Milestone #5: Optimizations

Overview

For this milestone, your compiler will apply two "optimizations". One would typically apply these optimizations on the ILOC, but you may choose to do them on the assembly instructions (but do so before register allocation).

Note that you can complete this milestone even if you have not completed code generation.

Part 1: Copy Propagation

Modify your compiler to implement global copy propagation.

Part 2: Useless Code Elimination

Modify your compiler to implement some form of useless code elimination. You may use any of the techniques discussed. These include removal of instructions that define non-live variables based on live variable analysis, relaxed useless code elimination that assumes all branches are critical, or the more aggressive approach.

Command-line Options

You should provide command-line options to prevent either of the transformations. This will allow you to view the results of each optimization independent of the other (and any others to come).