Homework 4

Posted February 8, Due February 26

50 points

This assignment is a short paper presenting the results of RTA and 0-CFA analyses and contrasting the two approaches. Specifically, your paper will include the following sections:

(1) Introduce the class analysis problem and its applications.
(2) Present and explain the RTA and 0-CFA analyses. You may start with the declarative specification from class and proceed with explanation and interpretation in your own words.
(3) Present the worklist-based implementations of RTA and 0-CFA. Again, include explanation and interpretation in your own words, as well as important detail specific to your implementation.
(4) Next, present results contrasting the two approaches on the 10 toy programs distributed with the assignment. Include numbers for reachable methods and percentages of virtual calls resolved to a single target (include absolute numbers as well). Analyze the results outlining the intuition behind these results.
(5) Finally, conclude with brief suggestions for improvement and ideas for future work.

Requirements: The writeup should be at least 750 words, otherwise it will receive no credit. Other than the word count, we will grade on clarity of presentation and completeness of analysis results (i.e., you need to include, reachable methods as well as numbers for (1) total number of virtual calls in reachable methods, (2) number of resolved calls, and (3) the corresponding percentage, for each one of the 10 toy programs for both RTA and 0-CFA). Please submit a Word file.