

“How I learned to stop worrying and love the valgrind.”

Coming into CS202 I felt very comfortable with GDB. I could step through my code and find my errors, and since then I've become more proficient. But I've had trouble with memory leaks since we first started utilizing dynamic memory in CS163. I had pretty much resigned myself to taking a 5% grade hit due to memory leaks. But now, I finally kind of understand valgrind at least a little bit.

Valgrind is an application specifically designed to assist with memory management. It will show how many blocks of memory have been lost and errors or warnings associated with memory. Even as I was getting better about deleting/freeing memory that I had allocated, I was still getting double free errors and having trouble. Valgrind, specifically with flags `==leak-check=full`, give great detail about what memory was lost and where.

Not only will it show where the memory was lost, but it will show the path that the object took through the application. This is particularly helpful when you need to determine when you can actually free the memory. If you try to delete an object and then call it later, you can be subject to a double free error.