SW Engineering CSC 648/848
Section 01 Team 07
[Eco Hazards]
Milestone 1

Spring 2018

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Revision	Date
1.0	02/28/2018
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. 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 anyway 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

General 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. If not, he needs to create an account to make a new post including a brief description, the location, and a photo.

Registered User

Julie has the same privileges as a general user. However, she chooses 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.

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.

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.

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:

Environmental 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)

Location

A park, beach, or other public area which the user can select when submitting a report

- Name
- Coordinates
- Type

Section 4: Functional Specs

1. Logged in/Authenticated Users shall be able to post information about environmental hazards in their area.
2. Anonymous Users shall be able to view posts, register and create an account.
3. Registered Users shall be able to submit a post about environmental hazards and be reviewed by a site admin.
4. Authentication to post environmental reports shall be provided by either Login or by user providing identifying information (Name, email/ phone number)
5. Administrators shall have the privileges to remove inappropriate post that do not meet the website guidelines and ban users who breaks the guidelines.
6. Website posts shall contain a photo that relates to the environmental hazards.
7. Website posts shall contain the location regarding the environmental issue.

Section 5: Non-functional Specs

1. Applications Security shall be through Heroku's cloud.
2. Application shall be developed, tested and deployed using tools and servers approved by Class CTO.
3. Shall be available for use to any registered/non-registered user.
4. Application shall be viewable and have an easy to navigate UI whether its rendered in mobile or desktop/laptop.
5. Data shall be stored in a MySQL Database on the Heroku server
6. Application shall be media rich.
7. Application shall be in English.
8. Google maps shall be included in the Application.
9. Google analytics shall be included in the Application.
10. No more than 50 concurrent users shall be accessing the application at any time.
11. Application shall have swift response times given strong internet connection and low user traffic.

Section 6: Competitive Analysis Chart

Features	epa.org	broward.org	Our future product
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

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

- Server Host: Heroku, 512MB RAM, 1xCPU Share Free Tier
- Operating System: Ubuntu 16.04 Server
- Database: Postgres 10.1
- 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

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