SW Engineering CSC 648/848
Section 01 Team 07
Eco Hazards
Milestone 1
Spring 2018

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Revision	Date
1.0 - First draft submitted	02/28/2018
1.1 - Revised from feedback	03/05/2018
2.0	

Section 1: Executive Summary

Environmental issues are continuing to impact the world around us. To make a difference in the community and help clean up the environment is what Team 07 aims to achieve. Team 07 is made up of San Francisco State University students who plan on deploying an application to help this problem. Our application will change the way environmental issues are solved today. The reason Team 07 wanted to start the web-based service was to allow anonymous users to help participate in their communities easily. The use of mobile devices and media technology will help transform our web-based service to help the product be more user-friendly.

Team 07 is currently implementing and developing a web-based service that allows users to post and view environmental issues around their neighborhoods. Environmental companies around the users location will be able to monitor and assign workers to fulfill the issue. The site currently being developed will allow multiple users to access their current location or view surrounding environments remotely. It will allow users who want to view environmental problems to be able to take the necessary actions to fix the situation.

In order to help the environment and keep our communities clean, our application will allow an anonymous or registered user to pinpoint an environmental issue and document it. Whether the documented report was a pinned location on the map, or a photo uploaded to the application itself, a status report will continue to be monitored on the environmental issue until it is resolved. This is absolutely necessary to make sure the right actions were taken to help keep the environment around us clean. A unique asset our design has over other environmental issue applications is the map of reports implemented in our design and the location search.

This application is currently under development by Team 07. We are a student startup team at San Francisco State who plan on continuing to help the environment in any way we can. Our application will allow us to stay up-to-date with ongoing environmental issues around our communities and take the necessary actions to get involved.

Section 2: High-level Use Cases

1.   Anonymous User

John opens the application after encountering an environmental hazard in a public park. He browses current posts in list view or in map view as a guest user. He searches by location to see if the hazard has already been reported. John find that the hazard has not been reported and wants to report it himself. He is prompted to register to be able to create a post including a brief description, the location, and a photo.

2.   Registered User

Julie has the same privileges as a general user. Julie wants to report a post on the website about an environmental issue, however, she first needs to create an account by providing an email address and password. After making her account and logging in, she will report an environmental hazard she encountered near her home. She uploads photos, writes a brief description of the incident, and adds a location to the post. Later on, she will return to the application and signs in to check the status of the environmental hazard or make changes to her post.

3.   Environmental Department Employee

Joshua works for an environmental hazard clean-up crew. He signs in to the application in order to view and assess the list of newly reported hazards. He assigns a priority to the hazard based on the danger in presents and will update the status of posts once an employee is assigned to the hazard. Once a post has been resolved, he will contact the original reporter and set the post as resolved.

4.   Administrator

Jessica signs into the application and creates accounts for new environmental department employees. She is given a list of newly reported hazards and will approve or reject the given posts. If misuse of the application is encountered, she can suspend the violating user's account and remove their inaccurate or inappropriate posts. If an environmental hazard is reported by multiple users or is especially toxic, she can assign a higher priority so that clean-up crews handle it first. Once she is notified that the issue has been resolved, she will remove the post and can message the report creators. Although being an administrator, Jessica cannot edit posts.

Section 3: Data Definitions

Types of users & their privileges

Anonymous User
Unregistered user browsing the site
- View (active) environment reports
- Submit environmental report validated by personal information
- Register

Registered User
User who has created an account
- Anonymous User plus:
- Login
- Post environmental report without having to re-provide information
- Follow up on problem (see status, provide more info, etc)
- Confirm resolved
- Update profile

Env dept
Nontechnical employee of the SF Environmental department
- Registered User plus:
- View requests
- Assign/update status
- Reply to reporter

Admin
Technical user responsible for site moderation.
- Registered User plus:
- Create env manager account
- Approve/reject reports
- Flag users/suspend account

Types of stored data and contents:

Hazard Report
Report on a single environmental issue submitted by a user
- Date
- Location
- Type of issue (chemical spill, etc)
- Reported by (if user was registered)
- Image(s)
- Hazard Status

    Location
    A park, beach, or other public area which the user can select when submitting a report
- Name
- Coordinates
- Type

    Hazard Status
    Whether a hazard has been addressed by the environmental department.
- Awaiting assignment, assigned, in progress, hazard removed
- Entity assign to, if any
- Removed hazard reports considered inactive

User Account
- Username
- Email
- Password
- Account type (User, Env Dept, Admin)
- Phone number
- Hazard Posts
- Hazard Post count

Section 4: Functional Specs

1. Users shall be able to post information about environmental hazards in their area.

2. User shall be able to add all relevant information when uploading a report, including images, excluding status and who it is assigned to

3. Authentication to post hazard reports shall be provided by either Login or by user providing identifying information (Name/email/phone number)

4. Users shall be able to view posted (active) hazard reports and associated information.

5. Users shall be able to search for reports by zip code or location

6. Anonymous Users shall be able to register and create an account.

7. Registered Users shall be able to log in

8. Administrators shall have the privileges to remove inappropriate post that do not meet the website guidelines.

9. Administrators shall have the privilege to ban users who break the guidelines.

10. Env Dept shall be able to view list of active reports and see who they are assigned to

11. Env Dept shall be able to sort active reports by their status and who they are assigned to

12. Env Dept shall be able to update data of hazard reports including status and who they are assigned to

Section 5: Non-functional Specs

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).

Section 6: Competitive Analysis Chart

Features	epa.org	broward.org	earthtimes.org	epa.ie	Eco Hazards
Text Search	+	+	+	+	+
Boolean Search	+	+	+	+	+
Location Search	-	-	-	-	+
Map of Reports	-	-	-	-	++
Embedded Tweets	+	-	-	-	+

+ feature exists, ++ superior, - does not exist

https://www.epa.gov/enforcement/report-environmental-violations
https://lema.epa.ie/complaints
http://www.broward.org/Environment/Resources/Pages/EnviroComplaint.aspx
http://www.earthtimes.org/

Section 7: High-level system architecture (itemized list)

- Server Host: Heroku, 512MB RAM, 1xCPU Share Free Tier
- Operating System: Ubuntu 16.04 Server
- Database: ClearDB MySQL
- Web Server: Apache 2.4 / Django 1.11.10
- Server-Side Language: Python 3.6.4
- Web Framework: Django
- IDE: PyCharm IntelliJ
- Web Analytics: Google Analytics
- SSL Cert: Lets Encrypt (Cert Bot)
- Communication : Slack
- Collaboration: Asana
- API: Embedded Tweets Twitter, Google Maps API

Section 8: Team list and roles

[Team Lead] Sean Sutherland
[Front End Lead] Lance Larsen
[Back End Lead] Corey Humeston
[Front End/Github Master] Mark Soriano
[Front End] Girish Tiwale
[Back End] Ali Alavi
[Back End] Amelie Cameron

Section 9: Checklist

1. Team found a time slot to meet outside of the class: DONE
2. Github master chosen: DONE
3. Team decided and agreed together on using the listed SW tools and deployment server: DONE
4. Team ready and able to use the chosen back and front end frameworks and those who need to learn and working on it: DONE
5. Team lead ensured that all team members read the final M1 and agree/understand it before submission: DONE