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Mid-Semester Collaboration Report Sustainable Media

Stage I: Team Identification

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Stage II: Elaboration - Project Proposal Specifications

1. Problem statement

- a. In New Jersey, there are several towns and municipalities that have several problems regarding sustainability. These problems could possibly include pollution, water scarcity, energy, food production, and other environmental problems. Although most people in a particular town may be aware of their sustainable issues, others in Jersey would not be. If other people in New Jersey are not aware of the problems affecting their communities, then it's impossible for those problems to be solved. If more people knew about their sustainable issues, then it's possible that a solution could be provided.

2. Objective of the module.

- a. The objective of the module is to bring awareness to sustainable issues in New Jersey communities. Our web application should be able to help users have a means of voicing out local sustainability issues while also giving journalists a platform to write about these issues. Members of New Jersey communities and journalists will both benefit from our website because it will give them both a voice and possibly help provide a solution for their local problems.

3. Description of the desired end product, and the part you will develop for this class.

- a. For this project, we would like our end product to be a functioning website for both journalists and members of the community. Residents will be able to log on and submit problems going on in their communities, while journalists will be able to access these submitted problems and write articles about them to post on the website. Soon after the articles are written, residents of the community will be able to read them and understand how the problem will be addressed. We hope to implement all these features this semester so that way it could possibly be integrated into the SR Hub website.

4. Description of the importance and need for the module, and how it addresses the problem.

- a. This module will help solve problems in communities at a much quicker pace. The quicker these small problems are fixed, the more time a community can spend on improving itself in many different areas, such as technology and sustainability. Not only will it allow journalists to write about issues, it will also let any resident read about a problem so they are aware of it and could even try to help solve it. By adding this feature to the SR Hub website, communities could come together more than ever before to address these issues.

5. Plan for how you will research the problem domain and obtain the data needed.

- a. JPW students will do outreach and reporting to find real world problems that CS students can add into the database, as well as brainstorming ways to improve the site and its accessibility.
- b. Each piece reported from the data collected by the JPW students will be stored manually at first. The data represented by the resident “users” will be stored on the website via a form. Then accredited journalists will have access to write articles based on what is written on these forms by the residents.

6. Other similar systems / approaches that exist, and how your module is different or will add to the existing system.

- a. One similar system is potentially Facebook. With pages/profiles dedicated to this kind of work, people are able to collaborate. However, our site would be all on one page, which could potentially be different than this system. It would allow for

a more concise collaboration, and can distinguish articles written by certified journalists from users who are raising the issues initially.

- b. We will be adding to the websites that already exist
 - i. Civicstory.org
 - ii. SRhub.org

7. Possible other applications of the system (how it could be modified and reused.)

- a. It can be used for schools
 - i. Problems in a school environment can be made aware of

8. Performance – specify how and to what extent you will address this.

- a. Fast, people both members of communities and journalists should be able to easily access the forms or database.
- b. It will also be easy to navigate and user-friendly. (ADA compliant)

9. Security – specify how and to what extent you will provide security features.

- a. Have employees of the website verify a form once it is submitted by a user
- b. Firewalls to make sure the website is not hacked

10. Backup and recovery – specify how and to what extent you will implement this.

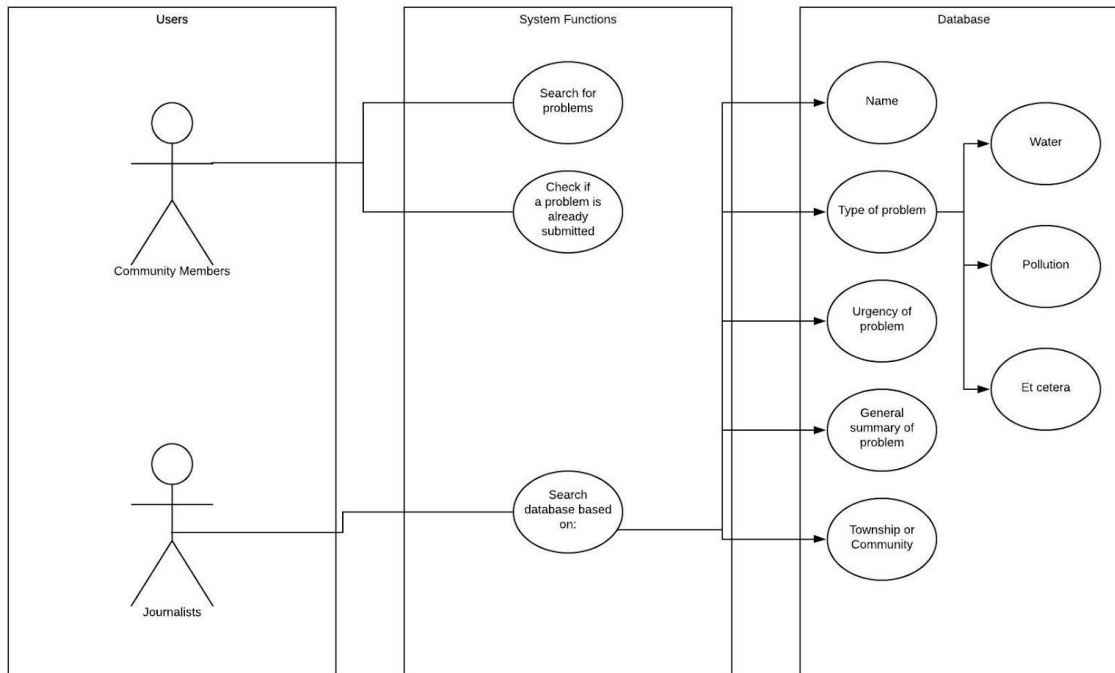
- a. We would backup the website using a tool
 - i. Github?
- b. For database, we can back it up through drive & github

11. Technologies and database concepts the team will need to learn, and a plan for learning these.

- a. Postgres
- b. SQL
- c. Python
- d. JavaScript
- e. HTML
- f. CSS

12. A diagrammatic representation of the system boundary that specifies what data you will model and which queries you will implement.

- a. Members of Community:
 - i. Search for problems
 - ii. Check if a problem is already submitted
- b. Journalists will be able to search the database based on:
 - i. Name
 - ii. Type of problem
 - 1. Water, pollution, etc.
 - iii. Urgency of problem
 - iv. General Summary of your problem
 - v. Township/Community



13. Name of the Website:

- a. Sustainable Media

14. Roles of Members:

- a. Anushka Krishnakumar: Website Design/Database/Project Leader
- b. Lisa Walker: Website Design/Database
- c. Madison Pena: User Outreach/Form Verifiers
- d. Samantha Russo: User Outreach/Form Verifiers
- e. Gavin Bowman: Database/Security
- f. Kevin McGrath: Database/Security
- g. Katrina Gutierrez: Website Design/ Database

Objective

- Create a website extension of civicstory.org and srhub.org that offer citizens of New Jersey a form of communication to bring awareness to the problems in their community
- Members of the community would be able to enter their information regarding their community in a database and journalists would be able to access that database and write stories based on the testimonies of the community.



Approach

Website/Database Design

- Collect and store data input from users
 - Personal info and area of concern of users responding
 - Personal info and valid credentials of journalists
- DBMS via SQL
 - Organize queries → Insert, search, update, delete, modify database records
 - Create two search engines → One for response users to search topics, another for journalists to search for responses along with access to limited user info
 - Organization of responses as queries based off word choice, and user created tags.
 - Implements a process of validation for journalist credential input.

Key Milestones

- | | |
|------------------------------------|----------|
| • Create Form | 02/24/20 |
| • Design the website | 03/16/20 |
| ◦ Database Model | |
| • Connect website & database | 03/30/20 |
| • Make credentials for journalists | 04/20/20 |
| • Outreach for Users | 04/27/20 |
| • Demo/Test Website | 05/04/20 |

02/24/2020

Stage III: Elaboration - Database Model

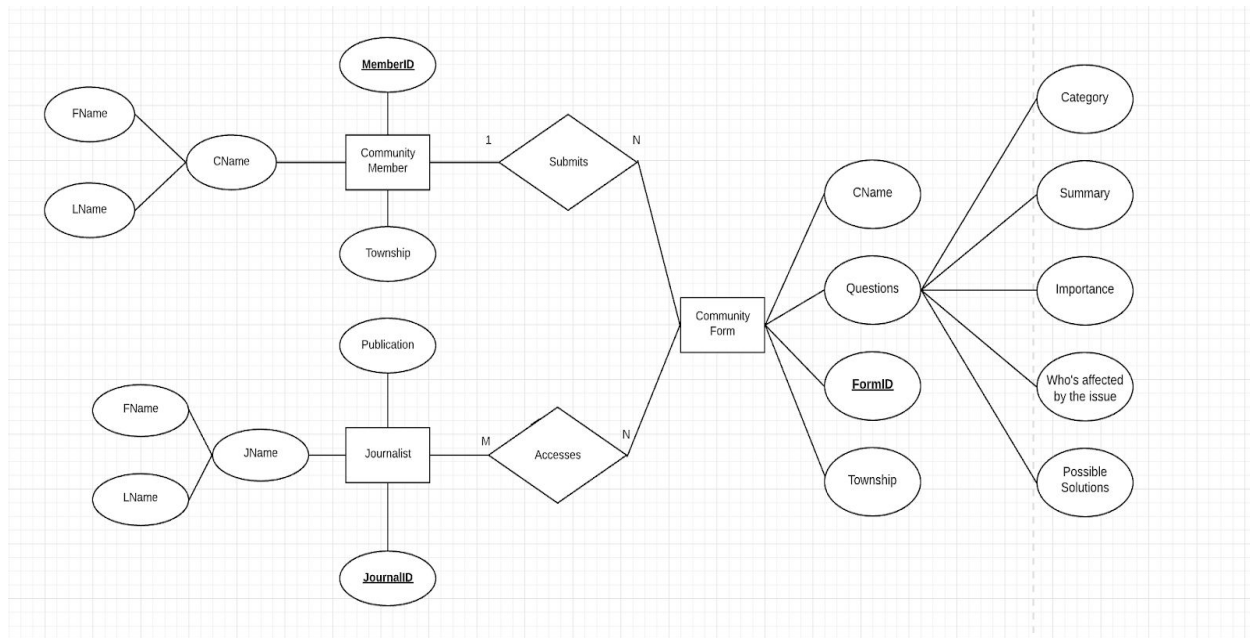
ENTITIES: Attributes

- **Journalist:** JournalID, JName (FName, LName), Publication
- **Community Member:** MemberID, CName(FName, LName), Township
- **Community Form:** FormID, CName, Township, Questions(Category, Summary, Importance, Who's Affected by Issue, Possible Solutions)

Map the ER diagram to a relational schema

- Community Member Submits Form (1:N)
- Journalist Accesses Form (M:N)

<https://www.lucidchart.com/invitations/accept/06969d02-1f46-4739-84ea-88f181d1cf50>



Additionally, based on your research and understanding of the social justice issue, estimate the following:

- We anticipate our database to initially be limited in size based on our resources. We hope to be able to populate it with at least one hundred entries initially. Ideally having one hundred journals available for members to consult will give them the necessary resources to continue to contribute and add to the database.
- Types and average number of searches
 - Searching through the database content is predicted to be more useful for journalists than community members. Types of searches we estimate that they would use are keyword searches either by searching the words or a typed out string. String searches would use a stop word search function that selects only keywords that are followed by a stop word (such as *the, an, at, for, from, then*). These queries then search through all user submissions and select where it is most frequently used in the form. Categorical searches may also be implemented for better searching through the forms. If a categorical search is implemented for journalist access only, for example, to find problems in a certain community, then queries will be modified to allow searches that collect attributes that match the search in that column of the database.
 - A categorical and keyword search may be also used for community members who want to browse through problems in their communities if we do to implement it.
 - The average number of searches we estimate to occur is limited. The number of searches would be from the community members and journalists, which we believe will be around a few searches per member. We do not expect our search queries to back up too much.