Lab 9: Code Checking

Nathan Jarus

July 3, 2017

Introduction

This lab will give you experience using both Valgrind and Clang's code checking tools. Clone the repo down; don't forget to `source symbolizer.sh`!

Problem 0: Various Sundries

1. Write a makefile that will build the code for problems 1 and 2 either normally or with address sanitizer enabled.
   Hint: remember that you can change makefile variables for a specific target and its dependencies.

2. Make a `.gitignore` that ignores any generated files.

Problem 1: Drip, Drip, Drip, Drip

1. Take a look at `prob1.cpp`. It's the linked list problem from last time, with the previous bugs fixed and a new one introduced.

2. Run it in valgrind. What is the problem?

3. Why is this problem occurring? (What memory is being allocated, and what memory is being freed?)

4. Fix the bug and check that your fix is correct.

Problem 2: Use wisely

1. Take a look at `prob2.cpp`.

2. Build `prob2.cpp` with Address Sanitizer.

3. Run it. What is the result?

4. What is the problem?

5. Fix the bug and check that your fix is correct.

Epilogue

Make sure to add and commit your makefile, gitignore, and fixes to the various problems and push your commits to GitLab!