Stormwater Design Changes #1
2/20/2024

After preparing the cognitive walkthrough, and meeting with our scientist and Dr. Pastel, we have come up with the following updates to our original design:

1. Account System & User Privileges:
    a. The scientist is the most privileged moderator and can add teachers or students, remove any accounts and make/remove/edit any posts
    b. Teachers are moderators that can add and remove students, and make, edit, or delete posts
    c. Students have the lowest privileges, they can make posts, view posts with access to see the username of the author, edit their own posts, and change their passwords

Justification: We have put a lot of thought into how to protect this application from teenagers. We decided that an approval process for posts was going to be too much work for our scientist and teachers to manage, so instead we will allow the scientist and the teachers to remove and edit posts made by students, to allow them to take down inappropriate content. They will also be able to remove student accounts to prevent problematic students from continuing to misbehave on the application. The students have access to change their password but not their username, which is important to prevent anonymity so that students who make trouble can be identified, disciplined, and removed. Finally, there was also concern that students would be identifiable based on their usernames, so only members of the application who are signed in will be able to see the author of a post.

2. User Experience:
    a. Our UX consultants recommended the following additions to ensure the app is more user friendly. We are going to implement the changes we believe to be within our project's scope, which includes the several of the following features below:
    b. The upload and map sections will have tool-tip pop-ups to advise the user on what data-types are accepted by the system. Any further errors with the data type will clearly outline to the user that the data provided is wrong and to assign new values, citing some examples.
    c. Each user submission will be distinguished from one another using a unique id code, which can be found in the database and the submission name so that repeat posts from the same user will not override one another.
    d. The design of the app will be focusing on a responsive mobile view in lieu of a standard website or computer application.
    e. The user will be able to indicate if they have forgotten their password and subsequently change it on our login page.
    f. Back buttons at top and bottom of pages to navigate users between pages conveniently.
    g. Users will have their own page visible in the corner of the screen with information about the account, a method of viewing their posts, and a logout button.
    h. Users can edit their posts for potential mistakes with their provided information and add/remove images.

i. The app's page view will be adjustable based on what dimensions the user's screen is. Text and the map will change in size to account for this as well.
j. Information will be conveyed in a way that high school students can easily understand. This will be conveyed through less specialized language, example images of Green Stormwater Infrastructure locations, and how each data point they can upload works.

Justification: These changes from our prototype will make the app fit more in line with its intention of helping students better learn about this topic, while being easier to use and convenience and user freedom stressed most of all. Improving visual clarity, making the website friendly to mobile users of multiple device shapes, and making the content interesting and simple to understand are the main steps we will take to make the app the best it can be within our scope.

3. Adding Students
    a. We originally designed the "Add Student" page with a single-item field for the teacher to input the student's assigned username.
    b. We updated this design to allow a teacher to enter a list of student email addresses, which will then generate usernames based on the emails and send each student an email to have them create their password.

Justification: This was an important change, because we received feedback that adding students one by one in a class of 20-30+ students would be monotonous and a waste of a teacher's time. Additionally, we originally provided no specific way for students to create their password for their account, so generating an email with a link for the student to set their password will be a secure and efficient way to accomplish this.

4. Exporting Data
    a. Our original design had no functionality for exporting data. The only way to access data was to view it in the site in either the list view of posts, or by scrolling around on the map.
    b. After meeting with the scientist, we updated our design to allow the scientist to export a spreadsheet of the data that has been collected in the application.

Justification: Since the scientist would like to be able to store and analyze the data collected outside of the application, she will need to be able to export the data in a usable format. Our original design focused too heavily on data collection and not enough on analysis.

5. Feedback Form/Contact Information
    a. Our original design allowed the public & all application members to view all posts, with no avenue for feedback.
    b. After discussing the application with our scientist, she agreed that there should be either a form to submit suggestions for updates or editing, or maybe just the scientist's contact information for someone to send her an email with suggestions. The final solution will be decided on when we reach this point in the implementation.

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Justification: Users of the website who care about the information contained in the website and posts should have some way of pointing out errors, inconsistencies, or out-of-date information. This is especially important when considering the nature of the posts: green spaces that can be liable to change, be demolished, or be expanded.