands you can use with valgrind)
```

```
valgrind -q --leak-check=full --show-reachable=yes --tool=memcheck ./leaks64
```

```
drmemory -show_reachable --leaks32 1
```

Even More Classes

Default Class Behavior:

There are copy assignments and move assignments. We don't need to know the difference very well yet.
You have to write your own assignment operator in order to not have the members initialized for you.

(Ctrl+f “Default Assignment Operator”)

Unless you write your own assignment operator, the compiler will make one for you.

A shallow copy is when you copy something and still have pointers to the original data.

A deep copy makes an entirely separate copy of the items.

Don't ever call the assignment operator from the copy constructor or call the copy constructor from the assignment operator.

The destructor is the last thing that will execute in your object.

Lab #5 Info/Post Lecture Mentions

- ➔ Due at midnight Wednesday February 10th
- ➔ This is another low impact week for CS170
- ➔ Cozy ½ hour on this lab
- ➔ We no longer need to call free list function because we have destructors which the compiler will call when the list goes out of scope