

5032 Forbes Ave
SMC 2426
Pittsburgh, PA 15289

May 6, 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 final report for the browser-based debugger for the C0 language called c0db, the C0 Debugger. The purpose of the report is to update you on our progress and to explain and discuss our results.

The report describes the problem addressed by our project, our approach to solve it, the results we were able to achieve, our challenges and struggles, the lessons we learned throughout the progress we made, and some recommendations on how we or another group can continue to build on our existing platform.

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

Sincerely,

Shyam Raghavan

encl: project final paper for c0db

Final Report

c0db

The C0 Debugger

Submitted to
Mr. Thomas M. Keating
Assistant Teaching Professor
School of Computer Science
Carnegie Mellon University
Pittsburgh, PA 15289

Prepared by:
Aaron Gutierrez
Shyam Raghavan
Mitchell Plamann
Suhaas Reddy

School of Computer Science
Carnegie Mellon University
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, c0db, enables users to run programs in their browser and break apart the execution when they don't run correctly.

Contents

1	Introduction	1
2	Approach	1
3	Results	1
4	Discussion	2
5	Sources Cited	2

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, `c0db` 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.

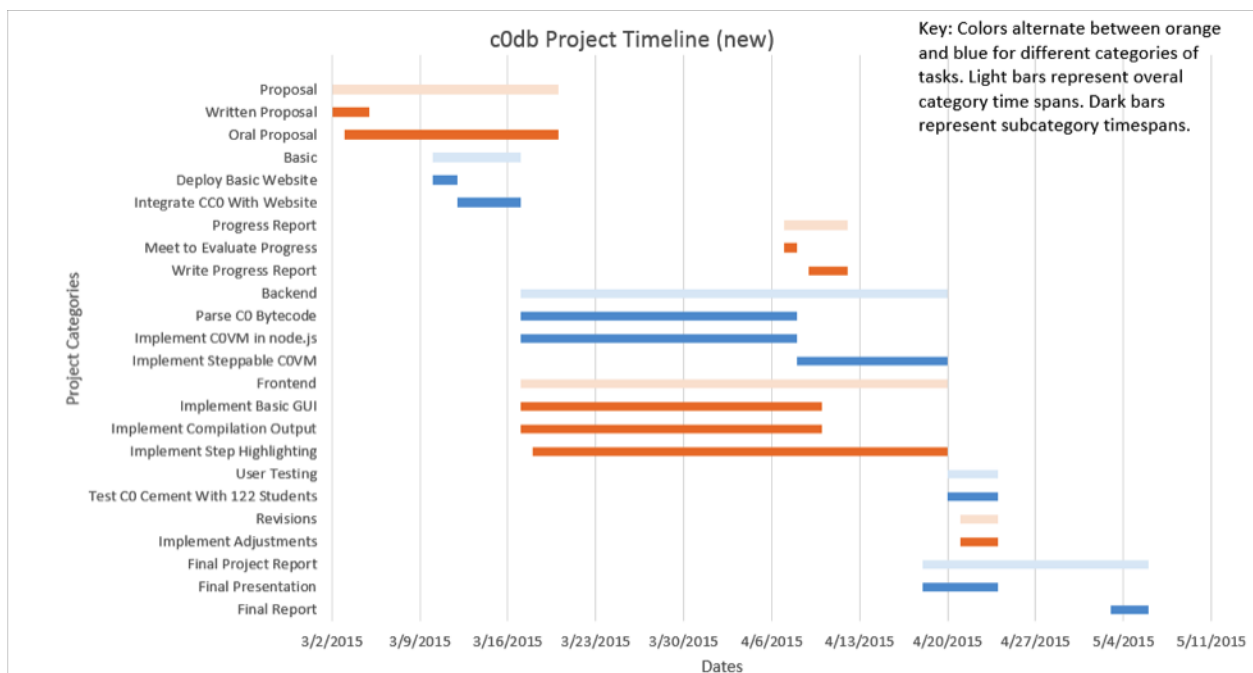


Figure 1: Revised project Gantt chart

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 `c0db`.

4 Discussion

5 Sources Cited