

CS 6110 Project Proposal

Project Title: VSComp Verification

Team: Aisha Syed (Working alone)

In this project I plan to take challenge problems from the Verified Software Competition (<http://vscomp.org/>) and try to verify them using the Dafny programming language from Microsoft Research (<http://dafny.codeplex.com>). VSComp usually consists of about five verification problems (with possible sub-problems) that span a range of domains, including sequential and concurrent algorithms, refinement, assertional verification, and metatheory. The solution then includes both coming up with the algorithm that solves the problem and then verifying it using any verification tools or languages like Dafny.

Since the problems can be of arbitrary complexity and I need to learn Dafny too, so currently I'm proposing to verify 5 – 6 problems, I'll add more if possible as I start working on the verification and get some idea of their complexity. So the milestones mentioned below are tentative and are made to roughly coincide with the Calendar events of 'student project updates' posted on the CS 6110 class page.

Mar 11: I plan to have worked through Dafny guide at <http://rise4fun.com>, decided on the problem set I want to verify, and started work on the first one.

Mar 30: Plan to finish half the problems from the selected set.

Apr 20: Plan to finish the other half of the problems from the set and the written report.