

## **CPS 406 Second Iteration Report**

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Group 10

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# CYPRESS

## City of Toronto Problem Reporting and Solution System Requirements Document

### 1. Introduction

#### 1.1 Purpose:

The Cypress system is designed to allow citizens to report problems that concern them about their city that they notice on the streets. Along with that they will be able to follow up on the status of their problem from when it is first reported and until a solution is found.

This document outlines the features of the CYPRESS system which will illustrate the guidelines of the developers and provide the client with the necessary software validation document.

#### 1.2 Scope:

The following describes what features are in the scope of the software and what are not in the scope of the software to be developed. In Scope:

- a. Managing reported problems from citizens, which includes maintaining information about the citizens as well as maintaining their profiles, their complaints, their suggestions and maintaining their privacy and security.
- b. Computing the amount of complaints per a specific problem and elevating that problem on the list of problems that are known on a priority list.
- c. Providing the unique user who first reported about a specific problem with an email outlining what the user of the Cypress system (City of Toronto Road Safety Officials) plans to do to resolve the issue and also provide a minimized version of this solution to all others who have reported a similar or the same problem.
- d. Downloading the most current map of the City of Toronto from the web in order to stay precise and up-to-date for the citizens who wish to report problems they have noticed.
- e. User authentication. Out of Scope:
- a. Features for allowing citizens to get involved beyond the jurisdiction of this system to solve a particular problem.
- b. Any other city related issues like parking tickets, building construction issues or any other city related problems.

### 1.3 Definitions, Acronyms, and Abbreviations:

#### Acronyms and Abbreviations:

- a. CYPRESS: City of Toronto Problem Reporting and Solution System
- b. SRS: Software Requirements Specification.
- c. WWW: World Wide Web.
- d. GUI: Graphical User Interface.
- e. CYTRSO: City of Toronto Road Safety Officials (Users)

#### Definitions:

- a. Problem: A real event that involves property damage to the City of Toronto.  
In the  
context of potholes, utility failures, tree collapse, flooded streets, property vandalism, mould and spore growth, eroded streets and garbage/ road obstructions.
- b. Security: A set of characteristics which must match when an entity logs in with a specified user name in order to be given access to the system.
- c. Portfolio: A set of data for a particular user who is active in the system.

### 1.4 References:

Appendix A: User Screens.

### 1.5 Overview:

The following topics of the SRS are organized as follows: Section 2 gives an overall description of the software. It gives what level of proficiency is expected of the user, some general constraints while making the software and some assumptions and dependencies that are assumed. Section 3 gives specific requirements which the software is expected to deliver. Functional requirements are given by various use cases. Some performance requirements and design constraints are also given. Section 4 gives some possible future extensions of the system. Finally the appendices in Section 5 describe respectively the user screen.

## 2. Overall Description:

### 2.1 Product Perspective:

CYPRESS is tailored towards people who value their environment and want to make it a better and safer place for others. CYPRESS should be a simple piece of software that allows a citizen to report a city road or property problem to CYTRSO, the users at the Toronto City Council. CYPRESS should provide a user friendly map that allows the user to pinpoint the exact location of the problem that they are reporting, hence making it easier for the city workers to fix the problem as soon as possible. CYPRESS will also make sure to notify the user when the city has received their report and as well if steps have been taken to solve the problem. In order to ensure that no false reports are being posted, CYPRESS will check with a list of citizens that reside in Toronto, thus making the whole CYPRESS program a faster way to make the city better and safer.

### 2.2 Product Functions:

CYPRESS should support the following use cases:

| Class of use cases                       | Use cases          | Description of use cases                        | Implemented? |
|--|--------------------|---|--------------|
| Use case related to System authorization | Login              | <i>Login in to CYPRESS</i>                      | <i>Yes</i>   |
|  | Cancel             | <i>Moving away from login page</i>              | <i>Yes</i>   |
| Use case related to the select language  | English            | <i>Move User to English page</i>                | <i>Yes</i>   |
|  | French             | <i>Move User to French page</i>                 | <i>Yes</i>   |
| Use case related to Registering          | Enter Information  | <i>User enter their information to register</i> | <i>Yes</i>   |
|  | Create Username    | <i>User chooses a username</i>                  | <i>Yes</i>   |
|  | Create Password    | <i>User chooses a secure password</i>           | <i>Yes</i>   |
| Use case related to information change   | Change Information | <i>User changes their information</i>           | <i>Yes</i>   |

|  |                   |  |     |
|--|-------------------|--|-----|
| Use case related to creating report    | Create Report     | <i>User chooses to create a report about a specific location</i>   | Yes |
| Use case related to editing report     | Edit Report       | <i>User chooses to edit the report that they have created</i>  | Yes |
| Use case related to deleting report    | Delete Report     | <i>User chooses to delete the report</i>   | Yes |
| Use case related to rankings of report | Rankings          | <i>Rank each report based on the location and how many complaints of the same report has been received</i> | Yes |
| Use case related to resolution         | Report resolution | <i>System notifies city council about the report</i>   | Yes |
| Use case related to notification       | Notification      | <i>System notifies the user if their report has been taken in to consideration</i>                         | Yes |
| Use case related to FAQ                | FAQ Questioning   | <i>System show a list of common question and answer for the user</i>                                       | Yes |
| Use case related to Contacting         | Contacting        | <i>System provides a list of contact information for the user</i>  | Yes |
| Use case related to logout             | Logout            | <i>System logs the user out and saves the last saved input</i>   | Yes |

### **2.3 User Characteristics:**

- a. The User should be reliable.
- b. The User should know the details and location of the problem.
- c. The User must have a fair bit of knowledge about the city of Toronto (current mayor, streets, laws, etc.).
- d. The User must have sufficient vocabulary skills and adequate grammar.
- e. The User must be competent when using a computer and the internet, and know that nothing is completely confidential but privacy from the city's side is guaranteed.

### **2.4 Principal Actors:**

The two principal Actors in CYPRESS are “user” and “system”.

### **2.5 General Constraints:**

- a. For full working CYPRESS requires Internet connection.
- b. CYPRESS is single-user software that takes user input.

### **2.6 Assumptions and Dependencies:**

- a. Full working of CYPRESS is dependent on the availability of Internet connection.
- b. Access to CYPRESS is found in [www.toronto.ca/cypress](http://www.toronto.ca/cypress) .CYPRESS would not work on any other website.

## **3 Specific Requirements:**

### **3.1 Functional Requirements:**

We describe the functional requirements by giving various use cases.

Use cases related to initial visitation to CYPRESS website:

**Use Case 1: Language Selection**

Primary Actor: User

Precondition:None

Main Scenario:

1. User arrives at website; default language is set to English Alternative flow:

1. (a) User changes language

1. (a)1. User clicks on language option button to change language to French

CYPRESS



City of Toronto

English | French

## Use Case 2: Registration

Primary Actor: User

Secondary Actor: System

Precondition: None Main Scenario:

1. User goes to the website, and clicks the register option button and is redirected.
2. User must agree to terms and conditions of this site
3. User provides personal information and login name and password
4. System checks that password is secure enough and login name is free Alternative flow:
4. (a). Login name/ password is not secure
4. (a)1. User is re-prompted to enter new login name / password
5. User is taken back to main page of website

The screenshot shows a web browser window with the Cypress City of Toronto logo in the top left corner. The page title is "Register". Below the title, there is a heading "Please enter information below:" and a note "Please note: Username and Password are case sensitive". The form contains several input fields: First Name, Last Name, Address, Phone Number, Email Address, Username, Password (with a note "(8 characters min)"), Security Question, and Answer. At the bottom of the form, there is a "Role" dropdown menu set to "User" and a blue "Submit" button.



**Use Case 3:**

Login Primary

Actor: User

Secondary Actor: System

Precondition: User must be registered.

Main Scenario:

1. Go to website and click member's area tab
2. User gives login info
3. System checks user info
4. Members area is displayed

Alternate Scenario:

4. (A) Login fails

4. (A) 1. Re-prompt for login info

4. (A) 2. User is allowed to enter info 3 times before being banned for an hour

4. (B) User forgot password

4. (B)1. User is prompted for answer to secret question

4. (B)2. System checks to see if answer is right and if answer is right, sends password to email account

## Login

You are currently at the Cypress Login Page. By Logging into this system, you will be able to report a variety of problems as you have witnessed on the streets of Toronto.

USERNAME:  PASSWORD:

Login

Forgot Password

## Forgot Password

Please Enter your Secret Question and Answer to receive your password in the mail

USERNAME or EMAIL:

Security Question:

Answer:

Submit

Use cases related to User profiles:

**Use Case 4: Change Information**

Primary Actor: User Precondition:  
logged in Main Scenario:

1. User clicks on profile info tab
  2. All the profile info is displayed (password, address, number, etc.)
  3. User clicks save and exit when done changing profile Alternate Scenario:
3. (b) If not all required fields are filled out
3. (b) 1. User has to fill in the required fields before exiting

Cypress City of Toronto Home User Profile Report a Problem My Reports Suggest Solutions Vote More Logout

### User Information

First Name: Joe  
Last Name: Biden  
Address: Someaddress  
Phone Number: 1234567891  
Email Address: mail@mail.com  
Username: user  
Password: \*\*\*\*\*

First Name First Name  
Last Name Last Name  
Address Address  
Phone Number Phone Number  
Email Email  
Password Password

Change Info Delete Account

## Use Case 5: Delete Profile

Primary Actor: User

Precondition: User is logged in Main

Scenario:

1. User clicks delete profile tab
2. User is prompted for answer to secret question (to make sure it is the correct person)
3. User is prompted if he or she is sure they want to delete profile
4. User is prompted for reason for leaving (to better improve our customer service)
5. User information is erased from system along with reports

Cypress City of Toronto Home User Profile Report a Problem My Reports Suggest Solutions Vote More ▾ Logout

### Delete Account

Please Enter your Secret Question and Answer to delete your Account

Security Question:

Security Answer:

Use cases related to reporting problems:

**Use Case 6: Create Report/ Report a Problem**

Primary Actor: User

Precondition: User is logged in Main

Scenario:

1. User clicks on create a report tab
2. User is prompted for a location on the city map
3. User is prompted for a complaint about the selected area 4.  
User then saves report and exits Alternative flow:
4. (a) a required field is missing and user cannot save and exit
4. (a)1. User is prompted for information the required field


Cypress City of Toronto

HomeUser ProfileReport a ProblemMy ReportsSuggest SolutionsVoteMore

Logout

Report a Problem at a Postal Code

Get Postal Code from AddressSearch



Or Click on the Map

ZipCode(no space or dashes)

☐ Utility Failures  
☐ Potholes  
☐ City Property of Vandalism  
☐ Eroded Streets  
☐ Tree Collapse  
☐ Flooded Streets  
☐ Mould and Spore Growth  
☐ Garbage or any Other Road Blocking Objects

Report Details or Other

Submit

Problem at the site:

## Use Case 7: Edit Report

Primary Actor: User

Secondary Actor: System

Precondition: User is logged in Main

Scenario:

1. User clicks edit report tab
  2. System displays a list of all the Users reports are displayed
  3. User clicks on a report to change
  4. User is prompted for city area via a map
  5. User is prompted for a problem. User then saves report and exits
- Alternative flow:
6. (a) A required field is missing and the User cannot save and exit 6.  
(a)1. User is prompted for information the required field

The screenshot shows the 'Reports' page of the Cypress City of Toronto website. The page has a green header with navigation links: Cypress City of Toronto, Home, User Profile, Report a Problem, My Reports, Suggest Solutions, Vote, and More. A red 'Logout' button is in the top right. The main content area is titled 'Reports' and displays two report cards. Each card has a title, a description, a status, and buttons for 'Delete' and 'Edit'. The first card is for 'Problem At M5A3S9' with the description 'Tree Collapse' and 'Tree collapse at richmond st e.' The second card is for 'Problem At M5A2E9' with the description 'Utility Failures, Potholes' and 'Reporting the Potholes at Seaton St. and Gerrard St E intersection'. Both reports have a status of 'OPEN' and were posted on April 11, 2021, and April 8, 2021, respectively.

| Problem At M5A3S9               |              |                      |
|---------------------------------|--------------|----------------------|
| Tree Collapse                   |              |                      |
| Tree collapse at richmond st e. |              |                      |
| Delete                          | Status: OPEN | Edit                 |
| Report by Me                    |              | Posted At 2021-04-11 |

| Problem At M5A2E9  |              |                      |
|--|--------------|----------------------|
| Utility Failures, Potholes   |              |                      |
| Reporting the Potholes at Seaton St. and Gerrard St E intersection |              |                      |
| Delete   | Status: OPEN | Edit                 |
| Report by Me   |              | Posted At 2021-04-08 |

Cypress City of Toronto
Home
User Profile
Report a Problem
My Reports
Suggest Solutions
Vote
More
Logout

## Report a Problem at a Postal Code

Get Postal Code from Address

Or Click on the Map

ZipCode(no space or dashes)

☐ Utility Failures  
☐ Potholes  
☐ City Property of Vandalism  
☐ Eroded Streets  
☒ Tree Collapse  
☐ Flooded Streets  
☐ Mould and Spore Growth  
☐ Garbage or any Other Road Blocking Objects

Problem at the site:

Report Details or Other

Tree collapse at richmond st e.

## Use Case 8: Delete Report

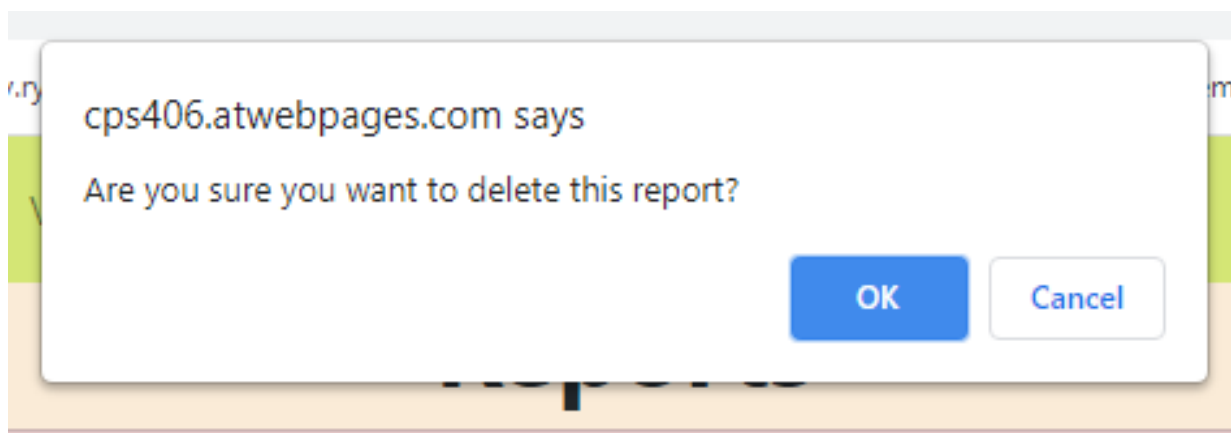
Primary Actor: User

Secondary Actor: System

Precondition: User is logged in Main

Scenario:

1. User clicks delete report tab
2. System displays a list of all the Users reports are shown
3. User clicks on a desired report to delete
4. System prompts the User if he/she is sure before deletion of report



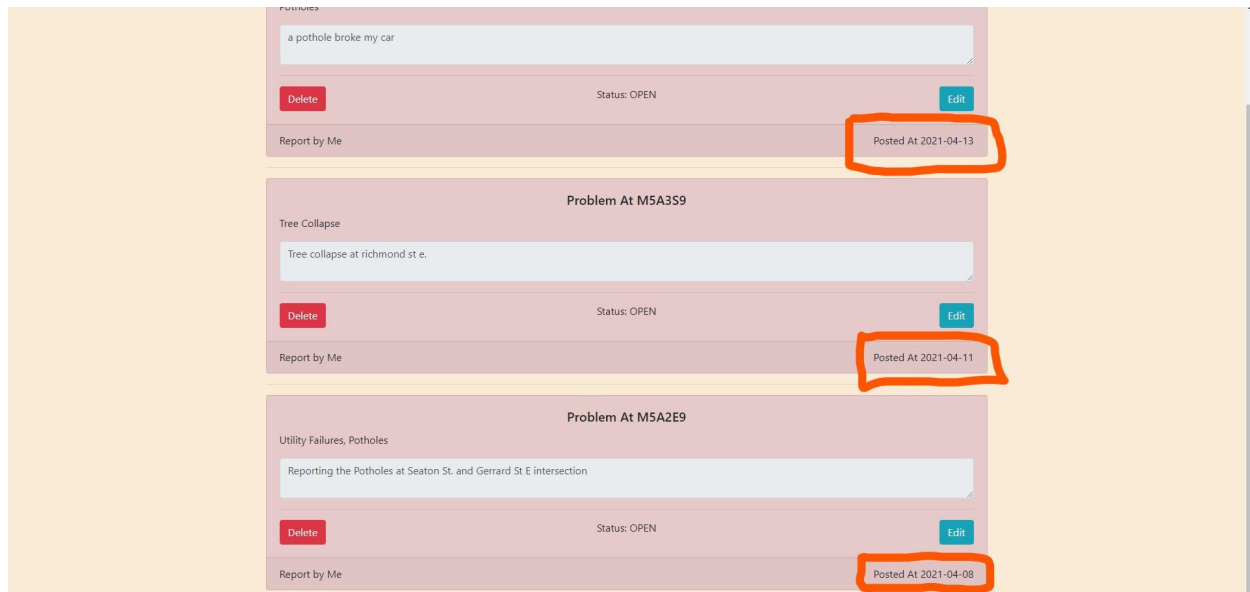
Use cases related to Report Resolution and User Notifications:

**Use Case 9: Ranking**

Primary Actor: System Precondition:

None Main Scenario:

1. System sorts all the reports and checks for patterns
2. System checks where the most problems are coming from
3. System checks which problem is most frequent
4. System then ranks the type of problem and part of town from good to bad



**The system ranks each report from most recent to oldest.**



## Use Case 10: Report Resolution

Primary Actor: System

Secondary Actor: City Officials

Precondition:

None Main Scenario:

1. System notifies city officials about the problem
2. City Officials try their best to resolve conflict and the gets back to the system tech with the course of action being taken
3. System notifies the User that the problem has been resolved and thanks them for their contribution to society.

|                         |                      |
|-------------------------|----------------------|
| get a cat - Bobby Billy |                      |
| Status: CLOSED          |                      |
| Report by ME            | Posted At 2021-04-14 |

|   |                      |
|---|----------------------|
| Problem At M5B1W7   |                      |
| Utility Failures, City Property of Vandalism, Tree Collapse |                      |
| there are not enough bikers                                 |                      |
| Suggestions:  |                      |
| buy a bike and start biking -Sarah Mcdonald                 |                      |
| Status: CLOSED  |                      |
| Report by chris (Sarah Mcdonald)                            | Posted At 2021-04-14 |

|                        |  |
|------------------------|--|
| Problem At M5A2E9      |  |
| Potholes               |  |
| a pothole broke my car |  |
| Suggestions:           |  |
| Status: CLOSED         |  |

## Use Case 11: Notify

Primary Actor: User Precondition:

None Main Scenario:

1. User is prompted to part-take in a survey about the city
2. User accepts and answers all the questions in the survey and submits

Alternative flow: 2. (a) User declines request and continues to site

3. Results for survey are stored and tallied up

The screenshot shows a web browser window with a green header bar. The header contains the text "Cypress City of Toronto" followed by a series of navigation links: "Home", "User Profile", "Report a Problem", "My Reports", "Suggest Solutions", "Vote", "Survey", "All Reports", and "More". A red "Logout" button is located on the right side of the header. The main content area has a light orange background and is titled "Survey" in bold black text. The survey questions are as follows: 1. "Do you Like Toronto?" with radio buttons for "Yes" and "No". 2. "If you answered Yes, What do you find most compelling about Toronto?" with a dropdown menu showing "Entertainment". 3. "Or if you answered no, please tell us why" with a large text input area. 4. "Would you recommend Cypress to others?" with radio buttons for "Yes" and "No". 5. "Do you have any additional comments or feedback for us?" with a large text input area. A blue "Submit" button is at the bottom center of the form.

Cypress City of Toronto Home User Profile Report a Problem My Reports Suggest Solutions Vote Survey All Reports More Logout

### Survey

Do you Like Toronto?

☐ Yes ☐ No

If you answered Yes, What do you find most compelling about Toronto?

Entertainment

Or if you answered no, please tell us why

Would you recommend Cypress to others?

☐ Yes ☐ No

Do you have any additional comments or feedback for us?

Submit

Use cases related to other features of the CYPRESS website:

**Use Case 12: Suggest**

Primary Actor: User

Secondary Actor: System

Precondition: None Main Scenario:

1. User clicks suggest tab
2. System displays a list of reports to the User
3. User clicks on the report and options are shown Alternative flow
  3. (a) User clicks like button
  3. (b) User suggests a possible solution for the problem and submits it

The screenshot shows a web form titled 'CYPRESS' with a 'City of Toronto' link in the top right. The form has a header 'Enter your suggestion below:' and a text input field containing 'This is the default text'. Below the input field are 'Submit' and 'Cancel' buttons. A small 'FAQ' link is visible in the bottom right corner.

**Use Case 13: Contacting**

Primary Actor: User

Secondary Actor: System

Precondition: User needs to speak to someone from the CYTRSO.

Main Scenario:

1. User clicks on contact us tab
2. System displays a list of city officials to choose from
3. User picks city official and contact information and office hours are displayed.

The screenshot shows the 'Contact Us' page of the CYPRESS website. The page has a green header with navigation links: 'Cypress city of Toronto', 'Home', 'User Profile', 'Report a Problem', 'My Reports', 'Suggest Solutions', 'Vote', and 'More'. A 'Logout' button is in the top right. The main content area is titled 'Contact Us' and includes contact information: 'Email us at support@fakecypress.com' and 'Call Us at 159-951-1478'. Below this is a section titled 'List of City Official's Contact Information' with a table.

| Name        | Phone      | Email              |
|-------------|------------|--------------------|
| Bobby Billy | 1233331541 | user2@usermail.com |

## Use Case 14: FAQ Questioning

Primary Actor: User

Precondition: User is unsure about a specific matter.

Main Scenario:

1. User clicks FAQ tab
2. A list possible/ most common answers is shown to the User Alternative flow
  2. (a) User scrolls down and reads each problem
  2. (b) User clicks on question category and is brought to the question and answer immediately

Cypress City of Toronto

HomeUser ProfileReport a ProblemMy ReportsSuggest SolutionsVoteMore

Logout

### Frequently Asked Questions

**What is the purpose of this website?**  
This website is designed to help us in resolving city issues as quick as possible after receiving your report(s). Our goal is to achieve a more sustainable city.

**What should I do if I cannot successfully login?**  
For login troubleshoot, please contact us at [support@fakecypress.com](mailto:support@fakecypress.com)

**How can I change my account information?**  
On the portal page, click on the "User Profile" button and click "Go". There you will see a button to edit your information.

**How to delete my account?**  
Click on the "User Profile" button and a "Delete Account" button can be found on the bottom part of the screen

**What if I cannot find the type of problem I wanted to report?**  
Click on the "Suggest" button and leave your report there or you may contact us through our email at [support@fakecypress.com](mailto:support@fakecypress.com)

**Is it possible to cancel a report?**  
Yes, to cancel a report, click on the "Reports" button. There will be an option to delete the report(s) you submitted.

**Where do I go to see my report(s) history?**  
Go to the "Reports" button and you will see all the report(s) you made.

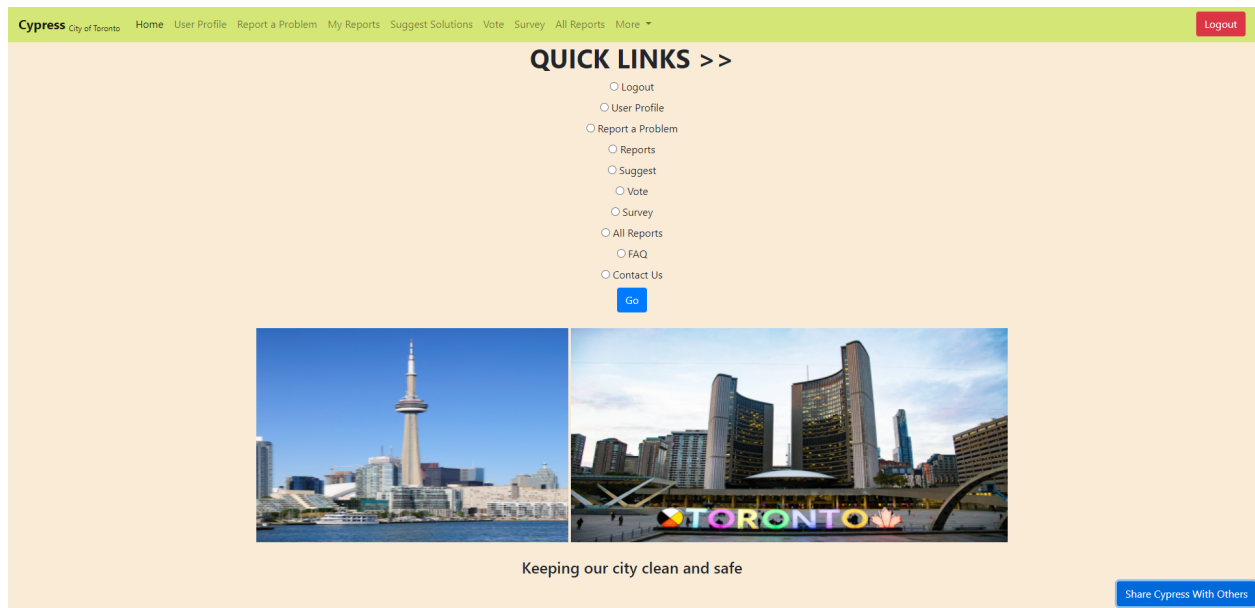
Don't see your questions here? Not to worry, please visit our contact page [here](#) for our informations

**Use Case 15: Redirecting** Primary Actor: User Precondition:None Main Scenario:

1. Go button is to finalize the decision after clicking on a tab, takes User to selected page

Alternative flow

1. (a) User has not clicked a tab. Nothing happens in this case and the User screen remains active.



**Use Case 16: Logout**

Primary Actor: User

Precondition: User is logged in.

Main Scenario:

1. User clicks logout button
2. User is redirected to the main page of the site



### Use Case 17: Home

Primary Actor: User Precondition:

None Main Scenario:

1. User clicks on home tab
2. User is redirected to main section of the members area

**Cypress** City of Toronto Home User Profile Report a Problem My Reports Suggest Solutions Vote More ▾

### Use Case 18: Tell a friend Primary Actor: User

Precondition: User wishes to spread the word about the Cypress website.

Main Scenario:

1. User clicks on tell a friend tab
2. User is prompted for friends email address
3. User is prompted to add a personal message Alternative flow
3. (a) User can decline to add a personal message
3. (a)1. A default message is sent instead

Share Cypress With Others

cps406.atwebpages.com says

Please Enter your friend's Email:

Email Address

OK

Cancel

## Use Case 19: Vote

Primary Actor: User

Secondary Actor: System

Precondition: None Main Scenario:

1. User clicks on the vote tab
2. Systems displays a list of options to vote from
3. System tracks the number of votes and displays the results thus far to User via an email message to Cypress account.

**Cypress** City of Toronto [Home](#) [User Profile](#) [Report a Problem](#) [My Reports](#) [Suggest Solutions](#) [Vote](#) [More](#) [Logout](#)

### Vote

Have you voted yet?

☐ Yes  
☐ No

If not, will you be voting?

☐ I have already voted  
☐ Yes  
☐ No

If you will not be voting please explain why:

☐ I will be voting  
☐ I am not 18+  
☐ I am not a Canadian Citizen  
☐ I am not interested  
☐ I am out of town/not home  
☐ Registration Problems  
☐ Voting area/booth is too far  
☐ Transportation Problems  
☐ Polling hours are inconvenient for me  
☐ Prefer not to say  
☐ Other, please specify:

[Submit](#)

### 3.2 Performance Requirements:

- (a) Should run on 500 MHz, 64 bit MB machines.
- (b) Majority of responses which include buttons and page transitioning should be quick and respond within 2 seconds, except when loading the map function which will take more time.
- (c)

### 3.3 Design Constraints:

1. *Accessibility:* Anyone should be able to understand the layout of the website and to navigate it without issue.
2. *Reliability:* People should be able to easily login and check or submit any problems without issue and be notified as soon as possible.

### 3.4 External Interface Requirement

- (a) The front page has the name of the site and the city of Toronto logo under it and two buttons under the logo. The two buttons are for either English or French which the user may choose.
- (b) The main page is split into two panes; the right contains images of the city and the site motto under it, the left contains options the user may choose from such as Register, Login, Report a Problem, Suggestion, Vote, FAQ, Contact Us.
- (c) In the register page, multiple field and text boxes are placed asking for personal information such as name, address, phone number. Under these boxes are two buttons, register and cancel and at the bottom left corner of the page is the Frequently Asked Questions button.
- (d) In the report a problem page, a field box is placed asking for the address of where the problem is and under the box are multiple check-boxes allowing the user to choose the option(s) that correspond to the problem.
- (e) In the login page, a short message is placed describing what the site does. Under the message are two text boxes and field asking for the username and password and under the field are two buttons labelled login and cancel.

### 4. Future Extensions:

- a. CYPRESS is intended to be single user software. A possible future extension would be to allow multiple users. Multiple city officials could possibly work on resolving a single problem together as opposed to a single user working a single conflict.



## 5. Appendix

### Screens 5.1 Appendix A: User



**Main Screen (Language Selection)**

CYPRESS

City of Toronto

QUICK LINKS >>

☐ Register

☐ Login

☐ Report a Problem

☐ Suggest

☐ Vote

☐ FAQ

☐ Contact Us

GO



Keeping Our City Streets Clean and Safe...

FAQ

Login Screen

CYPRESS

City of Toronto

You are currently at the Cypress Login Page. By logging into this system, you will be able to report a variety of problems as you have witnessed on the streets of Toronto.

Username:

@cypress.on.ca

Password:

Login

Cancel

FAQ

Portal Screen

CYPRESS

City of Toronto

Please enter information below:

First Name:

Last Name:

Address:

Phone Number

-

-

E-mail Address:

Username:

@cypress.on.ca

Password:

Register

Cancel

FAQ

## Registration Screen

CYPRESS

City of Toronto

LOGOUT

Address:

PROBLEMS AT THE SITE:

☐ Utility Failures

☐ Tree Collapse

☐ Potholes

☐ Flooded Streets

☐ City Property Vandalism

☐ Mould and Spore Growth

☐ Eroded Streets

☐ Garbage or any Other Road Blocking Objects

Report

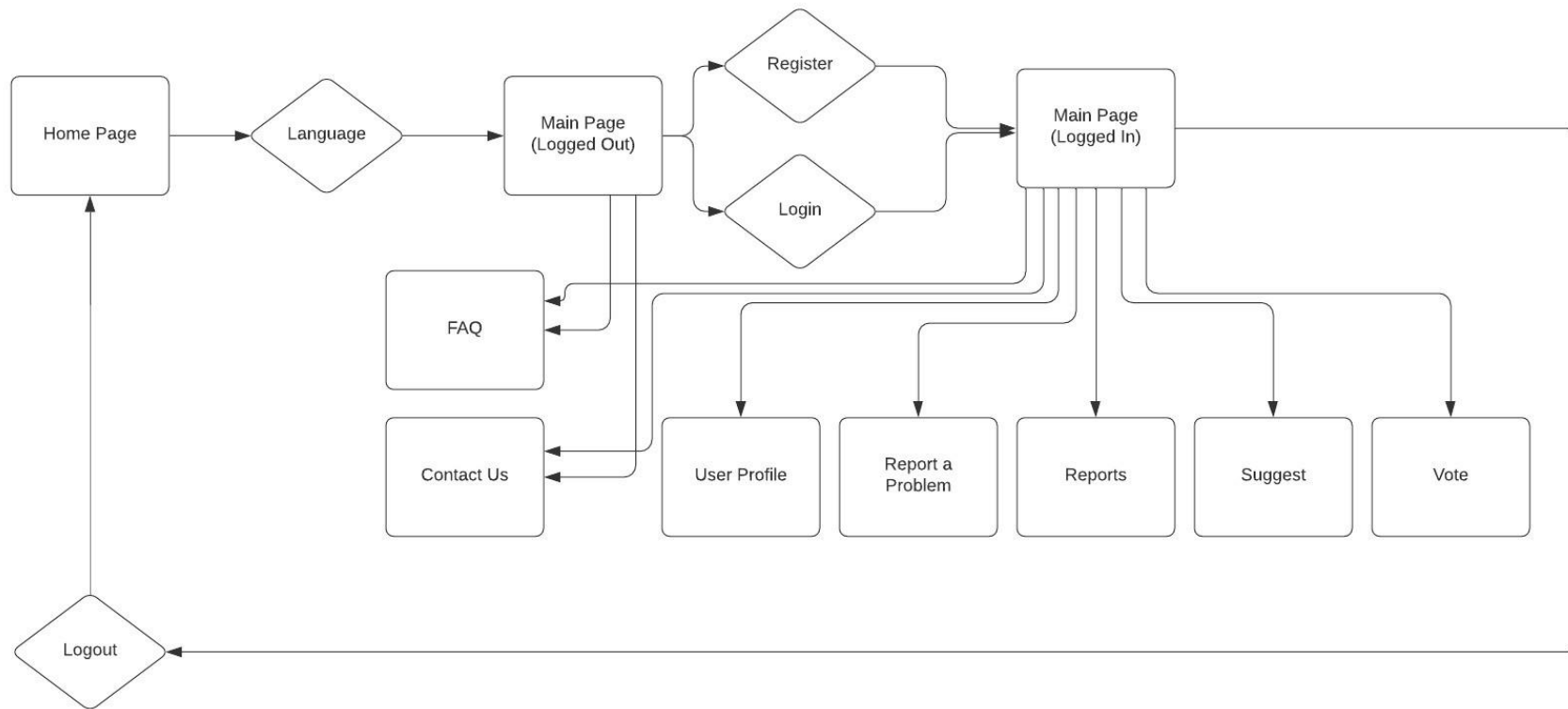
Cancel

FAQ

## Reporting Screen

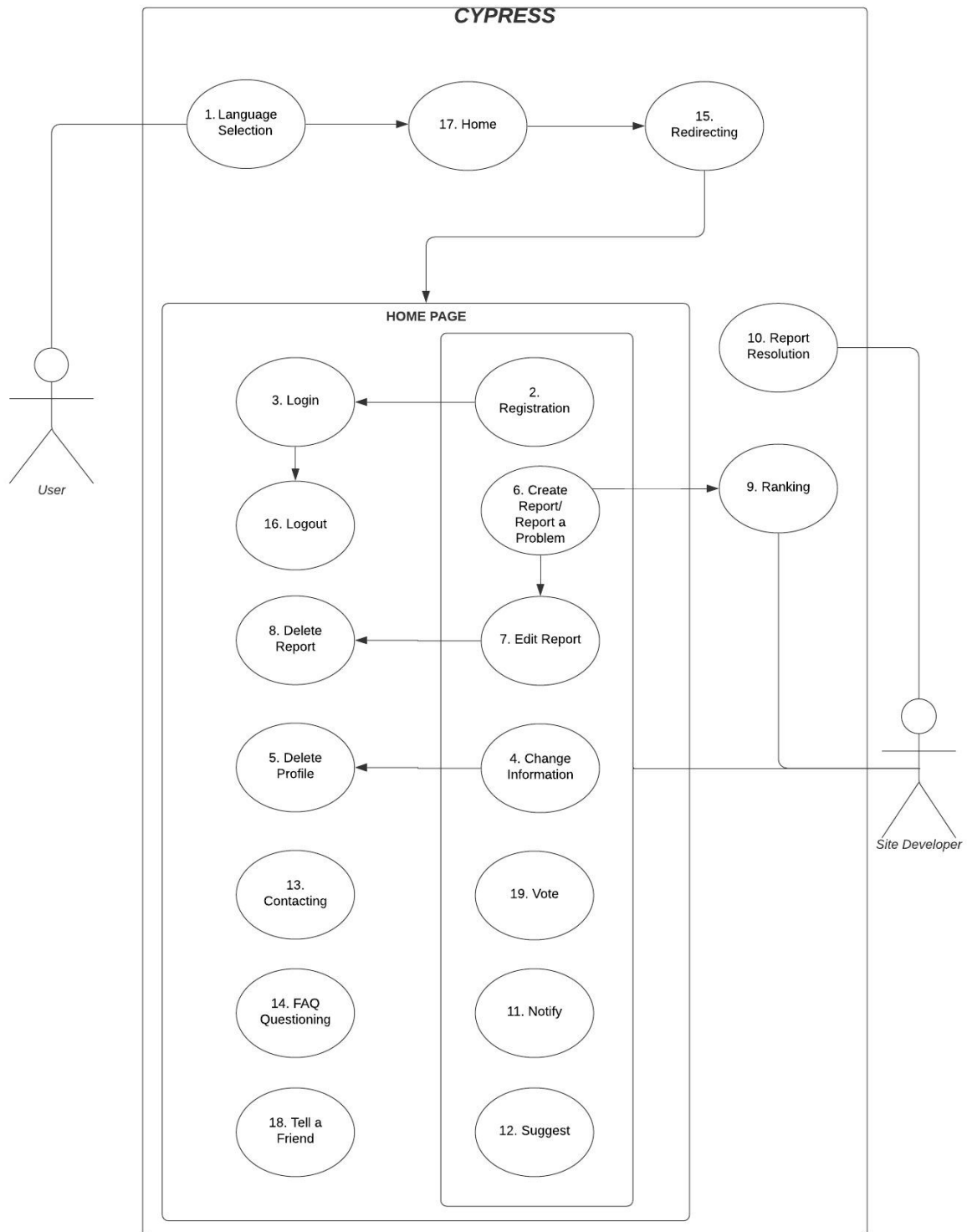
## Test Plan/Report

| Feature                | Test Case  | Input   | Expected   | Result   |
|------------------------|--|---|--|--|
| Home Screen (language) | English<br>French  | Boolean<br>Boolean  | True<br>True   | True<br>True   |
| Main Page (logged out) | Register<br>Login<br>FAQ<br>Contact Us   | Boolean<br>Boolean<br>Boolean<br>Boolean  | True<br>True<br>True<br>True   | True<br>True<br>True<br>True   |
| Register               | First Name<br>Last Name<br>Address<br>Phone<br>Number<br>Username<br>Email<br>Password<br>Security<br>Question<br>Answer | String<br>String<br>String<br>Int<br><br>String<br>String<br>String<br>String<br><br>String | True<br>True<br>True<br>True<br><br>True<br>True<br>True<br>True<br><br>True | True<br>True<br>True<br>True<br><br>True<br>True<br>True<br>True<br><br>True |
| Login                  | Username<br>Password   | String<br>String  | True<br>True   | True<br>True   |
| Main Page (logged in)  | Logout<br>User Profile<br>Report a<br>Problem<br>Reports<br>Suggest<br>Vote<br>FAQ<br>Contact Us                         | Boolean<br>Boolean<br>Boolean<br><br>Boolean<br>Boolean<br>Boolean<br>Boolean<br>Boolean    | True<br>True<br>True<br><br>True<br>True<br>True<br>True<br>True             | True<br>True<br>True<br><br>True<br>True<br>True<br>True<br>True             |



## **FLOW CHART DIAGRAM**

# UML Use Case Diagram



# MYSQL Tables

## Userinfo

| #                        | Name | Type     | Collation    | Attributes      | Null               | Default    | Comments                | Extra          | Action   |                 |         |          |
|--------------------------|------|----------|--------------|-----------------|--------------------|------------|-------------------------|----------------|--|-----------------|---------|----------|
| <input type="checkbox"/> | 1    | id       | int(11)      |                 | No                 | None       |                         | AUTO_INCREMENT |  |                 |         |          |
| <input type="checkbox"/> | 2    | fname    | varchar(32)  | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 3    | lname    | varchar(32)  | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 4    | address  | varchar(500) | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 5    | phone    | int(11)      |                 | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 6    | email    | varchar(256) | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 7    | username | varchar(32)  | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 8    | password | varchar(256) | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 9    | secQ     | varchar(256) | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 10   | ans      | varchar(256) | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <input type="checkbox"/> | 11   | role     | varchar(32)  | utf8_general_ci | No                 | None       |                         |                |  |                 |         |          |
| <div>← T →</div>         |      |          |              |                 |                    |            |                         |                |  |                 |         |          |
| <input type="checkbox"/> |      | id       | fname        | lname           | address            | phone      | email                   | username       | password   | secQ            | ans     | role     |
| <input type="checkbox"/> |      | 1        | Joe          | Biden           | someaddress        | 1234567891 | mail@gmail.com          | user           | \$2y\$10\$XEHZlgm0ntVmWZOBjLZae39t0Q48Cs8wDkE1ji9BK...   | q               | a       | user     |
| <input type="checkbox"/> |      | 2        | Bobby        | Billy           | 453 Street Road    | 1233331541 | user2@usermail.com      | user2          | \$2y\$10\$lgUn1XpVcaqPrufwF8uyv4/ccTB_2Q2AOiWguzU...     | question        | answer  | official |
| <input type="checkbox"/> |      | 3        | Roman        | Popadiuk        | 1818 Beechnoll Ave | 2147483647 | romanpopadiuk@gmail.com | rpop           | \$2y\$10\$ZalEF0DC5XByls3Ml6Cp_iBuDcvrfWY37G2PPJD50f...  | what is my name | name    | user     |
| <input type="checkbox"/> |      | 5        | example      | example         | vndsknlk           | 2147483647 | RFNEWKLJ@VFNWKLJ.COM    | example        | \$2y\$10\$OSbjl6iPjwuezw3XxWd3OxEwwVMGUHxtqslBoMFbdZ...  | what is my name | example | official |
| <input type="checkbox"/> |      | 6        | Leonard      | Mcdonald        | 31 Fhwio Ave       | 1234567777 | fdsbnj@fidsnkji.com     | dave           | \$2y\$10\$SMyt6C0apV4_eTMDRx9dBuw3hkUHps6zRdBo/djzOXF... | what is my name | dave    | user     |
| <input type="checkbox"/> |      | 8        | Sarah        | Mcdonald        | 12 FnkI Ave        | 1234567777 | rnewjon@vdsnjon.com     | chris          | \$2y\$10\$/C7avEk7OZfgCwVmVZ_a.fHZOvvu4osparTWhLLWLj...  | what is my name | chris   | user     |

## Reports

| #                        | Name | Type     | Collation  | Attributes  | Null       | Default   | Comments | Extra          | Action |
|--------------------------|------|----------|------------|---|------------|---|----------|----------------|--------|
| <input type="checkbox"/> | 1    | id       | int(11)    |   | No         | None  |          | AUTO_INCREMENT |        |
| <input type="checkbox"/> | 2    | zipcode  | varchar(6) | latin1_swedish_ci                                     | No         | None  |          |                |        |
| <input type="checkbox"/> | 3    | message  | text       | latin1_swedish_ci                                     | No         | None  |          |                |        |
| <input type="checkbox"/> | 4    | date     | date       |   | No         | None  |          |                |        |
| <input type="checkbox"/> | 5    | problems | text       | latin1_swedish_ci                                     | No         | None  |          |                |        |
| <input type="checkbox"/> | 6    | open     | tinyint(1) |   | No         | 1   |          |                |        |
| <input type="checkbox"/> | 7    | userid   | int(11)    |   | No         | None  |          |                |        |
| <div>← T →</div>         |      |          |            |   |            |   |          |                |        |
| <input type="checkbox"/> |      | id       | zipcode    | message   | date       | problems  | open     | userid         |        |
| <input type="checkbox"/> |      | 1        | M5A2E9     | Reporting the Potholes at Seaton St. and Gerrard S... | 2021-04-08 | a:2:{i:0:s:16:"Utility Failures";i:1:s:8:"Potholes..."} | 0        | 1              |        |
| <input type="checkbox"/> |      | 2        | M5A3S9     | Tree collapse at richmond st e.                       | 2021-04-11 | a:1:{i:0:s:13:"Tree Collapse"};                         | 1        | 1              |        |
| <input type="checkbox"/> |      | 6        | M5A3A3     | Vandalisme de propri  t   s'est produit ici    cet... | 2021-04-13 | a:1:{i:0:s:37:"Propri  t   de la ville du vandalis..."} | 1        | 2              |        |
| <input type="checkbox"/> |      | 7        | M5A2E9     | a pothole broke my car                                | 2021-04-13 | a:1:{i:0:s:8:"Potholes"};                               | 0        | 1              |        |
| <input type="checkbox"/> |      | 12       | M5B1W7     | my dog ran away                                       | 2021-04-14 | a:2:{i:0:s:16:"Utility Failures";i:1:s:14:"Eroded ..."  | 1        | 2              |        |
| <input type="checkbox"/> |      | 9        | M5B2B7     | water failures  | 2021-04-13 | a:1:{i:0:s:16:"Utility Failures"};                      | 1        | 1              |        |
| <input type="checkbox"/> |      | 13       | M5E1W7     | my head hurts   | 2021-04-14 | a:2:{i:0:s:16:"Utility Failures";i:1:s:14:"Eroded ..."  | 1        | 6              |        |
| <input type="checkbox"/> |      | 15       | M5B1W7     | there are not enough bikers                           | 2021-04-14 | a:3:{i:0:s:16:"Utility Failures";i:1:s:26:"City Pr..."} | 0        | 8              |        |

## Suggestions

| #                        | Name | Type       | Collation | Attributes                  | Null | Default  | Comments | Extra          | Action |
|--------------------------|------|------------|-----------|-----------------------------|------|----------|----------|----------------|--------|
| <input type="checkbox"/> | 1    | suggestid  | int(11)   |                             | No   | None     |          | AUTO_INCREMENT |        |
| <input type="checkbox"/> | 2    | suggestion | text      | latin1_swedish_ci           | No   | None     |          |                |        |
| <input type="checkbox"/> | 3    | reportid   | int(11)   |                             | No   | None     |          |                |        |
| <input type="checkbox"/> | 4    | userid     | int(11)   |                             | No   | None     |          |                |        |
| <div>← T →</div>         |      |            |           |                             |      |          |          |                |        |
|                          |      |            | suggestid | suggestion                  |      | reportid | userid   |                |        |
| <input type="checkbox"/> |      |            | 1         | Call local services         |      | 1        | 1        |                |        |
| <input type="checkbox"/> |      |            | 2         | get a new engine            |      | 8        | 2        |                |        |
| <input type="checkbox"/> |      |            | 3         | drink more water            |      | 9        | 6        |                |        |
| <input type="checkbox"/> |      |            | 4         | drink some water            |      | 9        | 2        |                |        |
| <input type="checkbox"/> |      |            | 5         | get a cat                   |      | 12       | 6        |                |        |
| <input type="checkbox"/> |      |            | 6         | get a cat                   |      | 12       | 2        |                |        |
| <input type="checkbox"/> |      |            | 7         | buy a bike and start biking |      | 15       | 8        |                |        |

## **Technologies used in the Project**

HTML/CSS/JS for Interactive Front-End Development.

PHP for server side Back-End Development.

Mysql for database and handling user data & reports.

Bootstrap 4.6 Css Framework used for Front-End Development.

<https://getbootstrap.com/>

Leaflet API used for the interactive map and finding longitude and latitude.

<https://leafletjs.com/>

Geocoder API used for finding Canadian zip code from longitude and latitude values.

<https://geocoder.ca/>