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Pittsburgh, PA 15289

March 5, 2015

Mr. Thomas M. Keating
Assistant Teaching Professor
School of Computer Science
Pittsburgh, PA 15289

Dear Mr. Keating:

Included with this letter is our team's proposal for a browser-based debugger for the c0 language called cdb. The purpose of the proposal is to define the need for the debugger and explain our plan of approach.

The proposal includes the problem addressed by our program, explanations of prior literature and work on similar projects, an outline of our plan for designing and implementing the program, the intended benefits of our program, our planned approach, how we will evaluate our success, and our qualifications.

If you have any further questions or comments, please contact us at mplamann@andrew.cmu.edu.

Sincerely,

Mitchell Plamann

encl: project proposal paper for cdb

Final Report

The C0 Debugger

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May 6, 2015

Abstract

Finding problems in code is a difficult and time consuming task, one especially difficult for programmers learning a new language. To help students more quickly find bugs and understand how their programs run, we created an online debugger for the C0 programming language. The C0 debugger enables users to run programs in their browser and break apart the execution when they don't run correctly.

Contents

1 Introduction

2 Approach

3 Results

We originally aimed to evaluate our performance against user feedback from both current and past students. However, due to setbacks in the early stages of development we were unable to receive significant use feedback from students. That said, we were able to gather feedback and support from current 15-122 course staff.

In terms of our original vision, the C0 debugger includes almost every feature we planned to implement. Users can input code and either run the program straight through or step through execution instruction by instruction. The only significant feature that is not currently implemented completely is breakpoints. Implementing breakpoints turned out to be significantly more difficult than we anticipated, and given our limited time frame, we were unable to come up with an adequate solution. We are currently working with Rob Simmons, 15-122 instructor and maintainer for the C0 language standard, to extend the language to support breakpoints more easily going forward.
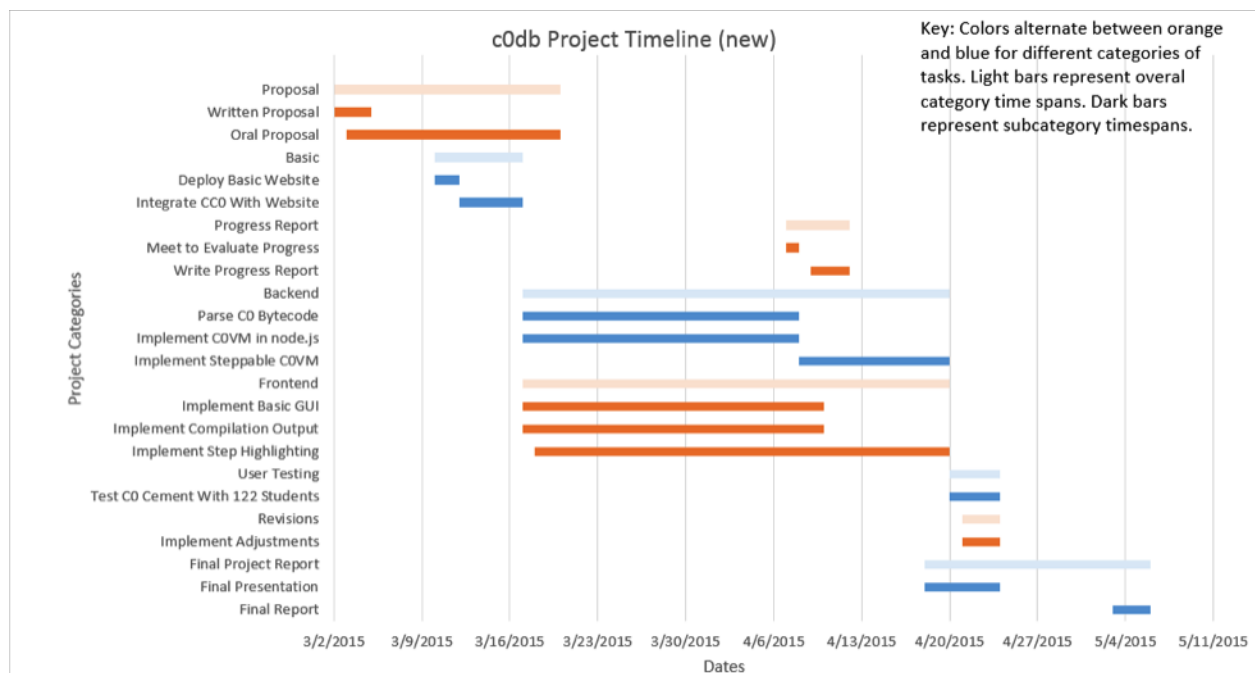

Figure 1: Revised project Gantt chart

Relative to our revised Gantt Chart (Figure 1) we hit every milestone on time. Both the front-end and back-end teams completed their tasks by the end of April, at which point we transitioned everyone to user testing, revisions, and polishing. Both teams were able to recover from the lag reported in our progress report to complete the C0 debugger.

4   Discussion

5   Sources Cited