Final Project
Comp Org Crazy Model Expo

Due Date: April 30

Approval Due Date: April 14

Description

This will be the most funnest thing ever!

In a group of two (2) students (or alone; not recommended), you will create a non-trivial model of some interesting piece(s) of computer hardware that is/are involved in the datapath. The model should somehow represent data flowing from one part to another to ultimately carry out some sort of instruction. For example, you may wish to show how an R-format's bits flow through the datapath to carry out an `add` instruction. Another example would be how data is fetched from memory and put into a register. Any part of the hardware is fair game, since internal memory, external storage, the system clock, etc., are all used in some way to carry out instructions.

In addition to the model, the details of your concept should be displayed on a poster.

Your group will present your model during lab on April 30^{th}. The presentation should be short (about five minutes), explain the real hardware being represented, and convey the workings of your model. Feel free to show additional items using the classroom projector. The poster is also due at this time. You may want to refer to the poster during your presentation; if not, it should be put up in csLab on one of the bulletin boards or over the white board **before** the lab period starts.

Specifics

- Your model can be made of just about *anything*, **except** real circuitry! You can build it out of Popsicle sticks, Legos, wires, lasers, phasers, light sabers, cake, candy, whatever! But remember that it should somehow convey the idea that data is *moving* through components from one stage to another. Since this will be voted on by your peers (see below), historically those that had some sort of working/dynamic portion have had more success than static models.
- The poster should adequately explain the workings of your model; that is, a person reading the poster would get the same information as in your presentation.
- While the model can be somewhat whimsical, especially in the materials, the poster should be of a high, professional standard. It should include a title, the names of the group members, Wheaton's logo, and be clear and easy to read. The content should include:
  - a description of the problem (what you are modeling)
  - a short statement about *why* you are modeling that particular item
  - a description of your "solution" and how that maps to the real thing
  - pertinent images/diagrams
  - a "conclusion" in which you gauge your model's success

Employ good fonts and colors as you would for a professional poster presentation at a conference. In general, use dark text on a light background. That is easier to read and won't use excessive ink. Use PowerPoint or Photoshop to format the poster. The size should be maximum 36" × 42" and can be printed by the Science Academic Administrative Assistant Erin Post by sending a PDF with the file name, your name, and `COMP 220 - Computer Organization` to `post_erin@wheatoncollege.edu` by Wednesday, April 23^{rd} (see Guidelines, attached). If you can not finish by this deadline, you will have to find a way to print it (eg., Staples).

- A part of your grade will be based on the number of votes your model gets from your peers. The vote is based on the presentation and the model itself.
- By April 14^{th}, your group (or a representative) should tell me who's on the team and discuss your intended topic. I don't want all of the groups to do the same thing!
- Topics are quite flexible. If you have a weird idea that may not fit exactly within the guidelines above, tell me about it. If it sounds interesting, I'll approve it. There have been many different projects over the years. This is a good chance to really explore CS in a unique and creative way.

It's only a model!
– Patsy in *Monty Python and the Holy Grail*

Guidelines for having a poster printed by Administrative Assistant (Mars 2100)

1. Prepare a poster with a maximum size of 36" high by 42" wide (or in portrait mode, if you prefer).
2. Create the poster in Photoshop (or similar) or PowerPoint. Make the dimensions with the same aspect ratio (height-to-width) as you want the printed version to have. Export your file as a PDF. A link to a poster template in Google Sheets is available on the course web page.
3. Use dark text on a light background, preferably black text on a white background. If you use a background color or background image, keep the background tones very light so black text is still visible over it. (Dark backgrounds burn through the printer ink.)
4. Include your name in the filename of the poster. This is the only way it can be identified once it gets to the computer linked to the printer. Include `COMP 220 - Computer Organization` in the email.
5. Submit your completed PDF of the poster by email using the subject line "*Your Name* poster to print for Prof. Gousie's COMP 220 class" (Replace the words "Your Name" with your name) and send it to `post_erin@wheatoncollege.edu`.
6. Posters will be printed in the order they are received, and they will be available for pickup in the Mars Science Center room 2100 as soon as they are printed.