SW Engineering CSC 648/848
Section 01, Team 01
Spring 2018

R-Earth

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Milestone 2

Document Version	Notes	Submission Date
Version 1.0	First Draft	03/18/2018

1. Data Definitions V2

1. Types of Users:
    A) **Non-Registered Users:** Can view the website. Can search through environmental problems.

    B) **Registered User:** Needs to register and sign in. Can submit environmental problems.
        - Name
        - Username
        - Type of User

    C) **Environmental Specialist:** Needs to register and sign in. Can review environmental problems. Can update status of problems. Can provide a descriptive update to the problem. Can report problems as illegitimate.
        - Name
        - Username
        - Type of User
        - Name of agency

    D) **Administration:** Needs to register and sign in. Can delete posts, but cannot edit posts. Can issue warnings to users. Can ban users from website.
        - Name
        - Type of User
        - Username

2. Environmental Listing: Contains information about the listing. Created by registered users. Updated by the Environmental Specialist. Can be deleted by the administrator.
    - Title
    - Date
    - Longitude
    - Latitude
    - Address
    - Zip code
    - Category
    - Status (Reported / In Progress / Illegitimate / Fixed)
    - Registered User Username
    - Picture path
    - Thumbnail path
    - Description by user
    - Environmental Specialist Username
    - Name of Agency

- Environmental Specialist update date (Update Date)
- Environmental Specialist update description (Specialist Description)

3. Registration Entry: Contains information needed to register.
    - Name
    - Username
    - Password
    - Confirmed Password
    - User Type
    - Agency

2. Functional Requirements V2

Priority 1:

Unregistered Users:

1. Unregistered users shall be able to browse listed environmental problems and filter on the basis of category, status and sort by date of report submission.
2. Unregistered users shall be able to search listed environmental problems based on zip code and address
3. Unregistered users shall be able to create and register an account using a username and captcha

Registered Users:

1. Registered users shall have all privileges of unregistered users
2. Registered users shall be able to create a listing of environmental problems using a designated form.

Environmental Specialists:

1. Environmental specialists shall have all privileges of registered users
2. Environmental specialists shall be able to register with their respective agency
3. Environmental specialists shall be able to assign and change the status of an environmental listing.
4. Environmental specialists shall be able to update the environmental listings with a response including a tentative date of resolution, potential/actual cause of the problem, plan of action, action taken to resolve the problem
5. Environmental specialists shall be able to update the status of any environmental listing with any of the following: reported, in progress, resolved, acknowledged
6. Environmental specialists shall be able to monitor environmental listings through the dashboard in order to assign workers to address the environmental problems
7. Environmental specialists shall be able to update the listing to indicate they were unable to confirm the problem

Administrators:

1. The administrator shall have all privileges of environmental specialists
2. The administrator shall not be authorized to edit any environmental listing
3. The administrator shall be able to suspend any registered user if necessary
4. The administrator shall be able to remove any registered user if necessary
5. The administrator shall be able to remove an environmental listing if necessary

Priority 2:

Registered Users:

1. Registered users shall be able to edit their own listings if the status of the problem changes

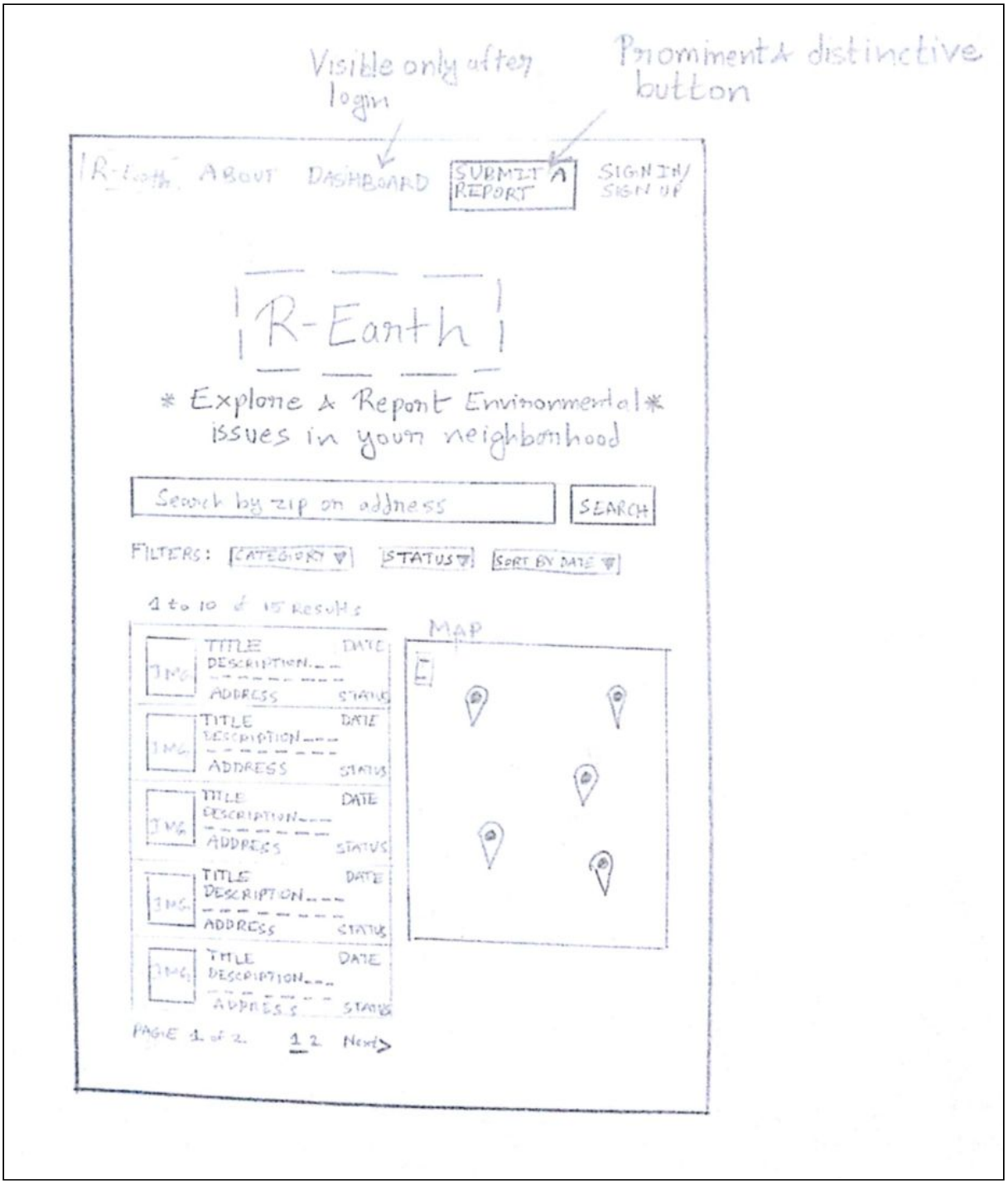
Priority 3:

Registered Users:

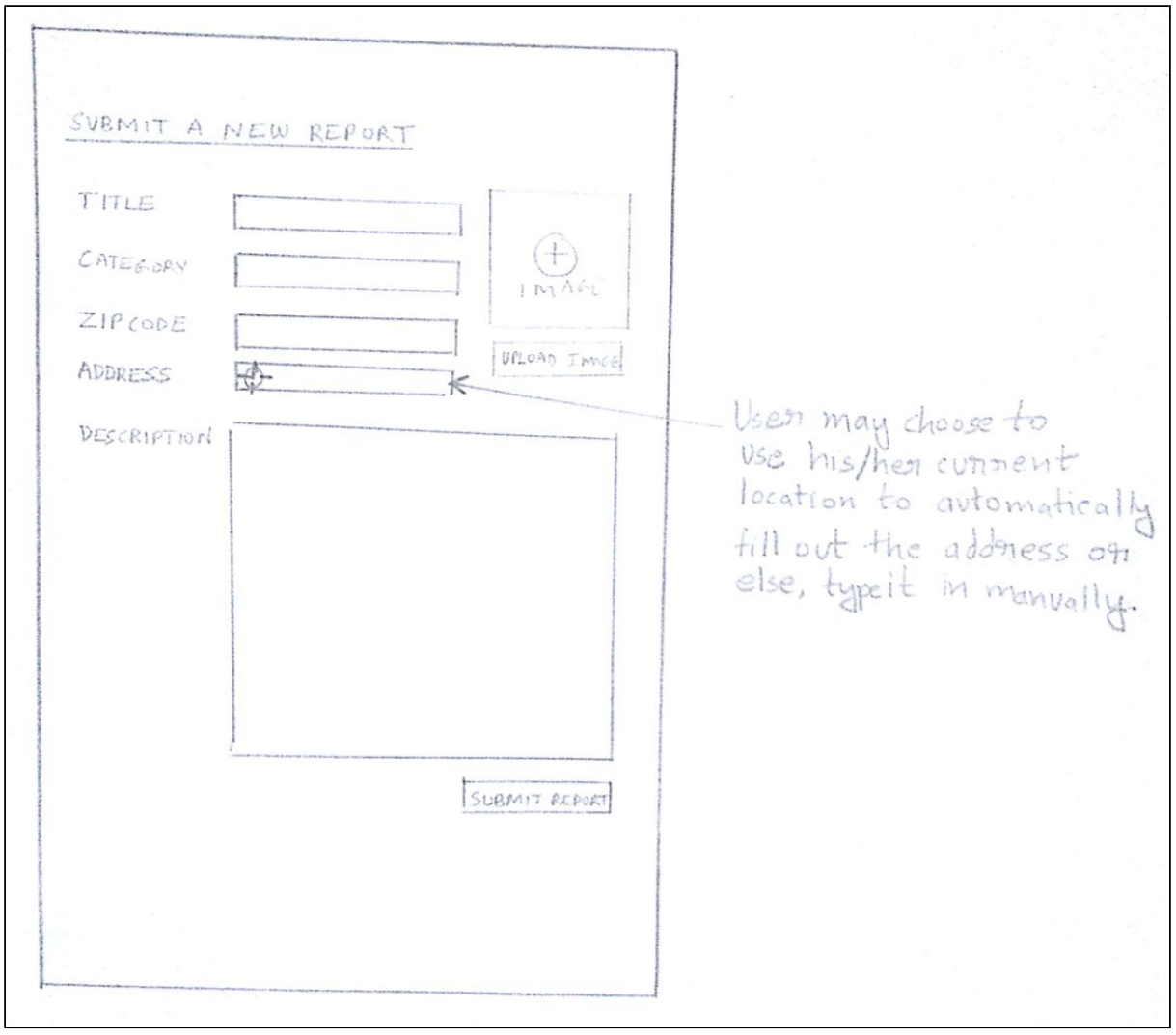
1. Registered users shall be able to edit their profile

3. UI Mockups and Storyboards

Home Page

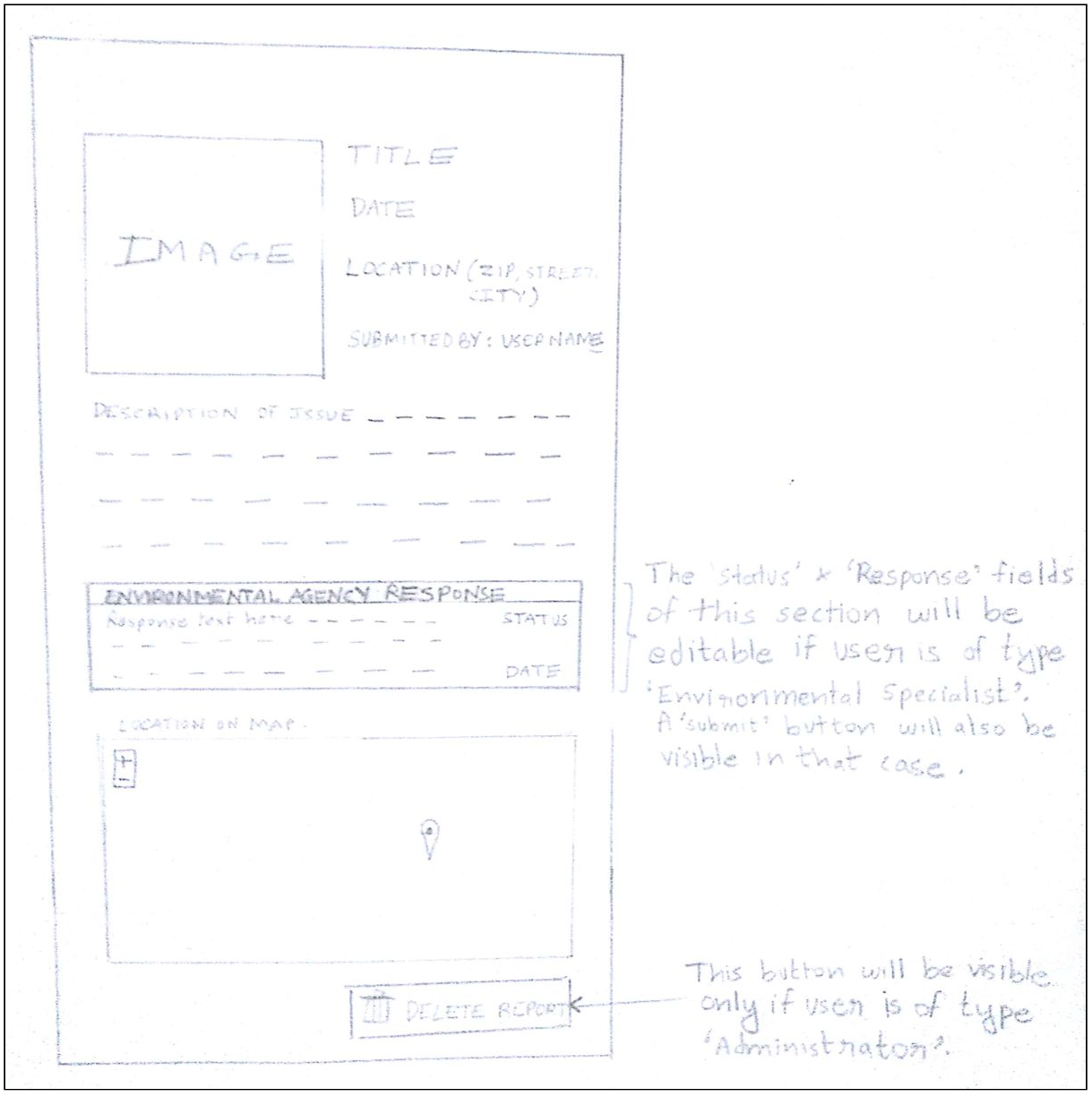


New Report Submission Page



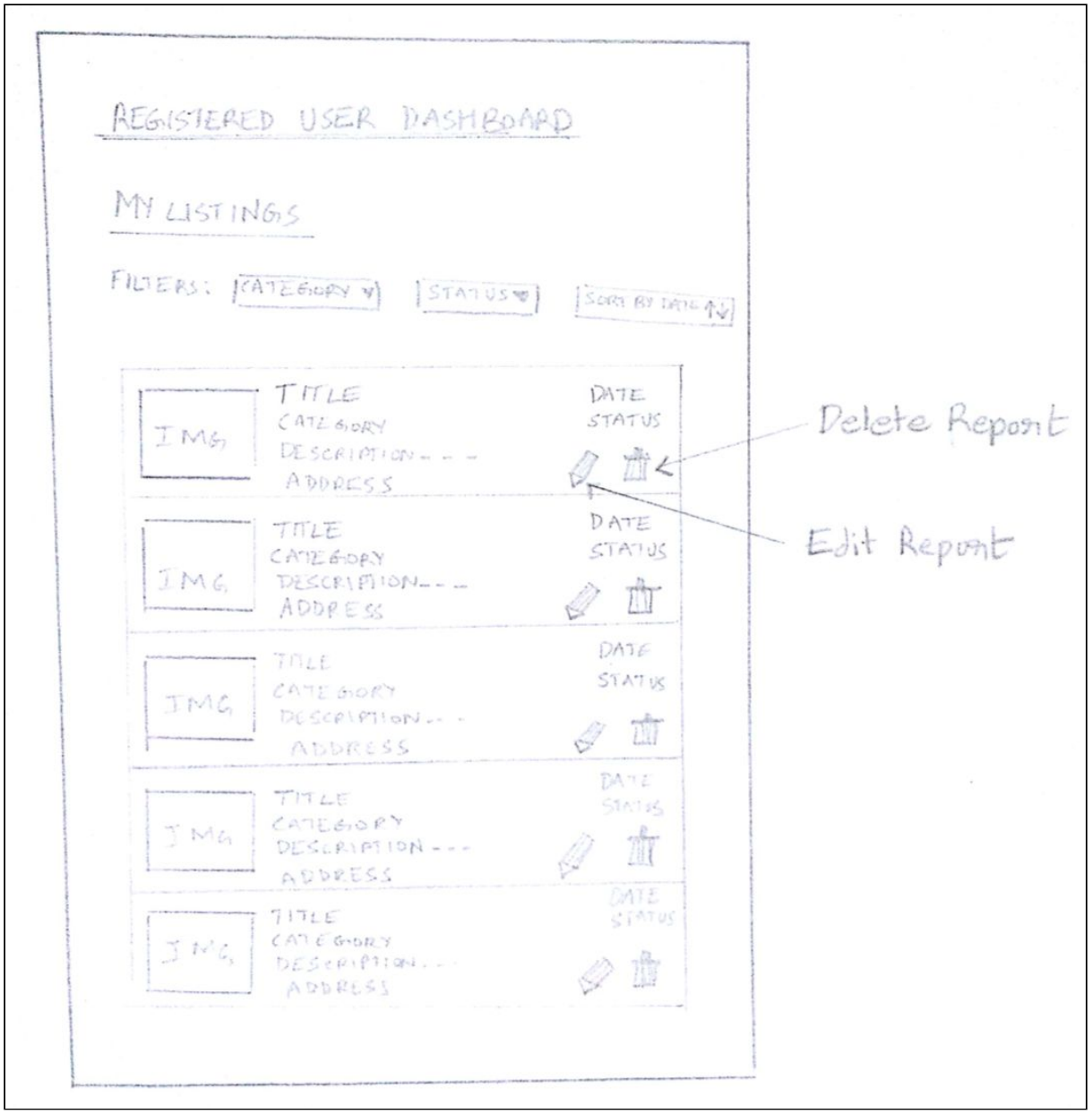
Individual Report(listing) Details Page

The complete details of a submitted report can be seen on this page. There is also one section on this page where the user can see a response and status update given by the concerned environmental specialist. This section will be hidden if there's no response from the specialist.

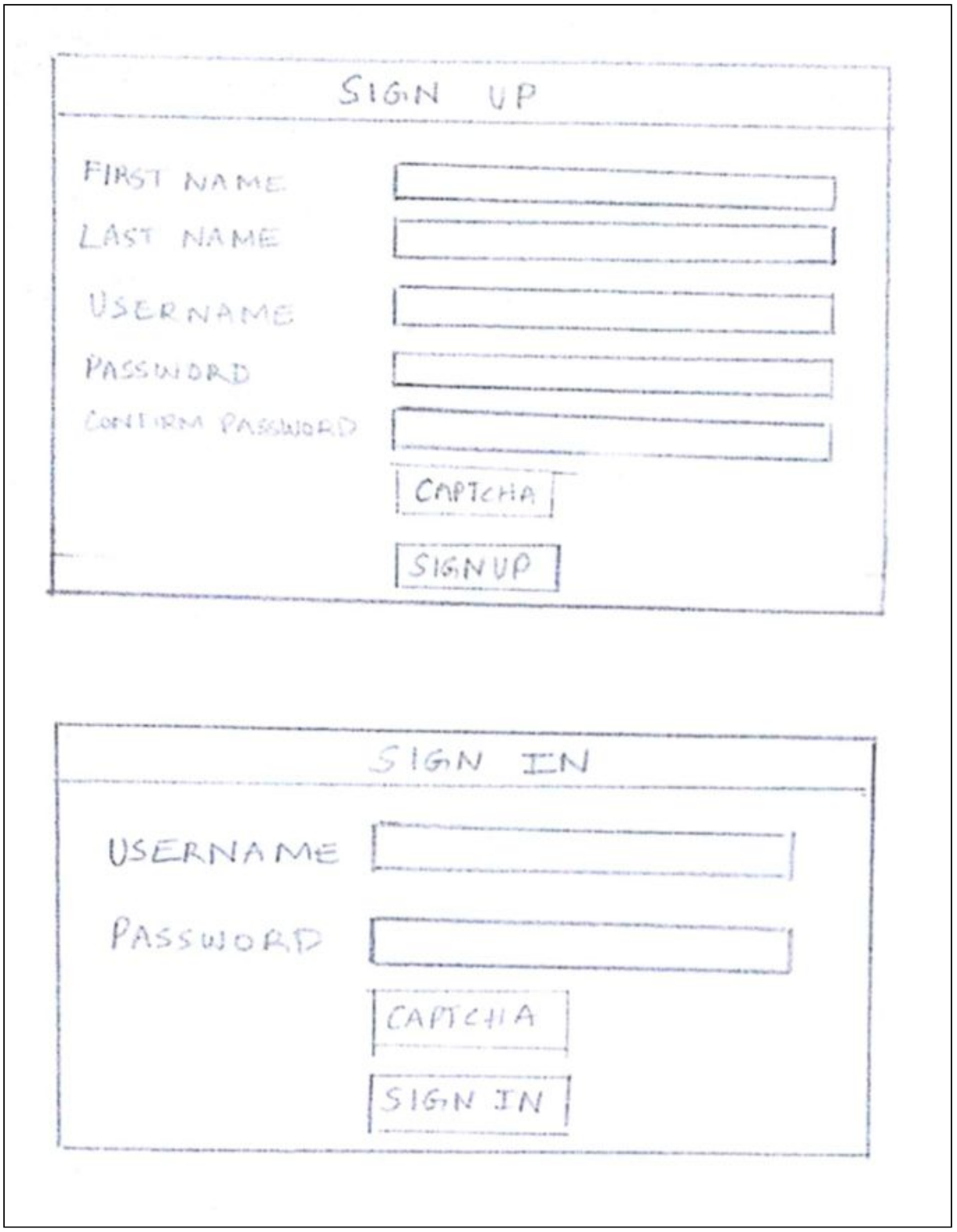


User Dashboard

All registered users will be able to see a list of all the reports they've submitted and edit, delete wherever necessary.

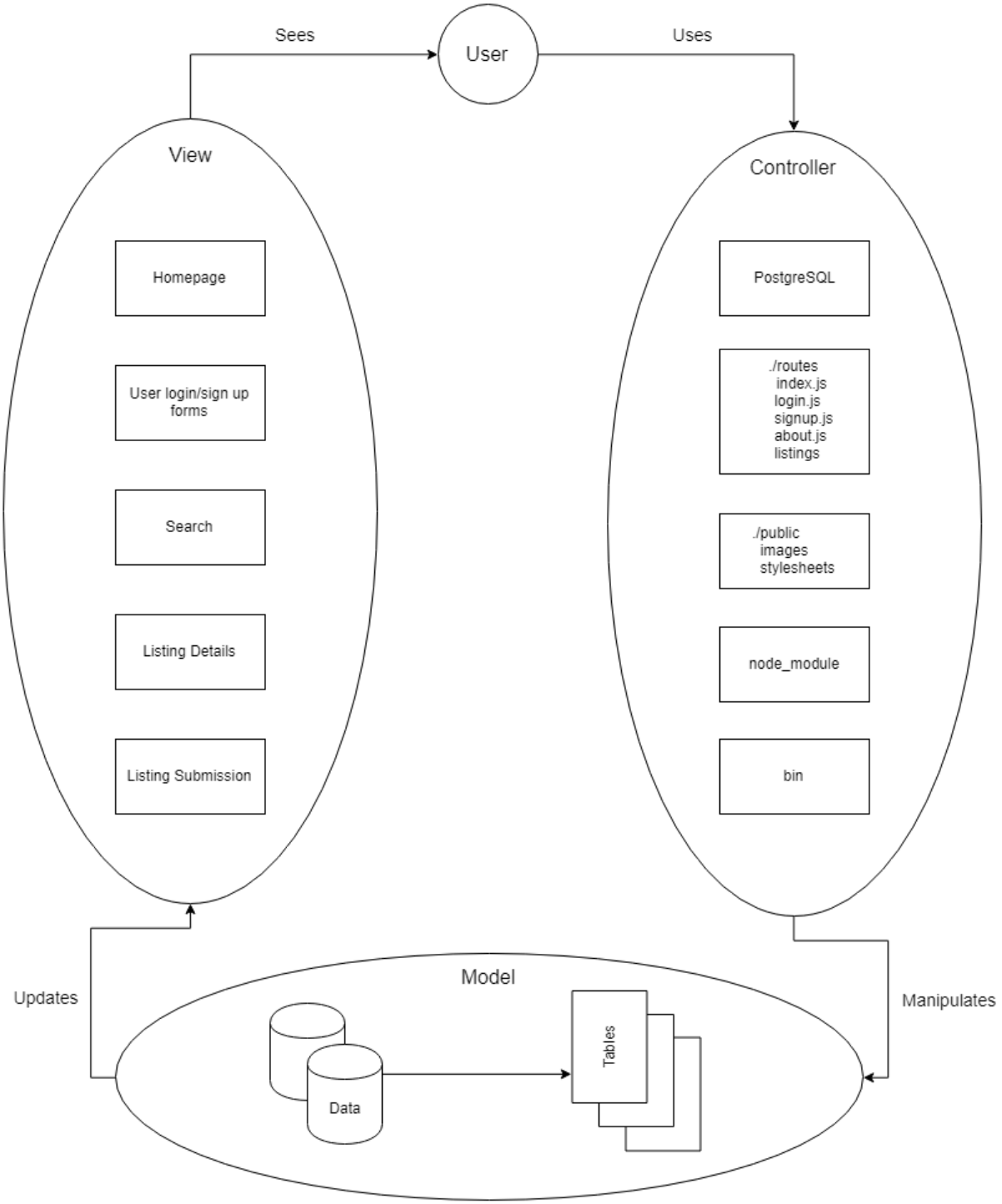


Sign-Up & Sign-In



4. High level Architecture, Database Organization

High Level Architecture:



Database Organization:

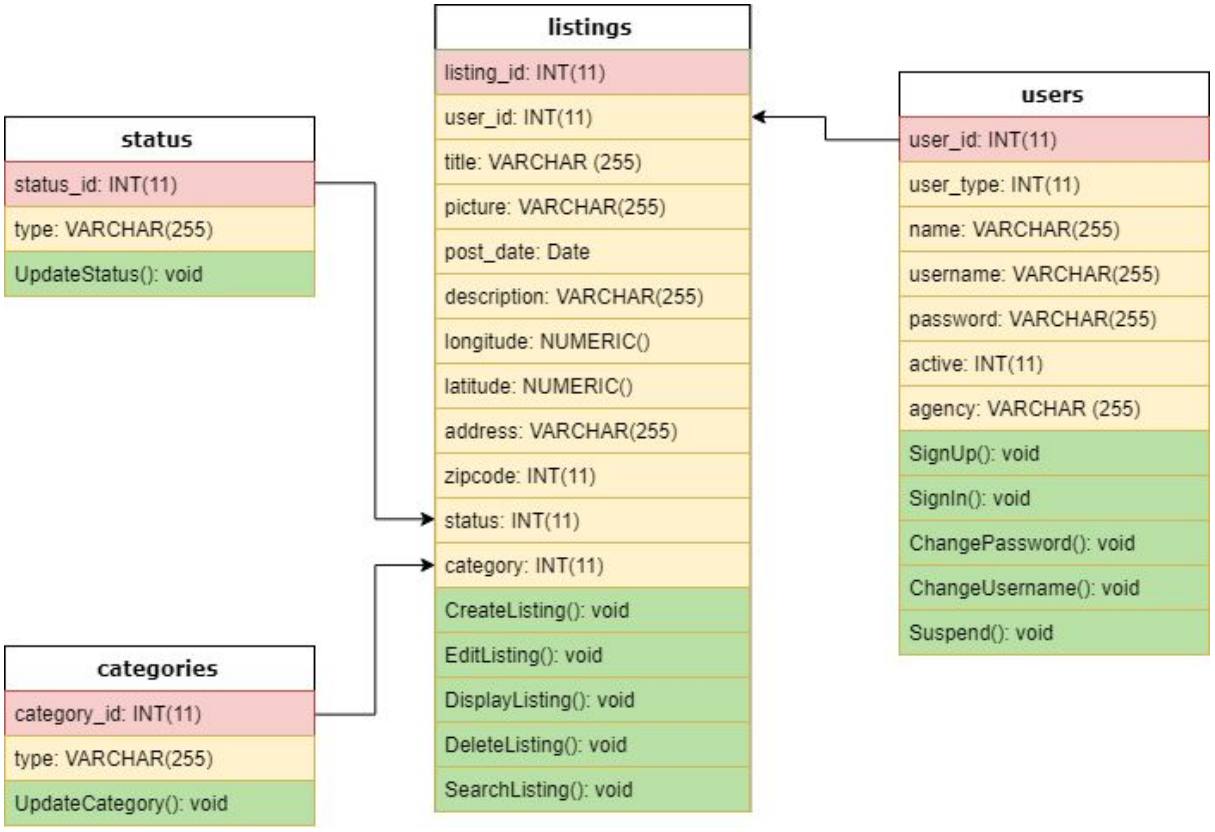
Users:	Listings:	Status:	Categories:
user_id	listing_id	status_id	category_id
name	title	type	type
password	post_date		
user_type	description		
agency	user_id		
active	status		
username	longitude		
	latitude		
	picture		
	zipcode		
	address		
	Category (foreign key)		
	response		
	response_date		

Media Storage: We will be using files system to store the uploaded pictures. Once the picture is uploaded, a 200 x 200 pixel thumbnail will be generated by scaling down the picture.

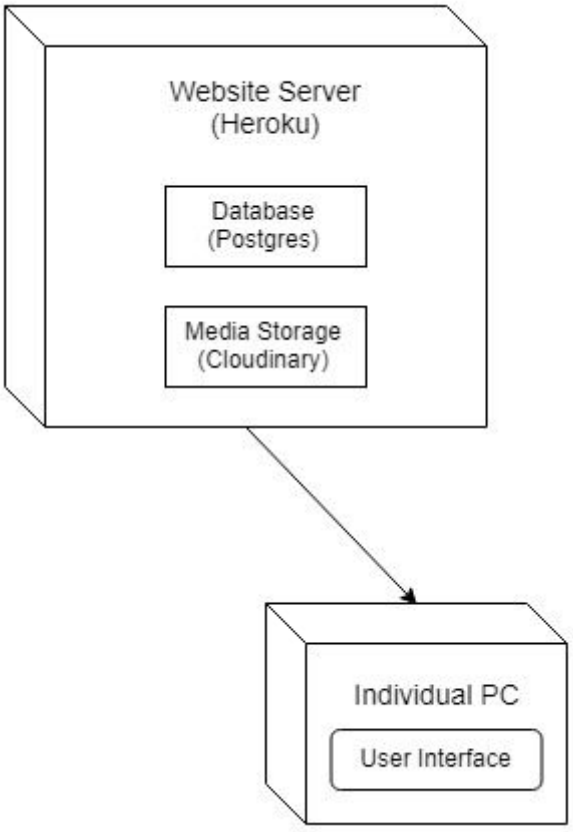
Search/filter architecture and implementation: Users will be able to search zip code and date. When searching for a zip code, the user will be able to see all listing within the zip code entered. When searching for a date, the user will be able to see listings before or after the date entered. The searches will use full-text search when a correct zip code is entered and %like when a zip code without any entries is entered. The search will use the environmental listing's zip code for the search results.

5. High Level UML Diagrams

High-level UML Class Diagrams:



UML Component and Deployment Diagrams:



6. Key Risks for the Project

1. Skills Risks: This project is introducing the members of our team to many new frameworks & tools which have a steep learning curve. This will be overcome by the inexperienced members going through relevant tutorials online. Furthermore, the more knowledgeable team members will help the inexperienced team members with code and any questions they have.
2. Schedule Risks: Due to classes and personal lives, we only have a small time window before class where all team members are available for a meeting. All other scheduled meetings will most likely have a portion of the team. This will be overcome by posting a detailed summary of the meeting and necessary pictures on Slack for all team members unable to make the meeting.
3. Technical Risks: This is the first time members are trying to build a full fledged website. Hence, it is an interesting yet challenging environment for the team to work in. Another technical risk lies in the fact that we are deploying the website on a remote Heroku server. Meanwhile we have multiple group members to manage, all pushing through to git.
4. Teamwork Risks: Merge conflicts may occur when pushing to github. We've had a thorough discussion on using certain git strategies. Also, task assignment and collaboration needs to be done on the basis of individual member's technical strengths.
5. Legal/Content Risks: Content copyright issues. When the site gets deployed publically, we could run into risks of users uploading photos/videos that aren't theirs. We are also going to ensure that the website assets such as images and text do not contain any copyrighted material.