

ENGR xD52: Final Project

Due December 19th

The purpose of the final project is to express the awesomeness of CompArch to the world.

Work in groups of N.

The Work Plan

This subdeliverable is by December 2nd at 11PM¹ as an email to comparch13@gmail.com with the subject line formatted as [CA][Final Project Work Plan] Name1 Name2 Name3". Any questions regarding this section should be directed to Molly Farison or Eric VanWyk.

This email must contain the following:

- A goal for your final project
 - "Parallelized prime number seeker on an FPGA"
- The final demo you will run to demonstrate that goal
 - "Spit all the prime numbers between X and Y out over a serial port from an FPGA demo board"
- A rough schedule for your project
 - At least 3 milestones with due dates and man hour estimates to achieve them
 - "Single 8-bit prime checking cell validated in HDL: Dec 12 2013: 20 hours"
 - "Single 32-bit prime checking cell on hardware: Dec 19: 8 hours"
 - "Arbitrator for multiple cells"
 - "Final deliverable: As many prime checking cells as we can fit"

This is 5% of the project grade on paper, but often the difference between smiles and tears.

The Documentation

The documentation counts for 60% of your grade whether you succeed at your goal or not. Did you shoot for the moon and gravity yourself in the face? If you document the process well, you will get

¹ You really ought to do this before the turkey break...

full credit. This documentation will be submitted to the CA wiki, and must answer the following questions:

What did you do?

This is a catchy sentence followed by a paragraph or two. The intended audience should include people that aren't necessarily versed in Computer Architecture, but are technically competent. Even the MechEs should be able to understand this portion.

Why did you do it?

A paragraph or so about why the project you chose is worthwhile and interesting.

How did you do it?

This portion can assume an audience that has taken Computer Architecture, but don't get burdened by buzzwords. A sure sign of a bad engineer is over reliance on acronyms.

How can someone else build on it?

Include everything necessary to pick up where you left off. This should include:

- Code
- Schematics
- build instructions
- A list of difficulties and 'gotchas' while doing this project
- Work Plan reflection
- A possible TODO to extend the depth of the project

This should all be in zip file(s) on your wiki page.

The Choosing and Achieving your Goal: 35% of the grade

There is a **lot** of flexibility available in what your actual final project can be. I'm proposing that this year's theme be "Communication". It needs to satisfy the following criteria:

- 1) Build upon what we have learned in class this semester
- 2) Have well defined criteria for when it is finished and successful.
- 3) Be achievable within the time allotted.

Things that will definitely be approved:

- 1) Teaching somebody something cool about Computer Architecture
- 2) Something useful to someone that uses Computer Architecture
- 3) Something that needs the skills learned in Computer Architecture
- 4) Something that you can present at Expo that will make people want to take ENGR xD52

Append one of the following phrases to a cool project idea to make it more CompArch-y:

- 1) ... with an FPGA
- 2) ... in assembly
- 3) ... on a GPU
- 4) ... inside a nested series of black boxes
- 5) ... to make go screaming nasty fast.

As you put your project plans together, remember that the biggest portion of this project is communicating it to others.

Reminder: I summarized project ideas in lecture b10001.

Good luck, we're all counting on you.