



Final Project / CMPS179

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The final project for this class is to build an interactive prototype of a Wikipedia page which uses interactive simulation to help with the page's explanatory work. Many Wikipedia pages use static illustrations to enrich and assist the text, and our design project is find ways in which interactive simulation can help with explanation in ways that text and static images cannot.

The simulation and text must be deeply interdependent—do not simply put a simulation of Go within the Go game page, Conway's Game of Life on that page, or a laser game on the page about lasers. These pages carefully explain ideas, often employing multiple types of diagrams just where they are needed; the simulations should do the same.

A good way to approach this project is to think of a handful of topics you are interested in, and then look for existing diagrams on their page which are good, but could be made more helpful by reworking them as interactive simulations. From that idea list, brainstorm ways to rework the diagrams you find, keeping in mind how much time you have to build the project.

Design Document

You must work with an actual Wikipedia page for this project. The design document should incorporate a pixel perfect mockup of how your simulation will appear within an actual Wikipedia page. The design document should obviously be more than just a pixel perfect mockup, since you will need space to explain the simulation dynamics, user interaction, and so on. Feel free to tweak the Wikipedia page within

reason—the result should be recognizable as a Wikipedia page, and the page’s content you started from.

It is very important that you actually do research for this project. If you do not understand the page you are building a simulation for then your project will be off to a very bad start.

The relationship between the page’s content and the simulation should be clear from the design document. How the simulation integrates with the page content should be clear. Many Wikipedia illustrations have short bits of text which explain them, and live inside of boxes, or fit directly within the flow of the text. Think about and borrow ideas from the way that diagrams in Wikipedia are situated on their pages.

Your design might incorporate multiple simulation embeddings. Each instance could instantiate the same underlying code, but with different parameters. Do not undertake to build multiple different simulations unless they are very simple.

Our ongoing design concerns should be addressed, for example:

- Color
- Design reference
- Research
- Simulation dynamics
- User interaction
- Layout

Project

Projects should be playable within the context of a Wikipedia page. Whether the simulation is embedded in a fake page (ie an image of a Wikipedia page) or an actual downloaded and modified Wikipedia page source (better), is TBD. I still need to do some legwork to figure out how hard it is to do an actual embedding. Either way, the simulation’s place in the context of a Wikipedia page should be crystal clear.

We will not be submitting these projects to Wikipedia, but someone looking at your project should be able to immediately perceive how this simulation would work on Wikipedia, and why the page would be better if the simulation were part of it.

Projects need not be complex affairs—polish, quality of explanation, and walk up usability are our primary aims. A completed, simple, and effective project will be valued more highly

than an ambitious one which isn't fully implemented, is hard to use, unclear, or integrates poorly with the Wikipedia page it lives within.

Grading

As outlined in the syllabus, the final project is worth 20% of the grade. Grading will follow a similar rubric to the projects, and will be based upon mastery, originality, satisfaction of design document and project requirements we have been using throughout the class (using proper color palettes, design reference, etc...).

Schedule

Thu, May 30

Review One Page Designs (due Wed at midnight)
No Lecture. Project design presentations & discussion.

Tue, Jun 4

Review final project progress; in class demos—Format TBD
Projects should be playable, but not necessarily in the Wikipedia page yet.
Guest Lecture: Weird genres

Thu, Jun 6

Review final project progress; in class demos—Format TBD
Projects should be finished drafts, playable, and embedded in the Wikipedia pages.

Mon, Jun 10 (4-7pm) — Final Presentations

Final Projects due Tuesday at midnight
Final project presentation, playing, and review!

Topic Ideas

Here are some ideas I think would be cool. As always, I am available to talk about ideas. If you are unsure about an idea then please check in with me as soon as possible.

Politics

- Cuban missile crisis (Simulation & Games journal has some stuff on this)
- Collapse (Jared Diamond)
- Politics / game theory

Math / Computation

- Algebra visualization (See Charles & Ray Eames videos and [Dragon Box](#) game)
- Abacus
- Elevator routing logic
- Algorithms (eg <http://en.wikipedia.org/wiki/Quicksort>)
- Microprocessor architecture (eg http://en.wikipedia.org/wiki/Classic_RISC_pipeline)

Earth Science

- Daisy world (http://en.wikipedia.org/wiki/Daisy_world)
- Global Warming
- Greenhouse Effect
- Ice flow, glaciers, or infinite slope

Other

- Neural nets
- Neurons
- http://en.wikipedia.org/wiki/Newton's_law_of_universal_gravitation
- http://en.wikipedia.org/wiki/Von_Neumann_cellular_automaton
- <http://en.wikipedia.org/wiki/Wireworld>
- [http://en.wikipedia.org/wiki/Go_\(game\)](http://en.wikipedia.org/wiki/Go_(game))