

Reimagining the WPI CS Course Selection Chart

...

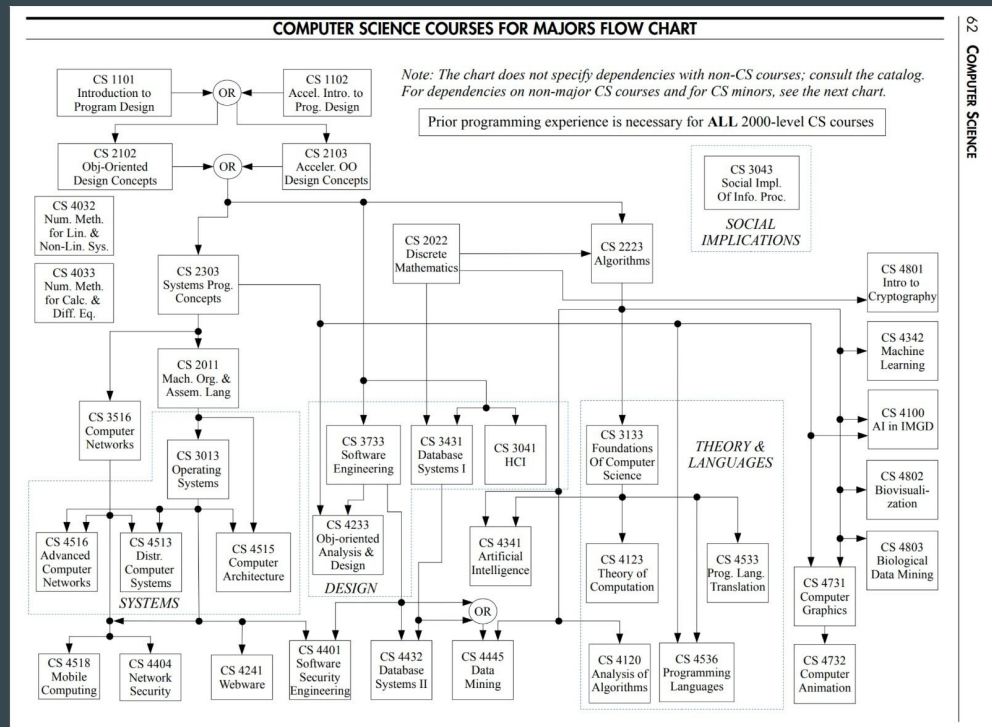
Sean Barry

Liam Rathke

Maria del Carmen Sacristan Benjet

Overview and Motivation

Is it possible to
improve upon the
existing CS
flowchart?

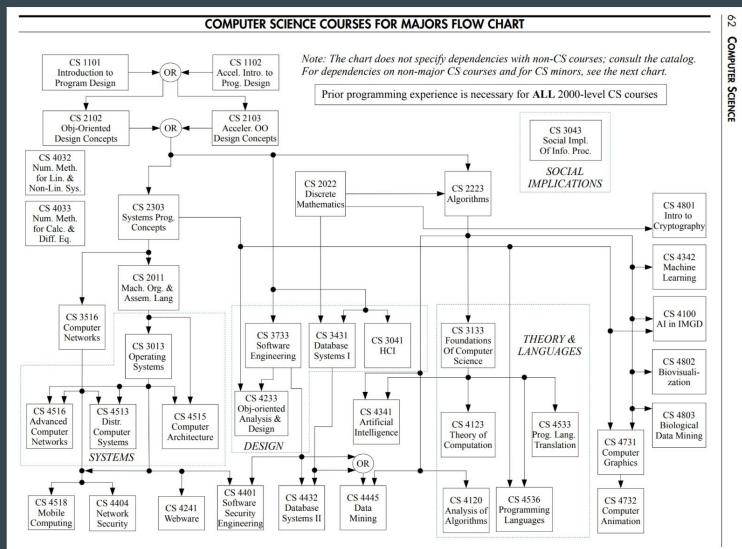


Results

We created a working alternative to the CS flowchart, and applied interactivity to reduce complexity.

Data

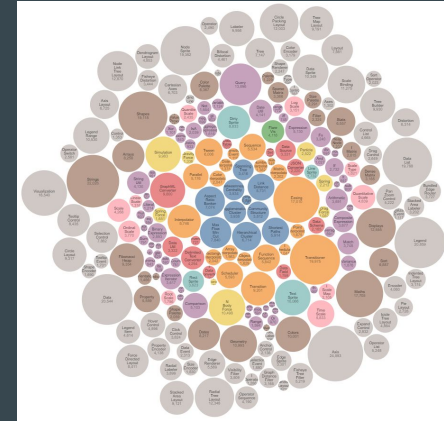
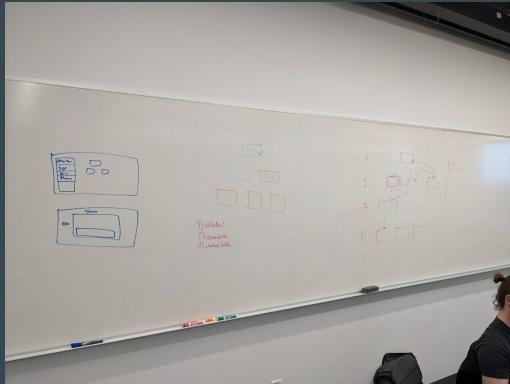
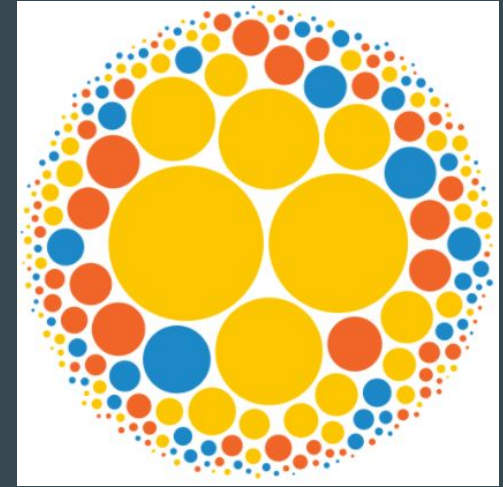
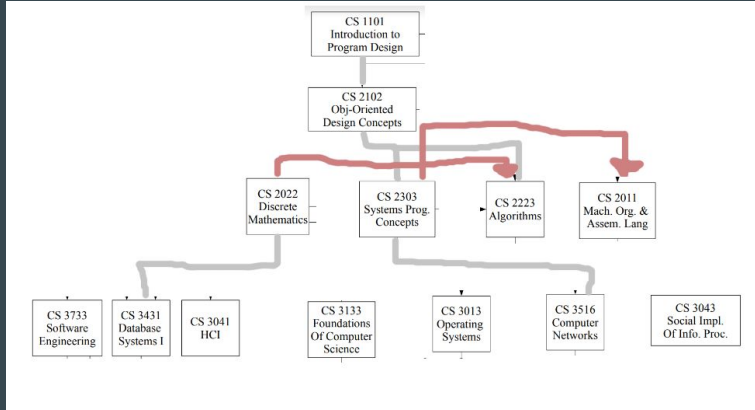
- Data collected from the latest 2020--21 WPI Course Catalog flowchart
- Manually transcribed into JSON with relevant info



```
{
  "nodes": [{
    "id": 0,
    "level": 1,
    "category": "",
    "number": "CS 1101/2",
    "name": "Intro to Prog. Design",
    "links": [1]
  }, {
    "id": 1,
    "level": 2,
    "category": "",
    "number": "CS 2102/3",
    "name": "OO Design",
    "links": [3, 5, 9, 10, 11]
  }, {
    "id": 2,
    "level": 2,
    "category": "",
    "number": "CS 2022",
    "name": "Discrete Math",
    "links": [5, 11]
  }, {
    "id": 3,
    "level": 2,
    "category": "",
    "number": "CS 2023",
    "name": "Systems",
    "links": [4, 8, 13, 24, 25, 29]
  }, {
    "id": 4,
```

JSON

Exploratory Data Analysis + Design Evolution

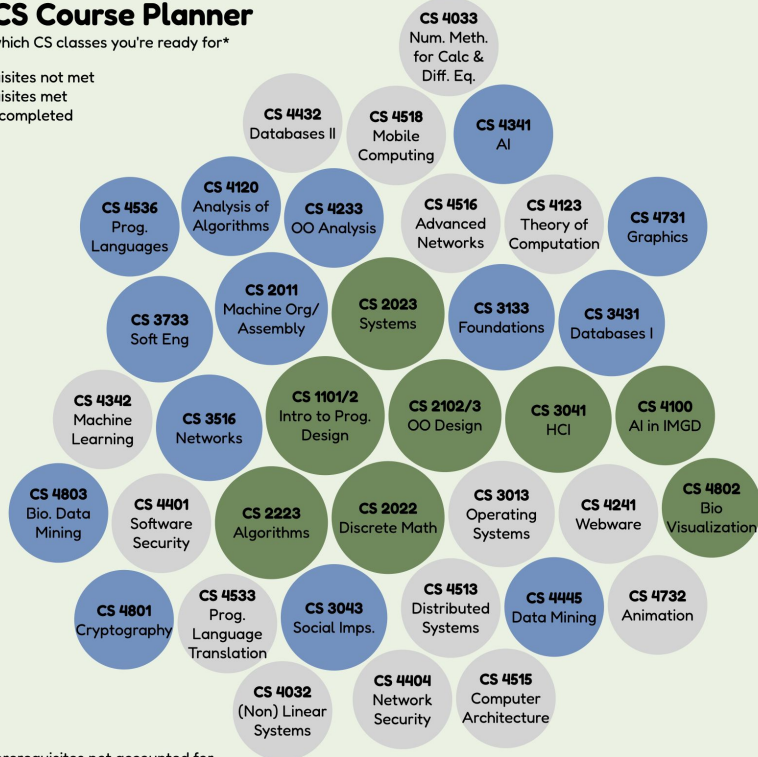


Implementation

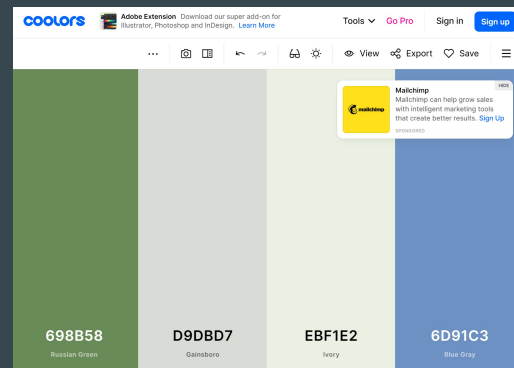
WPI CS Course Planner

Find out which CS classes you're ready for*

- Prerequisites not met
- Prerequisites met
- Course completed



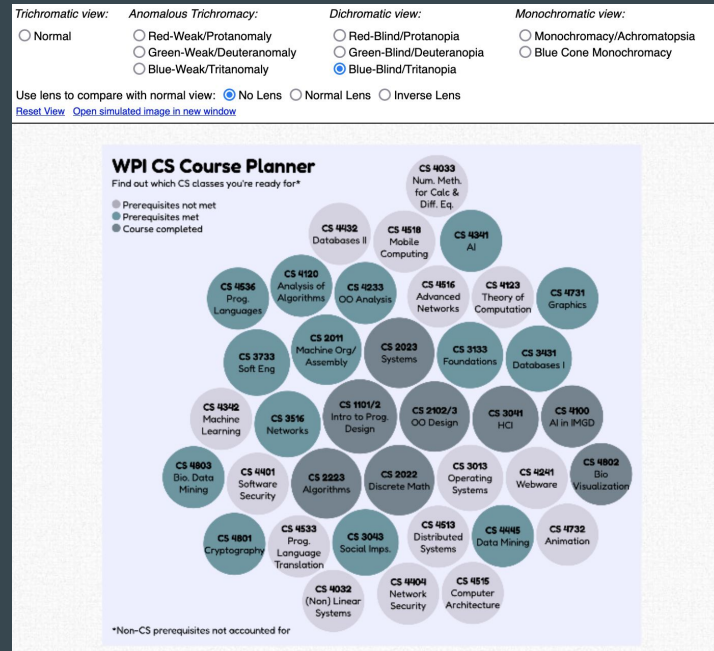
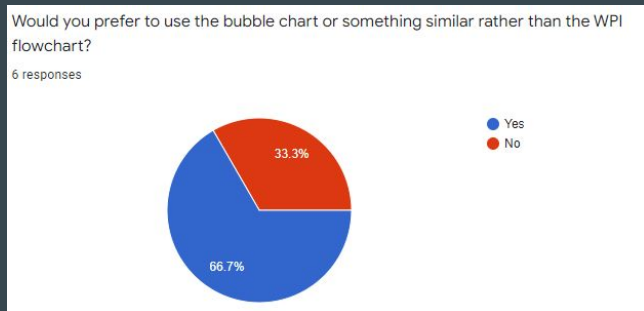
*Non-CS prerequisites not accounted for



Demo

Evaluation

- Made sure colors were color blind friendly
- We held a survey that asked questions about the usability of both the WPI flowchart and our new bubble chart version



Evaluation cont...

- $\frac{2}{3}$ of people preferred to use the bubble chart over the flowchart
- While responses on the original flowchart's readability were varied, mostly positive response to our bubble chart-based visualization
- Valid criticism for our implementation, future improvements
 - Prerequisites for a class are annoying to find out, only works 'top down'
 - More information displayed on original flowchart
 - No identifiers for courses in required subjects (theory, design, systems...)