**Capstone 2 Proposal**

**(using React/Node/PostgreSQL)**

**Initial Idea:**

Shortest Path App - A rudimentary city map—like graph paper with blocks (Green block for park, gray block for city block, nothing too fancy), the user can choose either from map templates or choose where to place blocks themselves (depending on how hard this turns out to be to implement). Once the map is selected user chooses a start and endpoint for a square, then using Dijkstra’s algorithm, the square navigates from the starting point to the endpoint via the shortest path.

**1. What tech stack will you use for your final project? We recommend that you use React and Node for this project, however if you are extremely interested in becoming a Python developer you are welcome to use Python/Flask for this project.**

React/Node/PostgreSQL

**2. Is the front-end UI or the back-end going to be the focus of your project? Or are you going to make an evenly focused full-stack application?**

Evenly focused full-stack.

**3. Will this be a website? A mobile app? Something else?**

A Dijkstra’s Algorithm Simulator.

**4. What goal will your project be designed to achieve?**

Education: Understanding by illustrating Dijkstra’s Algorithm

**5. What kind of users will visit your app? In other words, what is the demographic of your users?**

Developers who are interested in shortest path algorithm.

**6. What data do you plan on using? How are you planning on collecting your data? You may have not picked your actual API yet, which is fine, just outline what kind of data you would like it to contain. You are welcome to create your own API and populate it with data. If you are using a Python/Flask stack are required to create your own API**.

Data will all come from my own postgresql database, no external API calls.

**7. In brief, outline your approach to creating your project (knowing that you may not know everything in advance and that these details might change later). Answer questions like the ones below, but feel free to add more information:**

**a. What does your database schema look like?**

The database will contain arrays for map templates, it may be possible for users to save their own templates to the database.

**b. What kinds of issues might you run into with your API? This is especially important if you are creating your own API, web scraping produces notoriously messy data.**

This is going to be based on my own database. Main concern is figuring out how to represent graphs (map data) in database to use as templates.

**c. Is there any sensitive information you need to secure?**

None.

**d. What functionality will your app include?**

Selecting map size, selecting map template, selecting a start and end on the map, and implementing Dijkstra’s algorithm to find the shortest path.

**e. What will the user flow look like?**

User chooses/makes map, chooses a start point and an end point, the watches as the moving square finds the shortest path to that end point.

**f. What features make your site more than a CRUD app? What are your stretch goals?**

If possible I would like to have users be able to position the blocks on the map as they please, rather than simply choosing from templates.