2018

SW Engineering CSC648/848 Section 01 Spring 2018 Team 3

EnviRepair

Milestone 1

2/28/2018

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Document Layout, Non-Functional requirements copied	2/22/18
Use Cases written	2/24/18
Executive Summary created, Use Cases Compiled and edited	2/26/18
Use Cases Updated, Functional Requirements Updated	2/27/18
Competitive Analysis, High Level System Architecture, Team and Table of Context Added	2/28/18

Contents

1) Executive Summary

Who doesn't like beautiful lush green forests and parks? Who doesn't adore the clean streams of river, the blue waves of the sea, and clear waters of the lake? Who would want their kids to play in a place that reeks of pollutants, toxicants, and hazardous substances? None of us. Why then is there such a widespread indifference to the bad condition of our environment? We spoke to several people and realized that even though they enjoyed nature and all its beauty, they didn't believe they could change anything by themselves. They felt they did not have a platform or tools that could help them create change. So they just overlooked what they saw and looked for another place to enjoy the calmness that came with nature.

We at EnviRepair understand the need and importance of restoring the environment, the parks, and other natural habitats around us so that we and our loved ones can receive the tranquility that mother Earth has to offer in its purest form. Our website will empower people to easily and quickly file a complaint for any environmental concerns. Be it a dying tree, a polluted pond, or even improper waste disposal; we are here to make sure people's concerns are addressed to swiftly. While there exist other websites where environmental complaints can be filed, they usually have arduous processes and formalities. Not only will our website be easy to use, but it will also not require users to register, or fill in unnecessary personal details like their home addresses. They will also be able to check the status of their complaints. The status would be unambiguous with a one-line description. Our website will also make it easy for anyone to view complaints based on locations, so that they don't have to deal with unpleasant surprises. Another thing that will set us apart from the rest is that we will have colored score ranging from red to green that will tell people how bad the condition is of a place.

We believe in diversity – in personality and in thought. Our team represents this belief. Our team consists of distinct people that are all tied together with one end goal. We want to make a product that facilitates and hastens the laborious process of environmental repair and preservation. We pay extreme attention to what each member has to say, because we believe great ideas can originate from any place or person. In a small group of 6 people, we have people from 5 different countries. This gives us an extraordinarily wide perspective into understanding how we can connect with different people and groups without making the task too challenging.

2) Use Cases:

1) **Unregistered User**:
   Mary is an Unregistered User, on her way home she saw a large broken branch on the street, she quickly snapped a few pictures on her phone, as an Unregistered User she navigates to EnviRepair. Mary does not like registering on websites, so she submits an environmental issue as a guest. She uploads the picture and other relevant information. Sometime later she notices the log has been chopped up and moved.

2) **Registered User:**
   Lukas spots hazardous waste dumped on the ground at Golden Gate Park. As a Registered User he navigates to EnviRepair, logs in and begins to input relevant information to the issue he wants to report. After some information has been submit, he is prompted with similar issues reported by other users that may be the same issue. Realizing the issue, he is reporting has already been posted he chooses to add some extra details to the existing post and mark another as a duplicate.

3) **City Manager**

   Thomas is a City manager can view environmental issues posted by Users. As City Manager Thomas is getting ready to manage the day's workflow, he logs in and start to browse issues in his district. He sees there are two issues in the playground in front of City Hall, the first having to do with the play structure and the second with a broken bench. Using the information provided by EnviRepair he is able to create an accurate and efficient workflow to fix the issue. Once he has sent someone to look at the issue he marks the posting as 'In Progress'. Once he hears back from his team, that the bench and play structure have been fixed he marks the online posting as "Solved" and then add some comments about the issue and the fix for the public to see in the future.

4) **Administrator**
   Jennifer is the Administrator for EnviRepair, she is given the same access as all of the above user but can proforma moderation duties. EnviRepair has built in functionality to help Administrators view posting that may be inappropriate. Jennifer Logs in and is able to see, flagged content, as such she discovers a user has been posting inappropriate content and deletes the users account. The City manage was also out for the day, in situations like this Jennifer is able to make the same updates a city manager would in their absence with the help.

3) Data Definitions:

1) Environmental Issue – This is an issue an in a user's community that poses some kind of danger or discomfort to the user and those around them, this issue is normally caused by the environment or human negligence.
2) Post – An environmental issue a user has posted
3) Flag – Users are allowed to flag content as innapropriate, after a post receives a number of flags, it is a target for moderation.
4) Unregistered User: May post and browse environmental issues
5) Registered User: Same privilege set as Unregistered User, but may also: Flag posts deemed inappropriate, access to personal info, posting history, can edit a post.
6) City Manager: Same Privilege Set as Registered User, can edit status of postings from in-progress to complete, may also post relevant information to status changes.
7) Administrator – Same Privilege set as City Manager, also given moderation capabilities, can hide, unhide, delete and edit posts, may also delete users.

4) Initial List of Functional requirements

1) Users shall be able to log in to report environmental issue
2) Users shall be able to browse current and solved environmental issues
3) Registered Users shall be able to view past issues in their account
4) Registered users shall be able to edit a post if the issue has not had its status changed by a City Manager
5) City Manager shall be able to view current issues in their district.
6) City Manager shall be able to post solution generated by department, marking an issue solved or in progress, with the addition to comments pertaining to the change in status
7) Administrators shall be notified if a post has been flagged enough times for being inappropriate
8) Administrators shall have the ability to edit, delete hide or unhide posts
9) Posts shall be browsable by filtering information such as zip
10) Registered Users shall be able to flag content they see is inappropriate
11) Registered Users shall be able to edit and view their account information once logged in
12) Users shall will be able to view posted environmental issues on a map view, each post being marked by a pin
13) If users are submitting a post that the system thinks is similar to another post, the user shall be prompted with the similar issue(s), the user will be able to select the 'duplicate' issue and comment, or continue because their issue is unique
14) Administrators shall be able to mark issues as duplicate
15) Users shall be prompted with known locations as they input the location information of their environmental issue (ie Zip fills in City and State)

5) List of non-functional requirements

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 all major browsers: Mozilla, Safari, Chrome.
3) Application shall have responsive UI code so it can be adequately rendered on mobile devices but no mobile native app is to be developed
4) Data shall be stored in the team's chosen database technology on the team's deployment server.
5) Application shall be media rich (at minimum contain images and maps)
6) No more than 50 concurrent users shall be accessing the application at any time
7) Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
8) The language used shall be English.
9) Application shall be very easy to use and intuitive.
10) Google analytics shall be added
11) No e-mail clients shall be allowed
12) Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
13) Site security: basic best practices shall be applied (as covered in the class)
14) Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
15) The website shall prominently display the following exact text on all pages *"SFSU Software Engineering Project, Spring 2018. For Demonstration Only"* at the top of the WWW page. (Important so as to not confuse this with a real application).

6) Competitive analysis

Feature	Ireland EPA	USA EPA	SF Parks and Rec	EnviRepair
Local (City or County)	+	-	++	++
Environmental Issue Post Support	+	+	-	+
Form Submission	+	+	-	+
Search	+	+	-	++
Map with Postings	-	-	-	+
Account Creation	-	-	-	+
Image Media related to posting	+	-	+	++

EnviRepair will revolutionize how environmental issues are reported and dealt with, where the competition focuses on legislative information delivery and little to no support for local community-based issues, EnviRepair is built to handle this. Our app focuses on community awareness and collaboration, users will be able to upload media of an environmental issue in their community. Other users will be able to browse the site viewing current and past issues in their neighborhoods. The reality is there is no competitor that delivers the community-based user ability that EnviRepair does.

7) High Level System Architecture

1) Server Host: Google Cloud Platform 5GB of Storage
2) Operating System: Ubuntu 17.04
3) Database: PostgreSQL 10.0
4) Web Server: node.js 8.6.0
5) Server-Side language: JavaScript
6) Supported Browsers:
    a. Google Chrome 64.0.3282+
    b. Fire Fox 58.02+
7) Additional Technologies:
    a. Web Framework: express.js
    b. IDE: VScode
    c. Web Analytics: Google Analytics
    d. Google Maps API

8) <u>Team</u>

1) Gary Straub - Team Lead (Front End)
2) Gerren Penaloza – Back End Lead
3) Uzair Inamdar – Back End Lead
4) Justin Abarquez – Front End Lead
5) Eva Kim – Front End
6) Lily Linh Lan – Back End

9) **Checklist:** for each item below you must answer with only one of the following: **DONE**; or **ON TRACK** (meaning it will be done on time, and no issues perceived); or **ISSUE** (you have some problems, and then define what is the problem with 1-3 lines)

- Team found a time slot to meet outside of the class
  DONE
- Github master chosen
  DONE
- Team decided and agreed together on using the listed SW tools and deployment server
  DONE

- Team ready and able to use the chosen back and front end frameworks and those who need to learn and working on it
  DONE

- Team lead ensured that all team members read the final M1 and agree/understand it before submission
  DONE