SW Engineering CSC648/848 Summer 2019

APPLICATION NAME*

Team 6

Austin Tsang
Audrey Wong
Han Huang
Alexander Caley
Gebregziabher Mengis
Jesus Valdes
Syed Abidi

Milestone 1

Date: 7/01/19

Revision History

Initial Submission: 7/01/19

Section 1: Executive Summary

When I first moved to San Francisco from Dubai, I was surprised and happy with all the greenery around me. The amazing gardens, the forests; Sacramento itself has been known to be the hub for agriculture – It's something Californians take pride in. However, a few times I've seen and noticed that when visiting recreational parks, hikes, and other areas of pure greenery and nature, there's either something wrong with a certain patch of land where either there's liter, or plants have died over time, and there's no one attending to it unless specified by a visitor. I felt, as any other Californian, that if we take pride in something as simple as being eco friendly and if we promote greenhouses, then we need to ensure these matters are being taken care of. So the question was, how do we do it?

My team and I decided to make a web/mobile application where visitors like me, workers of the forest, and voluntary personnel can easily help in assisting our nature. With this application, we hope to smooth the process of hunting down such areas of forests and wildlife that need to be taken care of by providing a list of all incidents to the authorities and administrators of those parks. We aim to take the stress out of all park sheriffs and volunteers by focusing our features to their specific needs.

A civilian sees an area which needs attendance, s/he opens our application, takes a picture of the area and some videos, uploads it, and be able to see the progress of it until it's resolved. One of the key features we'll provide over competitors is the ability for park administrators to browse through incidents, be able to see photographs/videos of the area, read a small description, be able to see the exact pinpoint location of that area, and be able to ensure that it's being attended to. Visitors come from all over the world, and sometimes they might not care about our environment as much as we do and drop some liter. We're prone to fires in forests and often times those patches remain intact unless they're brought up to the authorities, and even then, because the forests are so big, they're hard to maintain. This application will bring a lot of ease due to the fact that you can pinpoint the geographical area via Google Maps.

The team behind our application is a motivated group of students who have the right knowledge and expertise into making this application. We wish to make this process easier for everyone that comes and uses our app. We all come from many different backgrounds and interests, and represent a small portion of the intersectionality of San Francisco State University students. Having a diverse team means countless point of views to tackle this problem. We will combine these many different points of view to create one solution- a site that can cater to as many of these needs as possible.

Section 2: Personae and Main Use Cases

Title: Postings
1. John is a very busy dad who loves to take his kids to the park. He likes to make sure his kids are always playing in a safe environment , therefore, he is more than likely to report environmental issues if seen in the community. He works in an office and has strong web skills. He is also very impatient and prefers to do things quickly to fit into his busy schedule. He would prefer to quickly report an issue online in the most fast and efficient way as possible.

-      John takes his kids to a park after work and notices a large tree has fallen down and blocked the main path to the park. John goes to our website and searches the park by location, e.g. "San Francisco", then reviews the list of search results. John finds the specific park and is able to see previous issues with statuses. He does not see a report on the fallen tree, so he reports the problem by making a post.

Title: Statuses
2. Sarah is a teacher who loves to volunteer and give back to the community on her free time. This means she loves children and wants to make sure they are safe at all times. It also means she is environmentally conscious and therefore will report any environmental issues if seen. She uses basic web knowledge and has enough patience to be able to learn her way around a web page if she found it to be useful.

-      Sarah volunteered to tend to a hiking field trip with kids at her school. Before they head out to hiking trail, Sarah wants to make sure there aren't any dangerous issues her and her students

would potentially encounter. She goes to our website and searches to trail by location, e.g. "San Francisco", then reviews the list of search results. Sarah finds the specific trail and checks the postings. She finds the in progress postings and checks to see if the trail is too dangerous to go.

Title: Workflow
3. Jerry is a city environmental manager who is often very busy dealing with complaints from people all around the city. While on duty, he frequently take strolls through the different parks around the city to make sure everything is safe and functional. Jerry is in charge of keeping track of what goes on in these parks to make sure the community is able to enjoy these parks just as much as he enjoys them himself. He is not too familiar with WWW apps but has basic WWW skills. He would prefer to get things done quickly.

-       Jerry doesn't have time to deal with each complaint individually, but still needs to keep track of what is being work on and what issues have been dealt with. He recently received a complaint about a fallen tree and has called community helpers to remove the tree. He goes onto our website and searches the park by locations, e.g. "San Francisco", then reviews the list of search results. Jerry finds the park and finds the post. He assigns a status: in progress, attached to the post, and the site is updated.

Section 3: List of Main Data Items and Entities

Search: The site shall give accurate result .
Registration: A user need to register if there is an issue they want report.
Map Link, **Guide and Accessibility** to popular places such as parks, forests, beaches and oceans.

Admin or city manager:
- Review a report
- Approved or removed an appropriate report
- Update the status if the issue is in progress
- Assign to the crew

Registered Client :
- Can access site as a guest
- Be able to report an issue as a picture, in written
- Be able to review

Unregistered Client:
- Can access site as a guest

Service User Agreement:
- User terms and conditions

User Privacy:
- Protect user information

Customer Support:
- Client can contact customer support for urgent need.

Section 4: Initial List of Functional Requirements

Unregistered Users:
Unregistered user shall be able to view posted environmental problems.
Unregistered user shall be able to view the status of posted environmental problems
Unregistered user shall have the option to register their accounts.

Registered User:
Registered user shall be able to view posted environmental problems.
Registered user shall be able to view the status of posted environmental problems
Registered user shall be able to post environmental problems
Registered user shall be able to comment on environmental problems.
Registered user must have access to modify their profile.

Website Admin:
Website admin shall be able to view posted environmental problems.
Website admin shall be able to view the status of posted environmental problems
Website admin shall be able to post environmental problems
Website admin shall be able to respond on environmental problems.
Website admin must have access to modify their profile.
Website admin shall be able to delete inappropriate posts.
Website admin shall be able to modify the environmental problem posts.
Website admin shall be able to modify the status of posted environmental problems.

Data Description
Unregistered users: they can view only the posted environmental problems and their status. Does not need to login/register.
Registered users: they can post environmental problems; can comment on the posted environmental problems; can view the posted environmental problems and their status. Needs to login/register.
Website admins: they can access and modify all data. Needs to

Section 5: List of Non-functional Requirements

High-level non-functional specifications (how the app is delivered and other constraints) that MUST be adhered to

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
3. Selected application functions must render well on mobile devices
4. Data shall be stored in the team's chosen database technology on the team's deployment server.
5. No more than 50 concurrent users shall be accessing the application at any time
6. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English.
8. Application shall be very easy to use and intuitive.
9. Google analytics shall be added
10. No e-mail clients shall be allowed
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
12. Site security: basic best practices shall be applied (as covered in the class)
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
14. The website shall <u>prominently</u> display the following <u>exact</u> text on all pages *"SFSU Software Engineering Project CSC 648-848, Summer 2019. For Demonstration Only''* at the top of the WWW page. (Important so as to not confuse this with a real application).

Section 6: Competitive Analysis

Feature	Our Product	Competitor A	Competitor B	Competitor C
Search	+	++	+	-
Registration/Log-In	+	+	+	-
Ability to submit problems	+	+	+	+
Ability to comment on posted problems	+	-	-	-
Status of problem	+	++	-	-

       Starting with the ability to submit problems, our future product and other competitors have a very similar form to fill out. All of them ask users for a short description, location, and an optional photo. Users will remain anonymous after posting complaints, but some of our competitors do allow users to submit their information if they want updates on their complaints. Our users will always be able to check our site for updates on their complaint, so asking for their information is unnecessary. Some of our competitors allow users to categorize their complaint, such as air or water pollution, which allows users to filter complaints by category when searching. Our search will allow users to filter by location thus categories will not be needed in our product. Our competitors that have search also allow filtering by location, so we know that it is a very effective form of searching. Our product will require users to register in order to submit complaints, but it will not be required to view other complaints. Our competitors do not require users to register in order to submit, but we believe that having lazy registration will help combat spam and inappropriate submissions. Any user using our product will be able to view the status of any complain that has been submitted. We will have three different types of statuses (pending, closed, in progress) which we believe is enough to give users an idea of how complaints are being handled. Only one competitor allowed users to view the status of complaints, but they have a variety of statuses that are very descriptive.

Section 7: High-level System Architecture and Technologies Used

Server Host: AWS 1CPU 1GB RAM

      Operating System: **Ubuntu Server 18.04 LTS** Server

      Database: MySQL 10.14

      Web Server: AWS with Node.js

      Server-Side Language: Javascript

      Additional Technologies:

- Frontend Frameworks: React.js, Redux
- Backend Framework: Express
- IDE: Visual Studio Code
- Web Analytics - Google Analytics
- Bycrypts - Encryption for user Authentication

Section 8: Team

Austin Tsang - Team Lead / Github Master / Document Master
Audrey Wong - Frontend Lead / Document Master
Han Huang - Backend Engineer
Alexander Caley - Backend Lead
Gebregziabher Mengis - Frontend Engineer
Jesus Valdes - Backend Engineer
Syed Abidi - Backend Engineer

Section 9: Checklist

- ✓ Team found a time slot to meet outside of the class
- ✓ Github master chosen
- ✓ Team decided and agreed together on using the listed SW tools and deployment server
- ✓ Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
- ✓ Team lead ensured that all team members read the final M1 and agree/understand it before submission
- ✓ Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)