Team: Shampoo: Brandon, Rebecca, Elise, Cristian, Phil, James
Dr. Pulimood
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Collaborative Project: Stage IIIa – Requirements Modeling and Analysis

Security

As most of our work focuses on data gathering and web scraping our modules create few security risks. An important concern when web scraping is the quality of the data collected; it is important to be sure there is nothing malicious hidden within the data. However, our primary sources for data are safe government websites, making the concern of malicious code inapplicable for our work.

Another concern when discussing the security of a system is preventing unapproved access to sensitive data. This could include unauthorized access to a user's account or their personal data. These considerations are inapplicable for the modules we plan to introduce as we are not dealing with sensitive data or personal information.

The largest security considerations that must be made for our module deals with the search bar for the map function. This is a point of weakness that could allow for SQL injections and other forms of intrusion. Overall this is only one point of weakness that can be thoroughly tested to prevent any security flaws.

Backup and Recovery

With the focus of our module largely aimed at data collection, storage, and display, there is a large need for methods to accommodate data backup and recovery. Our approach for data backup is to store all of the scraped information in a temporary database, which can then be referenced to populate the data in the SOAP database. In the event that data loss occurs, the temporary database can be used to repopulate the main SOAP database.

While this may be a satisfactory solution for backup and recovery, meeting the basic needs of SOAP, our approach includes an additional and more reliable method. The web scraping modules can be coded as scripts that may be run at any time, recollecting the information from the websites simply by running a script. This script will encode the information into an SQL file that can be used to populate the database. Therefore, at any time the data can be easily collected and entered in the database. Aside from the backup and recovery functions that this provides it can also be used for easily updating and maintaining the information within the SOAP database.

Legal Issues

When developing a system such as SOAP, the legal implications bust be thoroughly considered to ensure our work is not violating any laws. This may include common considerations such as respecting personal privacy and copyright infringement. For our specific module we considered the permission for scraping data from websites as a potential legal issue. However, we determined this not to be an issue as we are only scraping information from a government website with all publically available information.

While we can collect data on various chemicals or government representatives there are some limits to the data we can display on SOAP. The data displayed is primarily restricted by the representative's right to privacy. We would be violating this right by providing contact information such as phone numbers or email addresses. A solution to this issue is simply providing a link to the government webpage where the contact information is hosted. Therefore our module can provide users with useful information to help them decide which representative to contact. Following this the user can follow the link to their selected representatives contact information hosted on the government website.

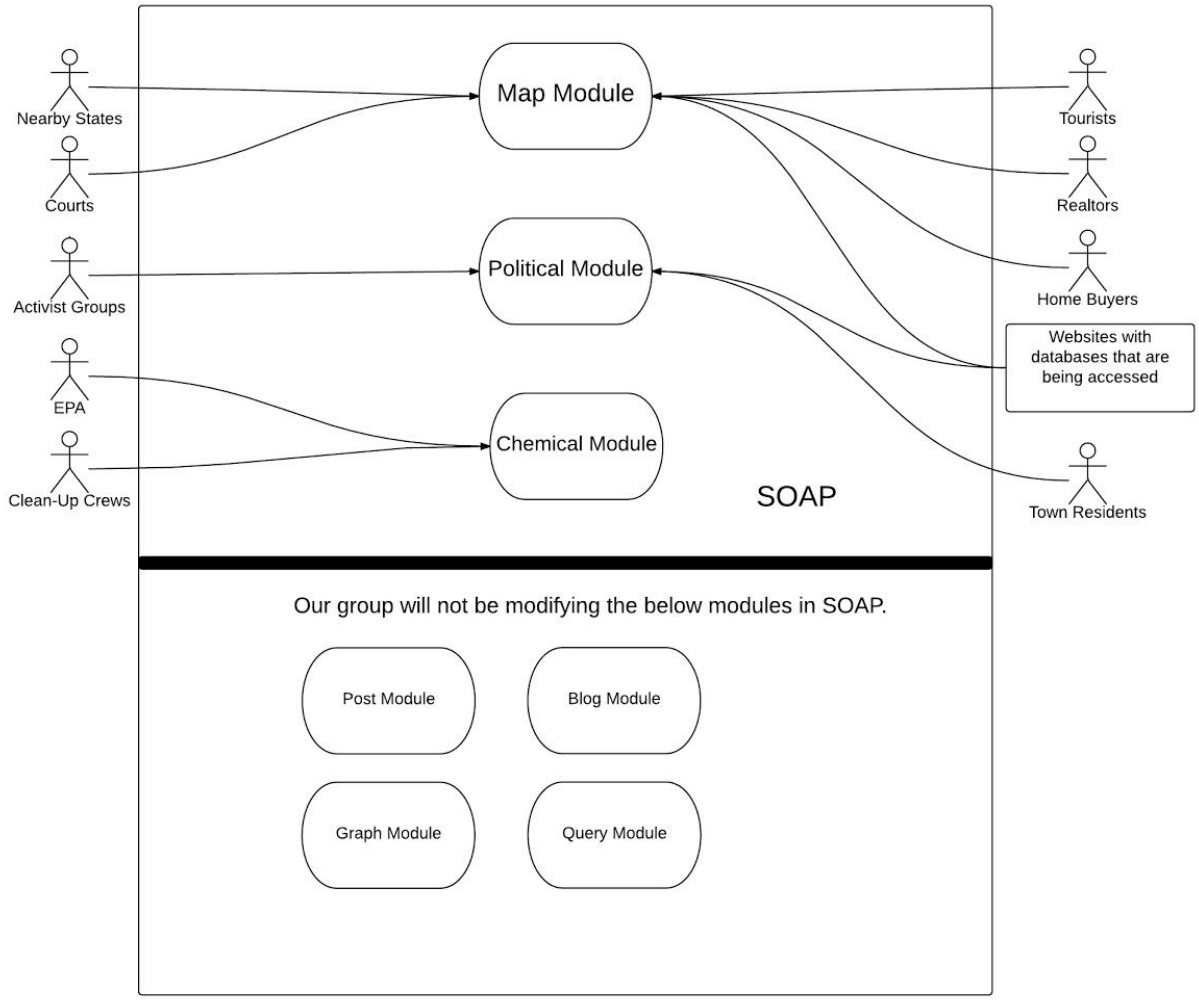
Possible Applications of SOAP

One application of the system makes use of the map. The map module is an important feature that SOAP provides to its users. The map allows for the various stakeholders of the webpage to clearly pinpoint the facilities that could be chemically dangerous all throughout New Jersey. Users need to be able to view a map and determine if there are facilities in their area. Simply providing the address of the facility is not enough. A user may not be able to determine their relation to a facility based on an address.

Another application for the system is that a user can access chemical information. The chemical module is important for residents, construction workers, and all other stakeholders to be able to gain information on the chemicals. Users of the website have an interest in how these chemicals could affect them and how dangerous they are.

Users also have the ability to access information about the politics behind SOAP. The politics module provides the important functionality to allow users to take action. By giving the viewers of the SOAP site the political figures who have an invested interest in the polluted facilities, it gives them the opportunity to reach out to someone with power to make a change.

Use Case Diagram


Nearby States
Courts
Activist Groups
EPA
Clean-Up Crews
Map Module
Political Module
Chemical Module
SOAP
Tourists
Realtors
Home Buyers
Websites with databases that are being accessed
Town Residents
Our group will not be modifying the below modules in SOAP.
Post Module
Blog Module
Graph Module
Query Module

Use-Case Descriptions

Map Module Use Case Description

Preconditions

- End-user is on the SOAP Website
- The system contains the data on the facilities locations

Trigger

- End-user is interested in visualizing the location of a facility

Scenario

1. End-user goes to the home page of the SOAP website
2. The system displays the home page
3. End-user selects the visualize module
4. The system displays drop down with 2 options: Map and Graph
5. End-user selects the Map module
6. The system displays the map functionality page with up to date and accurate locations of all facilities
7. The system asks the end-user if they would allow for the user of his/her current location
8. End-user allows the system to use his/her current location
9. The system determines the end-user's location
10. The system drops a pin at the user's current location
11. End user explores the map with the pin drops of the locations of facilities
12. End user selects a facility of interest based on the drop pin on the map
13. The system displays data of a facility in a pop up window

Political Module Use Case Description

Preconditions

- End-user is on the SOAP Website
- End-user has information on a facility and it's chemicals chemicals
- The system contains the data on the facilities locations

Trigger

- End-user is interested in finding out what political figure to contact in order to inquire action on a facility or facilities in an area

Scenario

1. End-user goes to the home page of the SOAP website
2. The system displays the home page
3. End-user selects the data module
4. The system displays drop down with 6 options: Posts, Chemicals, Facilities, Politics, Query and Uploads
5. End-user selects the Politics module
6. The system displays a page with two different options of political figures: Senate and Representatives
7. End-user selects either Senate or Representative
8. The system displays all the up to date and accurate political figures associated with either Senate of Representatives, along with their name, party, and district
9. End-user explores the political figures displayed on the page
10. End-user finds a political figure who they wish to contact
11. End-user selects the email a legislator link
12. The system sends the user to the external system to contact political figures

Chemical Module Use Case Description

Preconditions

- End-user is on the SOAP Website
- The system contains the data on the facilities locations

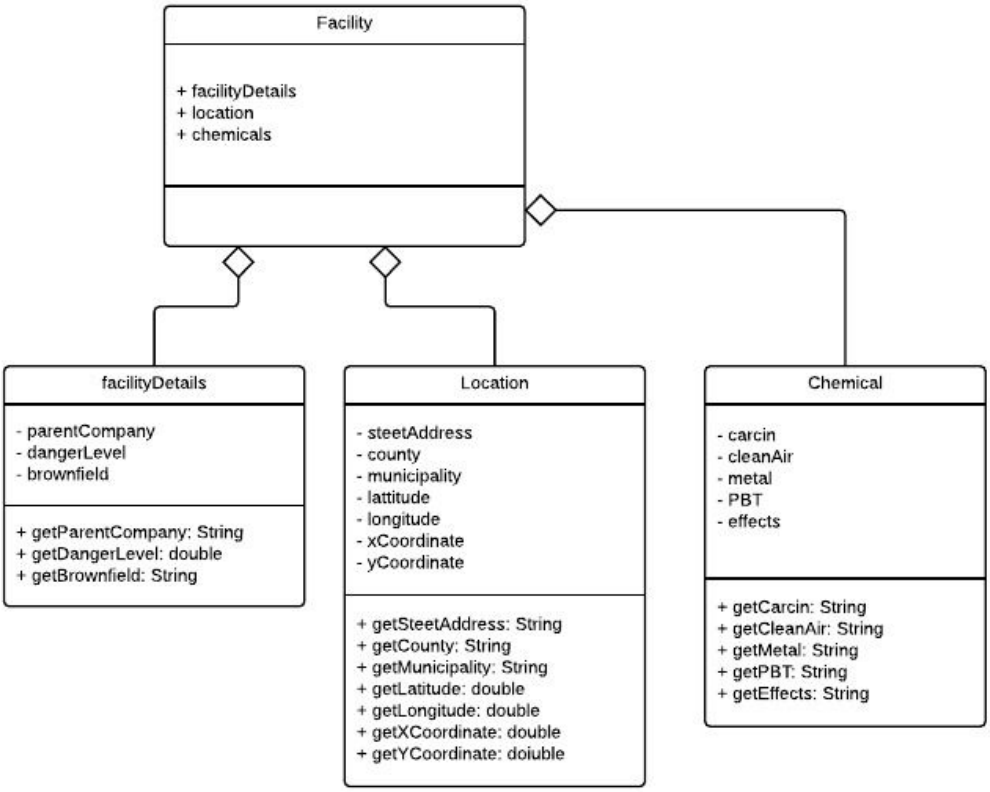
Trigger

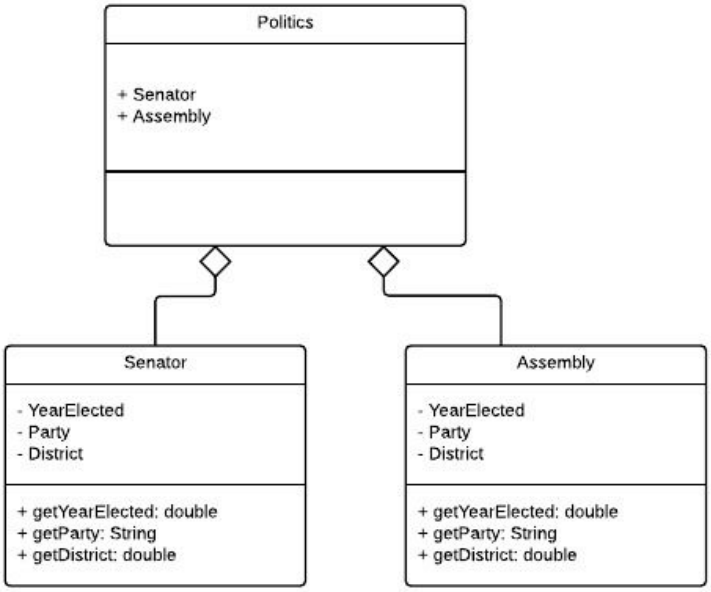
- End-user is interested on gaining information on chemicals and seeing which facilities have these chemicals

Scenario

1. End-user goes to the home page of the SOAP website
2. The system displays the home page
3. End-user selects the data module
4. The system displays drop down with 6 options: Posts, Chemicals, Facilities, Politics, Query and Uploads
5. End-user selects the Chemicals module
6. The system displays a list of up to date and accurate chemicals
7. End-user explores the list of chemicals displayed on the page
8. End-user finds a chemical that they wish to inquired more information about
9. End-user selects the chemical
10. The system displays more information about the selected chemical along with a list of facilities that contain this chemical

Analysis Class Diagram





VM Information

server: csc415-team01
login: sysadmin
password: csc4151

student1: Brandon
password: mazz4151

student2: Rebecca
password: shaber4151

student3: Elise
password: janczewski4151

student4: Cristian
password: vel4151

student5: Phil
password: baldoni4151