

CS 105

Week 10, Part 2

MP7

Out: Later Today

Due: Next Tuesday by 6pm

Grade Refresh

Regrades

MP4-6

Labs and Activities

Midterm 2 Exam

Tuesday, Nov. 18, 2014

8:00pm – 9:30pm

(Conflict signups online)

Final Project

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Final Project

- The pinnacle of CS 105 is the final project!
 - Group project: **2-3 people**
 - **Must** be from your lab section
 - Your **TA** will be assisting you and grading you on the project

Final Project

- Topic:
 - Largely up to you! *The best project is a project that uses computing to solve a problem that exists for you already!*

Final Project

- Languages:
 - JavaScript
 - Console-based
 - HTML based
 - Excel

Final Project

- Languages:
 - JavaScript
 - Should be a decent code base, ~50 lines of JavaScript. Ideally, includes an HTML/CSS web page that is well designed as a front-end to the JavaScript.
 - Excel

Final Project

- Languages:
 - JavaScript
 - Excel
- Must be an original data set of substantial data or extremely deep analysis of existing data. Must be significantly larger than MP4-7.

Final Project Ideas

Final Project Ideas

Idea #1: Genetic Diversity

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- We all know about blood phenotypes: A, B, AB, and O.

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- We all know about blood phenotypes: A, B, AB, and O.
- With O being recessive, how is it that O is the most common blood type?
 - Population dynamics!

Idea #1: Genetic Diversity

- Simulation:
 - Create an artificial world in JavaScript of 1000 simulated “people”:
 - Start 90% of the people as OO,
 - 5% of the people with AA, and
 - 5% of the people with BB.

Idea #1: Genetic Diversity

- Simulation:
 - Create an artificial world in JavaScript of 1000 simulated “people”:
 - Start 90% of the people as OO,
 - 5% of the people with AA, and
 - 5% of the people with BB.
 - Randomly pair all of the people, have them produce two offspring. What happens?

Final Project Ideas

Idea #2: Stock Market

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- Create a portfolio for each member in your team, where each member gets a random stock that fits some category (JavaScript).

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- Create a portfolio for each member in your team, where each member gets a random stock that fits some category (JavaScript).
 - How did it do in 2013?
 - Continue to refine the category basis on how the stock is picked.

Final Project Ideas

Idea #3: Data APIs

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- Create an interesting data set on a topic you are interested in:
 - Volleyball? Softball? Football?
Soccer? Band? Chess? Bridge? LOL?
DOTA2? Facebook? ...

Idea #3: Data APIs

- Create an interesting data set on a topic you are interested in:
 - Volleyball? Softball? Football?
Soccer? Band? Chess? Bridge? LOL?
DOTA2? Facebook? ...
 - Create the dataset in Excel, export it into a CSV format, and then use a JavaScript API to visualize it

Final Project Ideas

Your Idea

Final Project Timeline

- **This Week:** Form your groups in lab, work with your groups on an idea.

Final Project Timeline

- **Next Week:** Submit a project proposal to your TA in lab. S/he will approve it or request you refine it and resubmit it. [20 points]

Final Project Timeline

- **Week 3:** Present a milestone update of your project, showing that you have made progress toward completing it. [30 points]

Final Project Timeline

- **Week 4:** Present your final project to your TA, turning in your code and a write-up about your project.

[50 points]

Final Project Timeline

- *We'll show of some of the top projects in lecture!*

Pivot Tables

A pivot table is a
data summarization tool

Pivot Table

- **Summarize:** A pivot-table can automatically sort, count, total, or give the average of the data stored in one table or spreadsheet.

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- **Summarize:** A pivot-table can automatically sort, count, total, or give the average of the data stored in one table or spreadsheet.
- **Display:** It displays the results in a second table (called a "pivot table") showing the summarized data.

Pivot Table

- Each column fill one of four roles:
 - Row Label
 - Column Label
 - Filter
 - Summarization Value

