

### **(30 sec) Problem Statement (Isaac)**

We're making Course Explorer. Course Explorer is an interactive graph visualization based on course prerequisites at the UW. Its purpose is to aid in long-term degree planning, which is currently a manual process that is so time-consuming and error-prone that it's almost infeasible.

### **(2 min) Team Introductions (Isaac)**

- Blake (front-end)
  - Input validation
  - Displaying course information on the graph
  - Letting users iterate over suggested courses
- Susan (back-end)
  - Parsing structured prerequisite data from admittedly (and unfortunately) unstructured course descriptions
- Janelle (front-end)
  - Forms that accept user input
  - The data visualization engine that displays and colors the graph
- Jake (back-end)
  - Graph algorithms
  - A simple logic library
  - Sysadmin tasks
- Michelle (front-end)
  - The application's styling
  - Autocomplete on inputs
  - Pan and zoom on the visualization
- Isaac (back-end)
  - Translating information from the UW APIs into models in our database

### **(4.5 min) Demonstration**

Features to hit:

Add/remove course  
View course details, colors  
Fullscreen  
Pan/zoom  
Validation

### **(2.5) User scenarios**

You entering your sophomore year and have decided to major in Oceanography.

1. You have a list of Oceanography [courses you need to take](#), but you have no idea what the prerequisites are. Time to find out!
2. You open up CE and start entering the 400-level requirements: OCEAN 400, 410, 420, 430.
3. A bunch of courses pop up. You pan around. It's a big map so you hit fullscreen.
4. You accidentally misspell 430 as 403, and see the validation error.

5. You wonder whether there are other sets of prerequisites that you can take. You hit 'next' to view another set of prereqs. You notice that some of the sets don't require the entire Calc series (you can take Q SCI 381 and precalculus instead)
6. You decide to enter Q SCI 381 under 'taken courses' and click update
7. You look at the visualization and notice that you need to take the entire Chem series, so you should probably take care of that this year. You also see that you can get started on BIOL 180, PHYS 114, OCEAN 200, and ESS 210, because they don't have any prerequisites.
8. You aren't sure what ESS 210 is, so you mouse over it and read the course description.
9. Looking more closely at the colors, you see that the blue courses are courses you've taken, and the green courses are planned courses.

### **(2) Audience suggestions**

We anticipate that they'll want to see CSE courses.

### **(3) Audience suggestions**

Q: What does the Dance Major and CSE major have in common?

Enter DANCE 406 to find out :)

### **(2 min) Challenges**

#### **Front-end: integration of code and features**

One of the challenge the front team had was integration of codes. Everyone in the frontend team has been working on the same html, css, and js files, and sometimes the merging process did not go smoothly. At the early stage of coding, we once resolved this issue by working together in the same place. Later, we took more advantage of Github, which made it a lot easier to handle the merge conflicts.

#### **Back-end: parsing prerequisite data**

One challenge the back end team encountered was parsing prerequisites for each course from the course description. At first, we assumed that the description of prerequisites followed a set structure as demonstrated by most CS courses. However, as we started working with more data, we realized that people wrote their prerequisite descriptions anyway they liked. We were able to come up with a list of almost 200 different types of prereq descriptions. There are some descriptions that even we could not make sense of when we read them. To fix this problem, we decided to look for key words and punctuations as some indication of the structure of the prereq descriptions. We realize that this method does not cover all cases accurately, but since that is not humanly possible, we had to settle for as many cases as we can. Also, we made course descriptions easily accessible in hopes that users will at least read about courses that they are interested in.

### **(1 min) Questions/Overflow (Jake)**

No outline required.