Team Hemlock Prospectus

Team Description

Summary of Technical Strengths

Mike D: Mike is a computer science major and information security minor.   His interests lie in programming, cybersecurity and computer networking.   Through his coursework and experiences Mike is familiar with multiple programming languages including C/C++, Java, Python, and JavaScript. Mike also has extensive SQL experience gained from his internship at Rapid Control Service. Thus, his programming strengths lie in writing and debugging complex code and building, maintaining, and manipulating small to large databases.

Brandon M: Brandon is a computer science major. His interests involve consultation and team projects. Through his time at college, he is familiar with a few languages, those being Java, C, and SQL. His true strength is in thinking of the logic of solving problems. He will be starting at Owens Corning as a part of the Information Systems Developmental Program in Toledo, Ohio focusing on project management. From the internship, he gained extensive knowledge in the business side of the IT world.

Cameron H: Cameron is a computer science major. He has interests in full-stack development and design. Cameron has professional experience with Java, Javascript, and various frameworks for front-end and back-end development, including Angular, React, Spring Boot, and Node.js. He has some familiarity with automated integration and deployment methodologies, as well. In addition, he has non-professional experience in C(++), Python, and SQL. Cameron completed an internship at General Motors over the summer of 2021 and has accepted a follow-on job offer there.

Anticipated Growth Areas

Mike D: Mike has very little background in web development, so he intends to become more familiar with HTML, CSS, and PHP.   Mike also has no experience with any of the complex frameworks involved in web development, so he is looking forward to the opportunity to gain experience with Node, Agile, React and others.   This will also be Mike's first "real" software project and is an opportunity to become familiar with industry standard workflows and methodologies.

Brandon M: Brandon has never done anything in web development before. He also has no experience with any frameworks having to do with web development, so some behind the scenes learning will be needed. There is a lot of growth possible for this project, and he intends to capitalize on the opportunity.

Cameron H: Although Cameron has experience in front-end development, this experience is primarily focused on functionality and code, with little experience or knowledge of UX design. He anticipates that this project will challenge him to learn much more about proper UX concepts, and will give him an opportunity to expand his front-end development knowledge.

Project Description

Background

Old growth Hemlock forests in Grand Haven are being threatened by invasive species. These forests are very important to the local communities, so to counteract this, researchers have begun documenting the affected trees and applying chemicals to help keep the parasites at bay. These efforts are quite expensive, so they have tasked us with building a fundraising website that will allow donors to adopt an individual tree. Upon donating, they will receive the information about the tree's geotag. With this, they can go visit the tree in person and witness the rescue efforts first hand.

Description of Intended Features / Backlog

1. Homepage with information about the cause.
2. Individual pages with information about the three locations.
3. Information page to display data on individual trees.
4. Tree adoption button.
5. PDF certificate generator for tree adoption.
6. Donation button without adoption.
7. Back-end database that supplies tree information and retains adoption info.

Anticipated Platform / Tooling

- Angular for front-end.
- Back-end developed using PHP, Node.JS, or Spring Boot depending on the final platform.
- Database using SQL.
- Donations handled by third party TBD.

Relevant Ethical Principles:

1.01. Accept full responsibility for their own work.

1.02. Moderate the interests of the software engineer, the employer, the client and the users with the public good.

1.06. Be fair and avoid deception in all statements, particularly public ones, concerning software or related documents, methods and tools.

2.01. Provide service in their areas of competence, being honest and forthright about any limitations of their experience and education.

2.02. Not knowingly use software that is obtained or retained either illegally or unethically.

2.05. Keep private any confidential information gained in their professional work, where such confidentiality is consistent with the public interest and consistent with the law.

2.06. Identify, document, collect evidence and report to the client or the employer promptly if, in their opinion, a project is likely to fail, to prove too expensive, to violate intellectual property law, or otherwise to be problematic.

3.01. Strive for high quality, acceptable cost and a reasonable schedule, ensuring significant tradeoffs are clear to and accepted by the employer and the client, and are available for consideration by the user and the public.

3.02. Ensure proper and achievable goals and objectives for any project on which they work or propose.

3.08. Ensure that specifications for software on which they work have been well documented, satisfy the users requirements and have the appropriate approvals.

4.05. Disclose to all concerned parties those conflicts of interest that cannot reasonably be avoided or escaped.

5.04. Assign work only after taking into account appropriate contributions of education and experience tempered with a desire to further that education and experience.

7.03. Credit fully the work of others and refrain from taking undue credit.

7.04. Review the work of others in an objective, candid, and properly- documented way.

7.05. Give a fair hearing to the opinions, concerns, or complaints of a colleague.

8.01. Further their knowledge of developments in the analysis, specification, design, development, maintenance and testing of software and related documents, together with the management of the development process.