Stevens Institute of Technology
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How the Problem Statement Changed

Original Problem Statement:

“Women in need do not have adequate access to facilities and services.”

How the Problem Statement Changed

OASIS

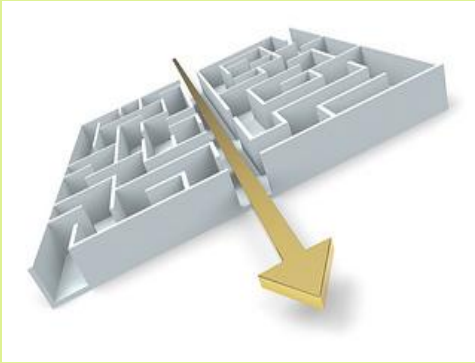
Refined Problem Statement:

> "Women who are **victims of domestic violence** and **homelessness** do not have **adequate access** to facilities and services largely **due to informational restraints**.

1. Narrowed down the **"Users"**
2. Specified the **"Need of Users"**
3. Suggested the **"Solution"** :

→ Hence, we will remove informational restraint by providing users with:

- accurate and updated information on facilities and shelters
- map with accurate geolocations of different services



Testing Methodology

OASIS

- Manual Testing:
  - Up to now, the team has been relying on manual testing to verify that the system functions as intended, as development has been focused on UI
- Plans for the future:
  - Looking into implementing testing scripts for various functions of the system
  - Looking into adding a CD/CI Pipeline to the project such as TravisCI

Testing Methodology

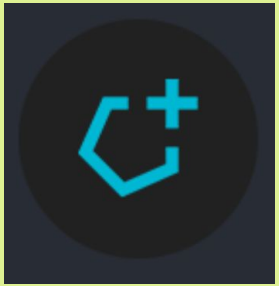
Usability Testing

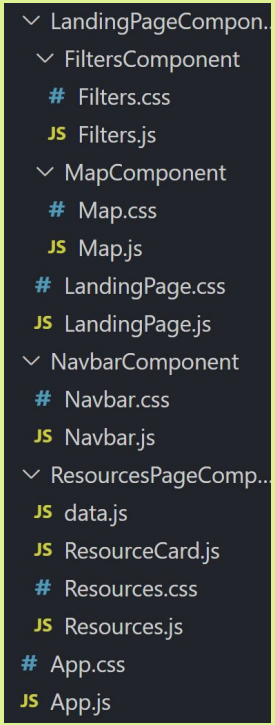
- Discovered a local user base through the Hoboken Shelter
- Stakeholder insisted that accessibility be optimized with regards to the elderly as well as people with dyslexia or autism
- Plans for the future: speak in an informal setting to potential users, reach out to Women's Rising, develop a mobile version of the web app

Demo!

Development Progress

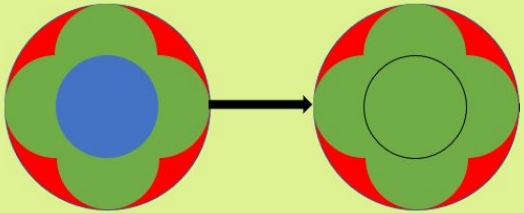
- **Cyclomatic Complexity:**
  - Quantified by CodeMetrics (VS Extension)
  - Majority of functions with cyclomatic complexity < 7
  - Some functions with cyclomatic complexity ≥ 10
- **Code Size:** ~18k lines of code
- **Adherence to Standards:**
  - Pair Programming to review code before creating a pull request
  - Splitting code into multiple smaller functions with a single responsibility
  - Naming Conventions
  - Clean, consistent code

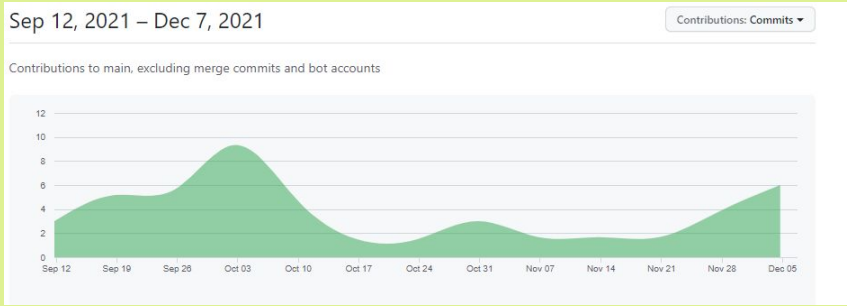




Development Progress

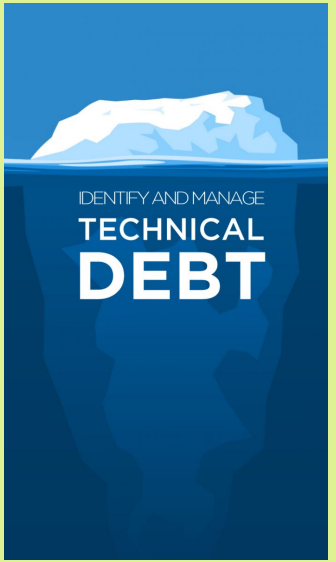
- Increased maximum nearby search output (80 instead of 20)
  - Procedurally generate places using smaller search radii
  - Risk: More API calls
- Resource page development
  - Modularization: React Props for sharing code between React components
  - Contain highly reliable resources (received from the director of Hoboken shelter)
  - Prioritize HCI to make it easier to use





Technical Debt

- Refactoring effort has been applied to reduce **Code Complexity**
  - Maintainability
  - Readability
  - Modularization
- May face performance issues depending on API use
  - 20 Results ~ 1s
  - 80 Results ~ 2s
- Cannot prevent Maps API nearby search keyword ambiguity
  - Mitigation: Develop our own filtering system



Ethical Concerns

- Requires users to allow their browser to access their location, creating privacy concerns
  - Transportation can be an issue for those far away, too
- Potential issues with leaving reviews: disclosing information that is personal/private to others or themselves that risks harm
  - Shelter may try to identify people and create positive/negative bias

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