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15-112 Fundamentals of Programming and Computer Science

Section S

4/15/15

Term Project Competitive Analysis

1. Graff

Graff is a program written by a former 112 student, Adriel Luo, along with a few of his friend at a hackathon. It allows the user to visualize their course schedule by making a graph of all the classes they want to take, and links classes to their prerequisites. It allows users to re-arrange the graph, and runs a physics engine to move the nodes into the right positions. Graff served as the inspiration for how I wanted the visual layout of the graph to look, as well as for how I wanted the physics engine to work.

Some nice features of Graff that I would like to include:

* Ability to add and remove data points
* Web scraping to obtain data
* Drag-and-dropping nodes and allowing the physics engine to re-arrange the graph based on where you placed the node
* “Shake it up!” button

Some things I would like to add/build upon:

* Extending it to allow for arbitrary data sets

1. Ubigraph

Ubigraph is a graph visualization program that can work in three dimensions. It can generate complex graphs quickly and effectively. While a three-dimensional graph looks very nice and can potentially be more interesting or telling than a two-dimensional graph, at this stage I feel that it is too complex for the scale of this project.

1. Cytoscape

Cytoscape is a program that creates visualizations of biological data and allows users to change the layout based on presets such as Circular, Organic, Grid, and Hierarchical. The user can also drag to rearrange the nodes, and the user can import data from Excel files, comma-separated values, and text files when given delimiter values.

Some nice features of Cytoscape I would like to include:

* Import and export data with file I/O
* Directly interface with the graph output to add nodes and edges

1. Gephi

Gephi allows users to very easily interact with the data. One feature from Gephi I am considering is the ability to color-code nodes and edges, and another is real-time visualization that allows the user to look at how the data changes over a given time period.