Project C.A.S.P. - Weekly Update 11

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1 Development Progress

This week, Ryan and Dylan were able to make significant progress in the midst of a shrinking group. Ryan was able to complete the Translate module in both the Core and Standalone implementations. Ryan was also able to implement the Print module in the Standalone application for testing purposes. Dylan made progress on the Analyze module, but hit a wall while working on logic for the analysis. The team was also able to clean some code up, documented code, added to the C++ and JavaScript grammars, and fixed some bugs.

The Translate module was successfully tested on various snippets of C++ code, showing that a function with a return type, input parameters, a for loop, and several declarations and assignments was able to be translated to JavaScript. As another functional test, the generated JavaScript code was successfully executed in a browser console, with fake function calls replaced with known real ones. That generated JavaScript was also successfully run back through the Translate module to translate it back into C++ source code. Due to JavaScript's generic nature (i.e. typeless variables and functions), JavaScript cannot be fully translated to C++ without fully type-checking the code, so markers are substituted in place of incomplete translations to inform the user that a construct was missing.

The Analyze module has hit a wall, such that most of the logic is complete, however, without knowing the values of variables at the time of analysis, it cannot be determined whether a particular construct runs in constant or variable time. This issue will be addressed in the coming week.

In addition, much more of the grammars for both C++ and JavaScript were completed to allow for a more complete concept.

2 Weekly Tasks

From here on out, the team will collectively work from the remaining pool of tasks, as to help each other tie loose ends. Both Ryan and Dylan will work on the Translate module. Ryan will focus more on analyzing declared variables in order to attempt to calculate their values. Dylan will focus on using this logic

to complete the module. Both members will also clean up and document code, test for and fix bugs, and work on the project document.