

# COMP3340: Final Project Submission

## New City Better Life — Project Team 9

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### Abstract

**Summary** *New City Better Life*. Almost one quarter of Canadians moved or plan to move since April 2020. These survey participants cited COVID-19 as a reason for relocating. We started *New City Better Life* as a way to help this market do their research on possible dream cities so that they can relocate to any city in Canada. On our website, you may get information on 166 of the most livable cities/towns in Canada.

**Purpose** The purpose of our website is to help people who have a plan to move in the future. We provide key livability statistics and information on almost all cities and towns in Canada that can be saved by users and help them make decisions regarding their relocation in the future.

**Methodology** This website was created using the standard LAMP-stack (Linux, Apache, MySQL, and PHP). The front-end is built with HTML, CSS and JavaScript. The project was initially created by carefully planning a sitemap using the project's purpose and background. From this sitemap, we implemented the most important pages by the predicted frequency of use by our potential users, with the index page being the highest priority page to have been implemented. After the most important pages were created (and connected through a working navigation system), we then turned our efforts to the heart of the website's functionality, which was to be able to display database records on dynamic PHP pages and a working login system for admins and clients.

**End Result** At the end of the semester, we completed an MVP website with the core functionalities and requirements that was needed to make the site operational. It is currently live and running, with users able to register, login and use the site to search for information related to their dream city, while being able to maintain a data-persistent, account-based list of their favorite cities through a logged-in account. The website is also highly-maintainable on the admin side, with high quality documentation for both end-users and admins. Finally, our website and code is open-source on GitHub and is ready to be cloned, deployed and installed by third-party developers who would like to implement our codebase to build similar projects in the future.

**Contribution:** All team members contributed equally for this project.

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# Client Interface Checklist

## 1 Languages Used

e.g. HTML5, CSS3, JavaScript, PHP, etc..

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

1-2 languages = 1pt, 3+ = 2pts (max 2 pts)

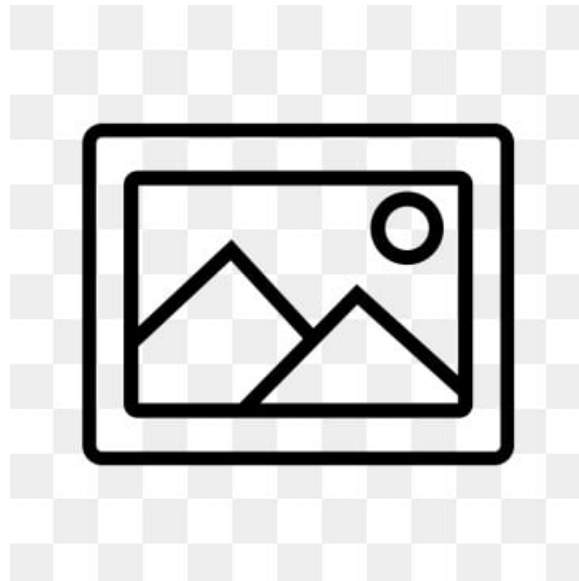


Figure 1: Caption Goes Here

## 2 Libraries/Frameworks/APIs Used

e.g. React, JQuery, etc.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

2 pts if actually used

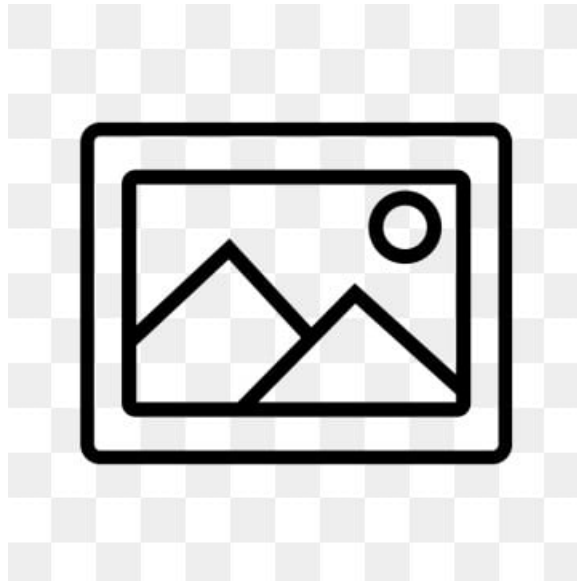


Figure 2: Caption Goes Here

### 3 Multimedia Used

e.g. 24 images, 3 videos, 1 map

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

1-10 items = 1pt, 11+ = 2pts (any combination)

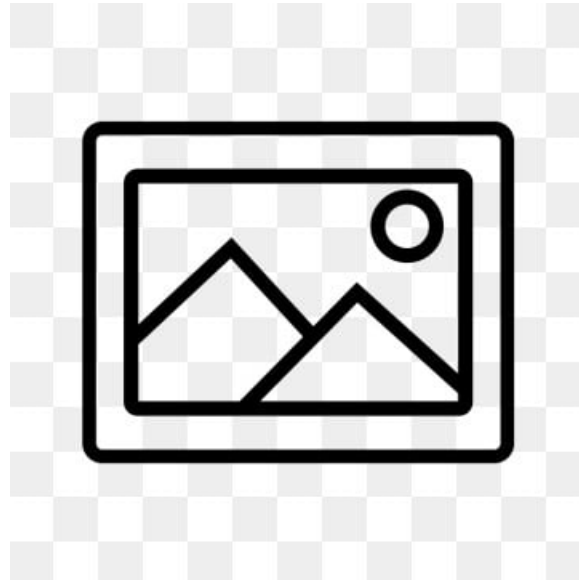


Figure 3: Caption Goes Here

## 4 Menu [menu items, ...]

e.g. 1 main menu [About, Product, Login], 1 client menu [Add, Remove, Edit, Logout]

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

2 pts for at least one fully functioning menu

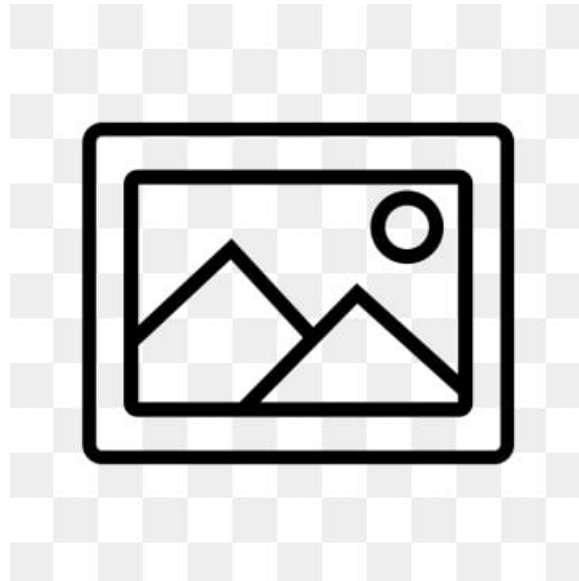


Figure 4: Caption Goes Here

## 5 User Registration and Authentication

e.g. Able to create new users, authenticate session, login, logout.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts complete functionality

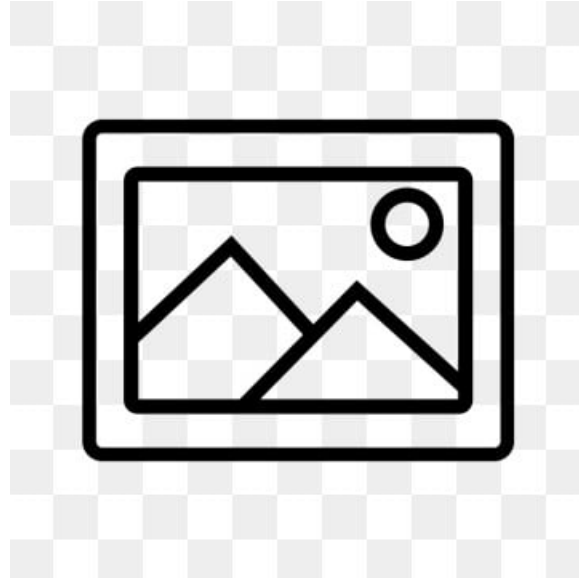


Figure 5: Caption Goes Here



## 6 50 Unique Dynamic Pages

e.g. using the file "product.php" we are able to generate 50+ different product pages

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts if at least 50 pages can be generated

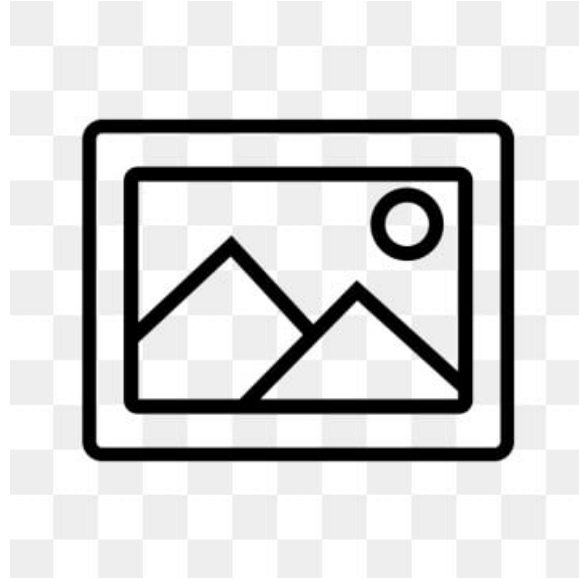


Figure 6: Caption Goes Here

## 7 10 Static Pages

e.g. we have 10 pages that can be found here:(urls)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts if at least 10 pages

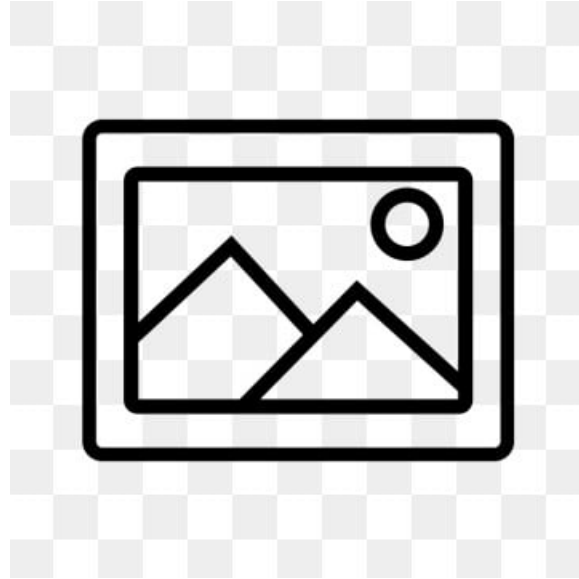


Figure 7: Caption Goes Here

## 8 Link To The Main Site Homepage

Link to homepage goes here

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts if site is publically accessible (e.g. on myweb)

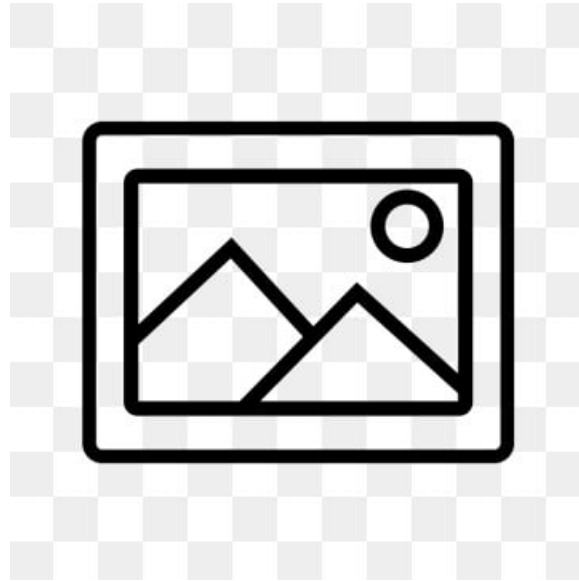


Figure 8: Caption Goes Here

## 9 Public/Private Functionality

public: public users can see create/login screen, about us, product catalogue.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

private: logged in users can add products to cart, view/edit cart, and checkout; as well as update user preferences.

up to 5 pts for full functionality

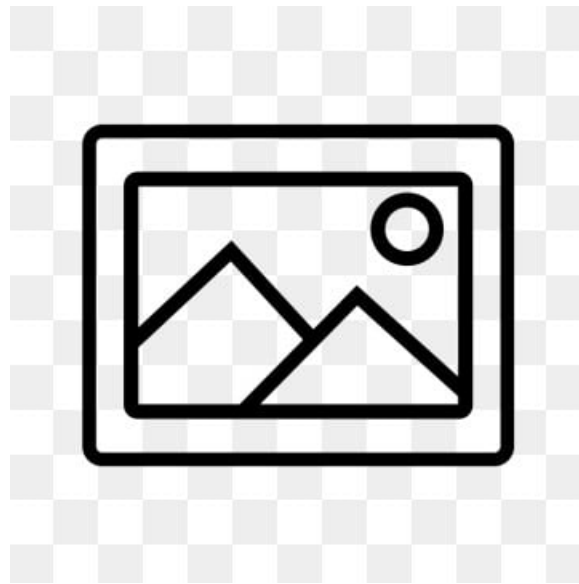


Figure 9: Caption Goes Here

## 10 Documentation

registered users to the website can find the help pages here: (url) an FAQ section is also added.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for documentation based on quality and completeness

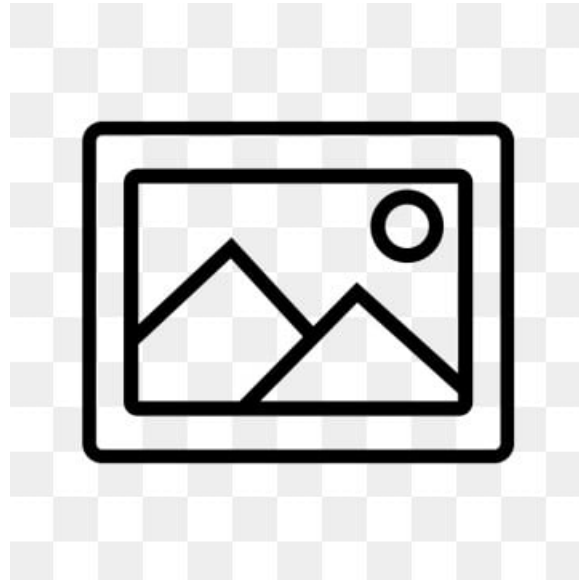


Figure 10: Caption Goes Here

## 11 Search Engine Optimization Features

Added minimum 5 keywords to each landing page, and customized meta-tags in the headings (you can paste a sample heading here showing what you did, eg. keywords, description, etc)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts based on the quality of work done

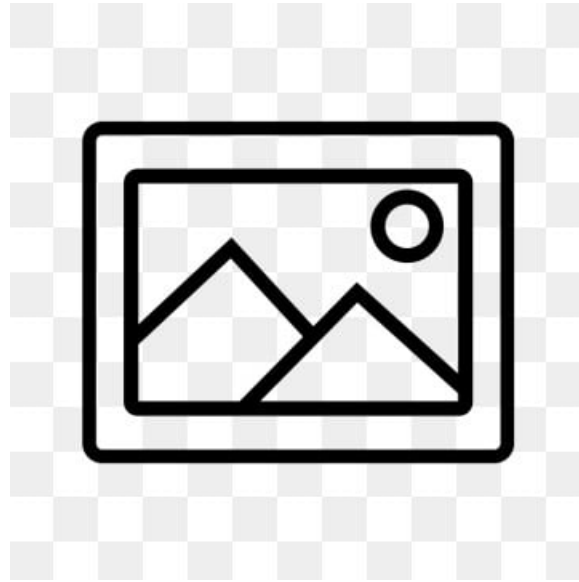


Figure 11: Caption Goes Here

## 12 Responsiveness On Mobile and Other Platforms

used Bootstrap template (downloaded from here: [url link here](#) ) and tested it on iPhone, windows, iMAC, android, Linux Ubuntu. Screenshots attached.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for showing on at least 5 different platforms/or screen sizes.

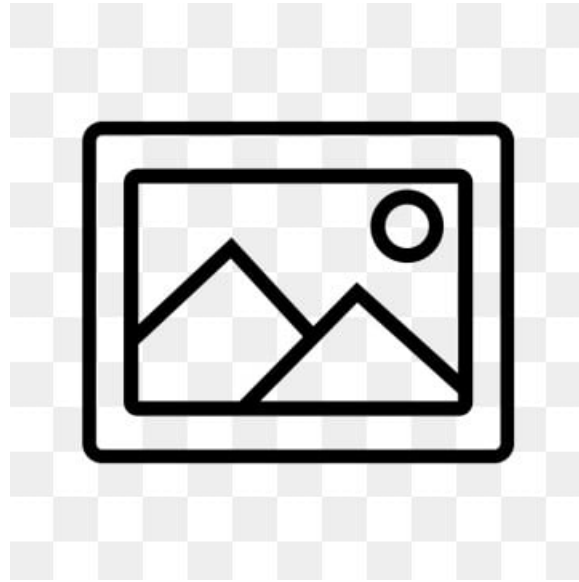


Figure 12: Caption Goes Here

## 13 End-User Training

In addition to the general documentation, we created training step by step interactive document to educate users on how the site works and how to complete an order. We did a video 2 minutes ([link here url](#) )

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for quality training and interactive materials

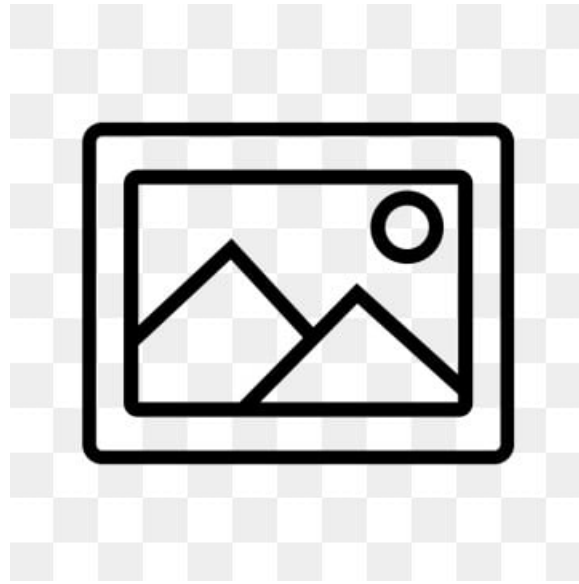


Figure 13: Caption Goes Here



## 14 Enable Switching 3 Site Templates

An admin user can log in and select an option between 3 colour schemes that would impact our entire site. Here are 3 screenshots (thumbnails), a sample page generated based on each template: `img 1`, `img 2`, `img 3`.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for full functionality

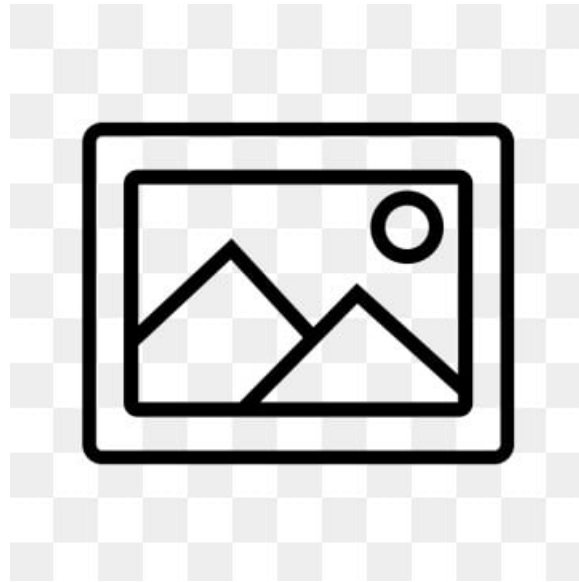


Figure 14: Caption Goes Here

## 15 Database Used

MySQL database used with 15 tables created

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for using a database with minimum 5 tables

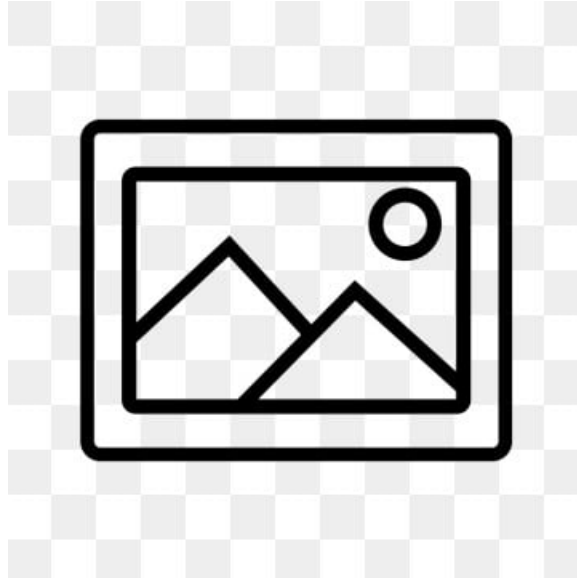


Figure 15: Caption Goes Here

## 16 Data Record Manipulations

we used "insert", "select", "delete" and "update" SQL queries. Here are some sample commands from the PHP code for each:

¡SQL 1¡ // this SQL inserts a new order into table called "orders" with a unique order id generated automatically

¡SQL 2¡ // this SQL deletes a product from our product table. It also checks to make sure the product does not exist in any order.

¡...¡

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for correct use of SQL and non-trivial queries, at least 3 different SQL commands used (e.g. select, insert, delete)

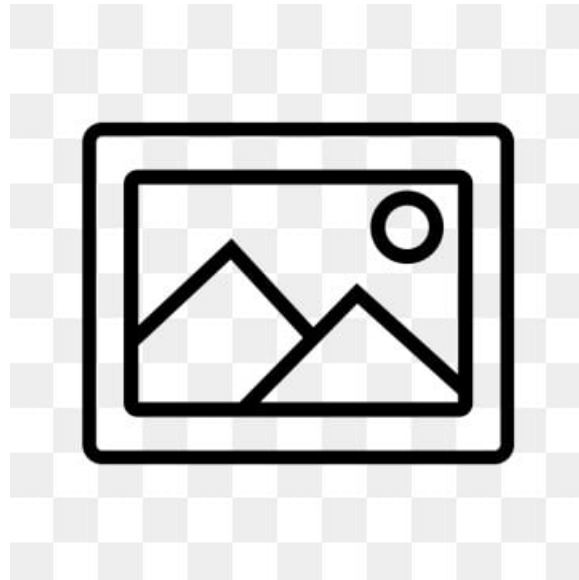


Figure 16: Caption Goes Here

## 17 User Management

admin user can add, remove, update user records and disable accounts without removing them; admin user can generate list of all registered users and generate an email list.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for user management functions

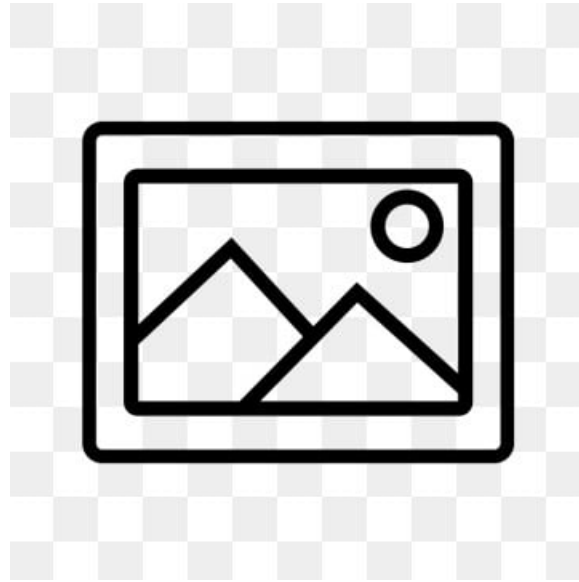


Figure 17: Caption Goes Here

## 18 Admin Documentation

(url here) used to provide the admin with the details and use of the admin features.

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts for admin documentation page(s)

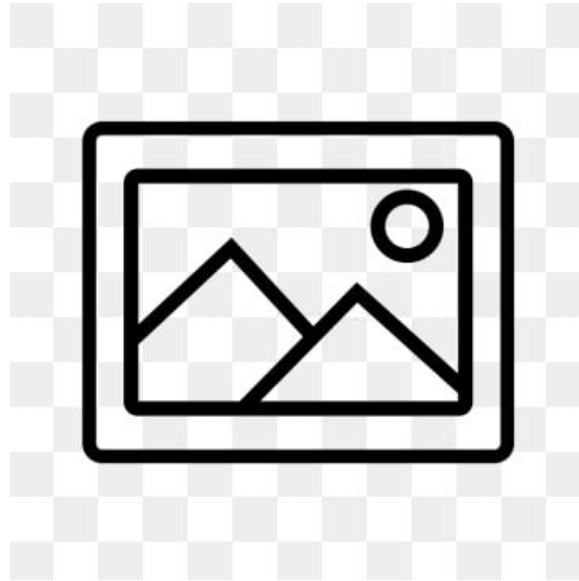


Figure 18: Caption Goes Here

## 19 Status & Monitoring Page

status.php url here this page when loaded it tests to see if the database is working (green light), if the webserver is working (green light), it shows red otherwise. Implemented on a different server. hint: to test if a db is working just connect and run a dummy query. to test if a site is working, you just call a PHP script that returns some value and if it fails (check the return call) then it would not be working.).

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts for a working monitor

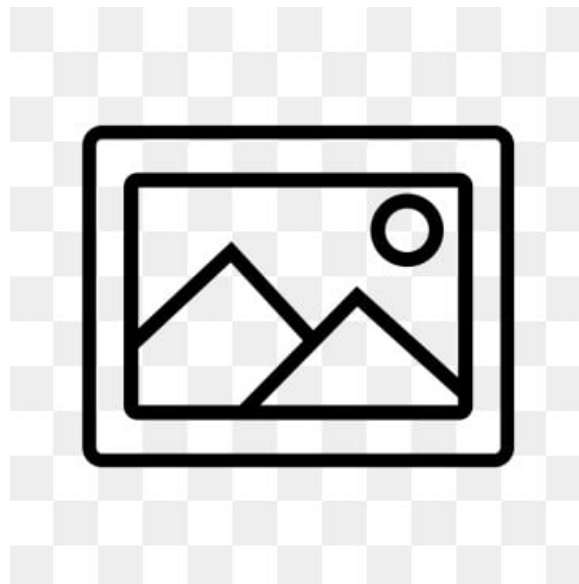


Figure 19: Caption Goes Here

## 20 Database Records

the table "product" has 50 records, the table "orders" has 10 records. (total should be minimum 50)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for at least 50 records overall in the db

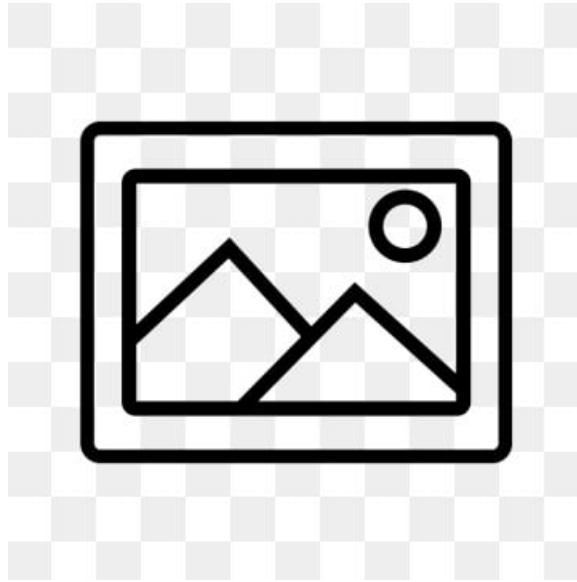


Figure 20: Caption Goes Here

## 21 Open Data Set

### Air Quality Data by Canadian Province

For our open dataset, we used one of the Government of Canada's official datasets. The data set is from *Environment and Climate Change Canada* department, and describes air quality monitoring data gathered by the *National Air Pollution Surveillance Program* (NAPS) from the years 1974 to 2020. To make this dataset more relevant to our audience, we opted to only include data from the most recent year available, 2020.

### Dataset URL

The URL for the complete dataset can be found here <https://data-donnees.ec.gc.ca/data/air/monitor/national-air-pollution-surveillance-naps-program/Data-Donnees/?lang=en>.

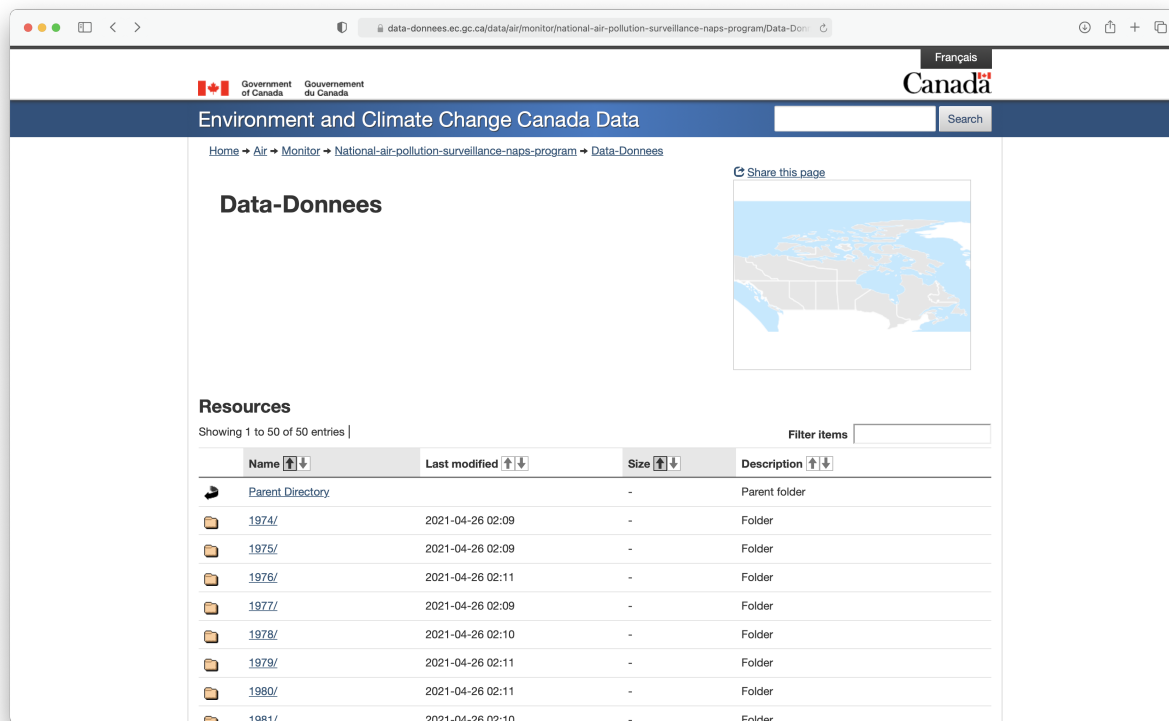


Figure 21: NAPS Program: Live Open Dataset



## Code Implementation

The open dataset was provided in separate CSV files (by city) and was manually reorganized, cleansed and formatted into a single CSV table. The table was then summarized using an Excel pivot table and the data directly applied to a JavaScript data visualization framework (Plotly.js) displayed below to maximize data visualization speed and performance:

```
1 var trace1 = {
2     x: ['AB', 'BC', 'MB', 'NB', 'NL', 'NS', 'ON', 'PE', 'QC', 'SK', 'YU'],
3     y: [5.764, 4.922, 3.614, 5.668, 3.657, 3.674, 6.182, 3.321, 6.545, 4.722, 2.588],
4     type: 'bar',
5     text: ['5.764 (micro)g/m3', '4.922 (micro)g/m3', '3.614 (micro)g/m3',
6           '5.668 (micro)g/m3', '3.657 (micro)g/m3', '3.674 (micro)g/m3',
7           '6.182 (micro)g/m3', '3.321 (micro)g/m3', '6.545 (micro)g/m3',
8           '4.722 (micro)g/m3', '2.588 (micro)g/m3'],
9     marker: { color: '#ffcc99' }
10 };
11
12 var data = [trace1];
13
14 var titleCode = `
15     <span id="airQualityTitle" style="font-family: 'Public Sans',
16         sans-serif; font-size: 1.618rem; font-weight: bold;">
17         Statistic data of PM2.5
18     </span>
19     <br>
20     <span id="airQualitySubtitle" style="font-family: 'Public Sans',
21         sans-serif; font-size: 1rem;">
22         Based on National Air Pollution <br> Surveillance (NAPS)
23         Program
24     </span>
25 `;
26
27 var layout = {
28     title: titleCode,
29     font: { family: 'Raleway, sans-serif' },
30     showlegend: false,
31     xaxis: { tickangle: -45 },
32     yaxis: {
33         zeroline: false,
34         gridwidth: 2
35     },
36     bargap: 0.5
37 };
38
39 Plotly.newPlot('airQuality', data, layout);
```

## 22 PHP

A minimum of 5 scripts with documentation and 26 total PHP scripts were created at the time of this writing to make the website fully-operational with its current features.

1. DatabaseHelper.php
2. ThemeHelper.php
3. adminlogin\_editrecord.php
4. adminlogin\_edituser.php
5. adminlogin\_status.php
6. adminlogout.php
7. city.php
8. dreamcity.php
9. editrecord.php
10. edituser.php
11. favorite.php
12. index.php
13. login.php
14. logout.php
15. navigation.php
16. post.php
17. profile.php
18. registration.php
19. status.php
20. switchtheme.php
21. userchange.php
22. validation\_editrecord.php
23. validation\_edituser.php
24. validation\_status.php
25. validation.php

## 5 PHP Script Samples with Documentation



```
city.php M x
public_html > city.php > ...
1 <?php
2
3 // This is a script to generate a dynamic city page
4
5 session_start();
6
7 require_once('./helpers/ThemeHelper.php');
8 $theme_color = 'blue';
9 if (isset($_SESSION['theme'])) {
10     $theme_color = $_SESSION['theme'];
11 }
12
13 require_once('./helpers/DatabaseHelper.php');
14
15 /**
16  * -----
17  * SQL CONNECTION CREDENTIALS
18  * -----
19  * Configure SQL Connection using configuration file in server
20  * -----
21  */
22 $sql_configuration_array = parse_ini_file("../../../sql-config.ini", true);
23
24 // Test server config location
25 if ($_SERVER['SERVER_NAME'] == 'newcitybetterlife.com' || $_SERVER['HTTP_HOST'] ==
    'newcitybetterlife.com') {
26     $sql_configuration_array = parse_ini_file("../sql-config.ini", true);
27 }
28
29 $db_name           = $sql_configuration_array['database']['database'];
30 $db_hostname       = $sql_configuration_array['database']['hostname'];
31 $db_username       = $sql_configuration_array['database']['username'];
32 $db_password       = $sql_configuration_array['database']['password'];
33
34 /**
35  * -----
36  * CLASS: CITY
37  * -----
38  * A data type that represents a City Object, with fields obtained from a MySQL record
39  * using the city rank as the primary key.
40  * -----
41  */
42 final class City {
43
44     public $rank;
45     public $city_town;
46     public $province;
47     public $population;
48     public $avg_home_price_2020;
49     public $avg_mortgage_payment_20_down;
50     public $min_income_required_20_down;
51     public $proximity_to_large_water_body;
52     public $proximity_to_mountains;
53     public $scenery_rating;
54     public $nightlife_rating;
55     public $outdoor_activity_rating;
56     public $climate_rating;
```

Figure 22: Script: city.php

```

favorite.php M X
public_html > favorite.php > ...
1  <?php
2
3  // This is a script to (toggle) create and delete user favorite records of available cities
4
5  require_once('./helpers/DatabaseHelper.php');
6
7  // MAIN SERVER: Extract configuration items from hidden configuration file
8  $sql_configuration_array = parse_ini_file("../../../sql-config.ini", true);
9
10 // TEST SERVER: Extract configuration items from hidden configuration file
11 if ($SERVER['SERVER_NAME'] == 'newcitybetterlife.com' || $SERVER['HTTP_HOST'] ==
    'newcitybetterlife.com') {
12     $sql_configuration_array = parse_ini_file("../sql-config.ini", true);
13 }
14
15 // Extract individual variables from parsed array
16 $db_name = $sql_configuration_array['database']['database'];
17 $db_hostname = $sql_configuration_array['database']['hostname'];
18 $db_username = $sql_configuration_array['database']['username'];
19 $db_password = $sql_configuration_array['database']['password'];
20
21 // Execute script on post
22 if ($SERVER['REQUEST_METHOD'] == 'POST' && isset($_POST['toggle-city-favorite']) && isset
    ($_POST['username'])) {
23
24     // Get posted rank and username
25     $selected_city_rank = $_POST['toggle-city-favorite'];
26     $selected_username = $_POST['username'];
27
28     // Connect to database
29     $database_helper = new DatabaseHelper($db_hostname, $db_name, $db_username,
        $db_password);
30
31     // Find city with the posted rank
32     $selected_city_record_array = $database_helper->get("SELECT * FROM cities WHERE rank =
        $selected_city_rank");
33
34     // Get city name and province code
35     $selected_city_name = $selected_city_record_array[0]['city_town'] . ", " .
        $selected_city_record_array[0]['province'];
36
37     // Create the favorites table if it doesn't exist
38     if ($database_helper->is_this_table_created("favorites") == false) {
39         $database_helper->set("CREATE TABLE `favorites` (`username` VARCHAR(255) NOT NULL,
            `favorite_city_rank` INT, `favorite_city_name` VARCHAR(255))");
40     }
41
42     // Check if user has favorite record of current city
43     $user_favorite_record = $database_helper->get("SELECT * FROM favorites WHERE username
        = '$selected_username' AND favorite_city_rank = $selected_city_rank");
44
45     // Toggling a favorite
46     // Create the record if it doesn't exist
47     // Delete the record if it exists
48     if (count($user_favorite_record) == 0) {
49         $database_helper->set("INSERT INTO favorites(username, favorite_city_rank,
            favorite_city_name) VALUES ('$selected_username', $selected_city_rank,

```

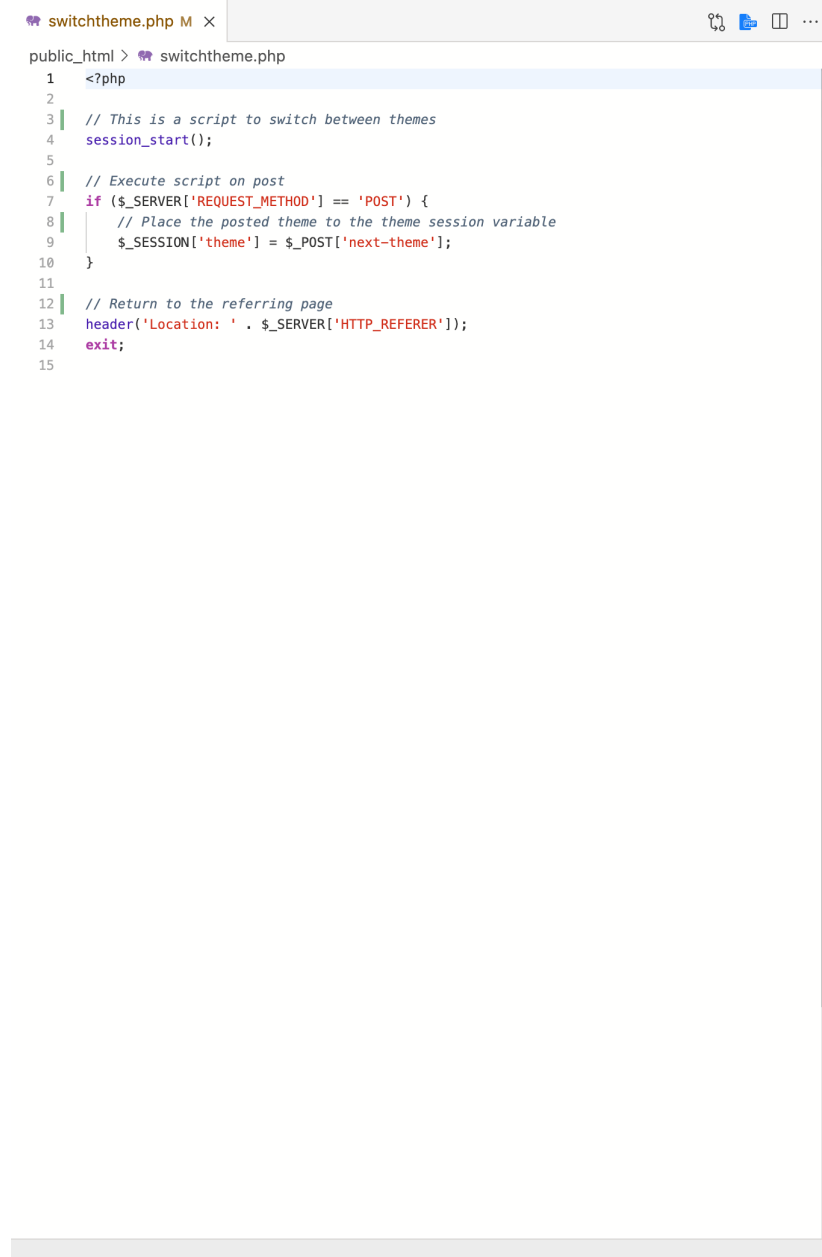
Figure 23: Script: favorite.php

```

post.php M x
public_html > post.php > ...
1  <?php
2
3
4  // This is a script to create and delete system notification posts created by admin
   accounts
5
6  session_start();
7
8  require_once('./helpers/DatabaseHelper.php');
9
10 // MAIN SERVER: Extract configuration items from hidden configuration file
11 $sql_configuration_array = parse_ini_file("../../../sql-config.ini", true);
12
13 // TEST SERVER: Extract configuration items from hidden configuration file
14 if ($_SERVER['SERVER_NAME'] == 'newcitybetterlife.com' || $_SERVER['HTTP_HOST'] ==
   'newcitybetterlife.com') {
15     $sql_configuration_array = parse_ini_file("../sql-config.ini", true);
16 }
17
18 // Extract individual variables from parsed array
19 $db_name = $sql_configuration_array['database']['database'];
20 $db_hostname = $sql_configuration_array['database']['hostname'];
21 $db_username = $sql_configuration_array['database']['username'];
22 $db_password = $sql_configuration_array['database']['password'];
23
24 // Execute script on post
25 if ($_SERVER['REQUEST_METHOD'] == 'POST') {
26
27     // Connect to database
28     $database_helper = new DatabaseHelper($db_hostname, $db_name, $db_username,
   $db_password);
29
30     // Logic to create a notification
31     if (isset($_POST['system-notification-create'])) {
32         /// -----
33         /// DETECT A POST CREATION REQUEST
34         /// -----
35         // Clean the data
36         $admin_username = filter_var($_POST['system-notification-post-author'],
   FILTER_SANITIZE_STRING);
37         $post_title = filter_var($_POST['system-notification-post-title'],
   FILTER_SANITIZE_STRING);
38         $post_content = filter_var($_POST['system-notification-post-content'],
   FILTER_SANITIZE_STRING);
39
40         // Create posts table if it doesn't exist
41         if ($database_helper->is_this_table_created("posts") == false) {
42             $database_helper->set("CREATE TABLE 'posts' (
43                 `id` INT(32) NOT NULL AUTO_INCREMENT ,
44                 `username` VARCHAR(255) NOT NULL ,
45                 `post_title` TEXT NOT NULL ,
46                 `post_content` TEXT NOT NULL ,
47                 `timestamp` DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP ,
48                 PRIMARY KEY (`id`)) ENGINE = InnoDB;");
49         }
50
51         // Create admin table if it doesn't exist

```

Figure 24: Script: post.php

A screenshot of a code editor window. The title bar at the top shows a file icon, the filename 'switchtheme.php', and a close button. The editor area contains PHP code with syntax highlighting. Line numbers 1 through 15 are visible on the left. The code starts with a PHP opening tag, followed by a comment, session\_start(), another comment, an if statement checking for a POST request, and then setting a session variable. It ends with a header function call and an exit statement.

```
1 <?php
2
3 // This is a script to switch between themes
4 session_start();
5
6 // Execute script on post
7 if ($_SERVER['REQUEST_METHOD'] == 'POST') {
8     // Place the posted theme to the theme session variable
9     $_SESSION['theme'] = $_POST['next-theme'];
10 }
11
12 // Return to the referring page
13 header('Location: ' . $_SERVER['HTTP_REFERER']);
14 exit;
15
```

Figure 25: Script: switchtheme.php

```
validation_status.php M ●
public_html > validation_status.php > ...
1
2 <?php
3
4 // This is a script to validate an administrator login
5 session_start();
6
7 // Connect to the database
8 $con = mysqli_connect('localhost', 'qiao6', 'Woshishen@2021');
9 if (!$con) {
10     die("connection fail: " . mysqli_connect_error());
11 }
12
13 mysqli_select_db($con, 'qiao6_comp3340');
14
15 // Obtain submitted admin credentials
16 $name = $_POST['username'];
17 $pass = $_POST['password'];
18
19 // Find the admin with the same credentials
20 $s = "select * from admins where username = '$name' && password = '$pass' ";
21 $result = mysqli_query($con, $s);
22 $num = mysqli_num_rows($result);
23
24 // If the admin exists, log them in
25 // If not, display an login error message
26 if ($num == 1) {
27     $_SESSION['user'] = $name;
28     header('location:status.php');
29 } else {
30     echo '<script>if(!alert("Incorrect username or password. Try again!")) document.
31         location = "adminlogin_status.php";</script>';
32 }
33 ?>
```

Figure 26: Script: validation\_status.php

## 23 Additional Language/Framework

For our project, we used two additional frameworks.

### PlotlyJS

The first framework is PlotlyJS, which is a graphing framework used to visualize our dataset. The framework provides an ability for developers to create interactive graphs and data visualizations from inputted data.

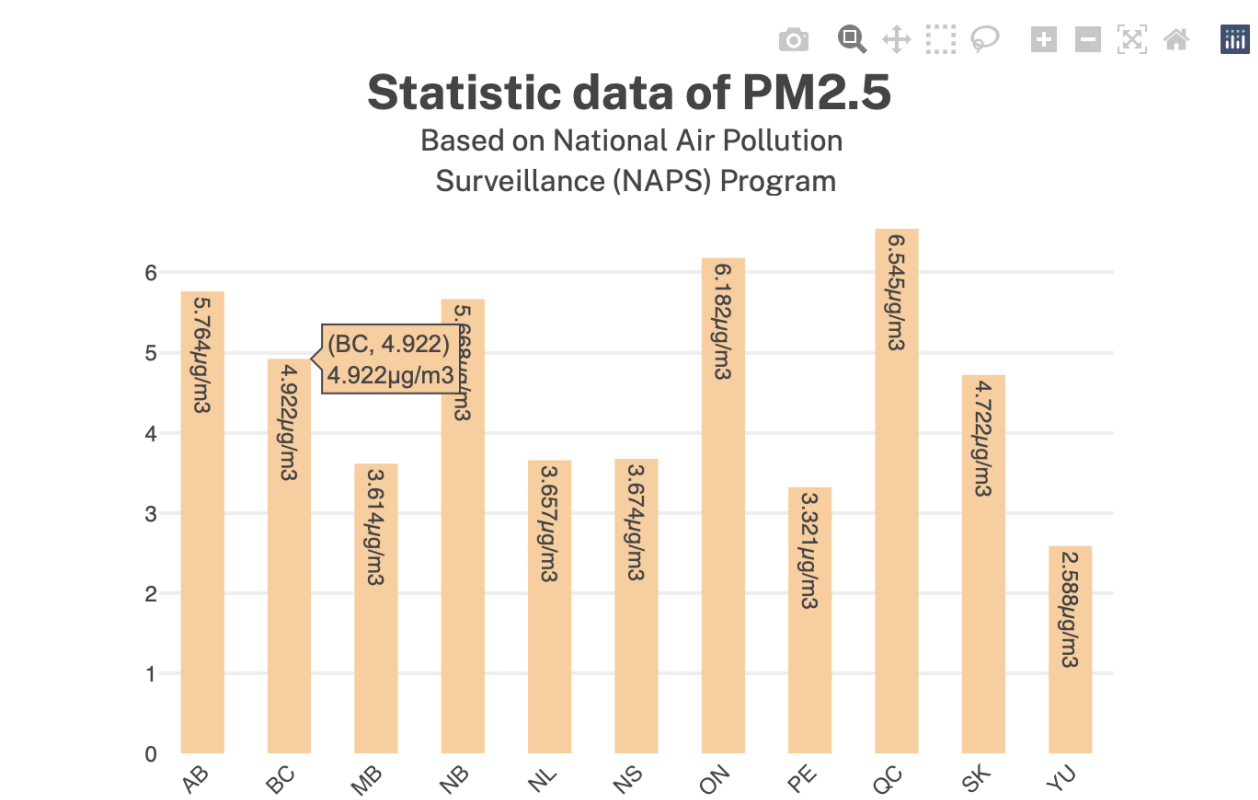


Figure 27: Framework 1: PlotlyJS



## Bootstrap

The second framework is Bootstrap, which was used to design key pages for the website, while also making these pages responsive. The framework provides the ability for developers to create and style elements using pre-designed css elements that are part of the bootstrap framework.

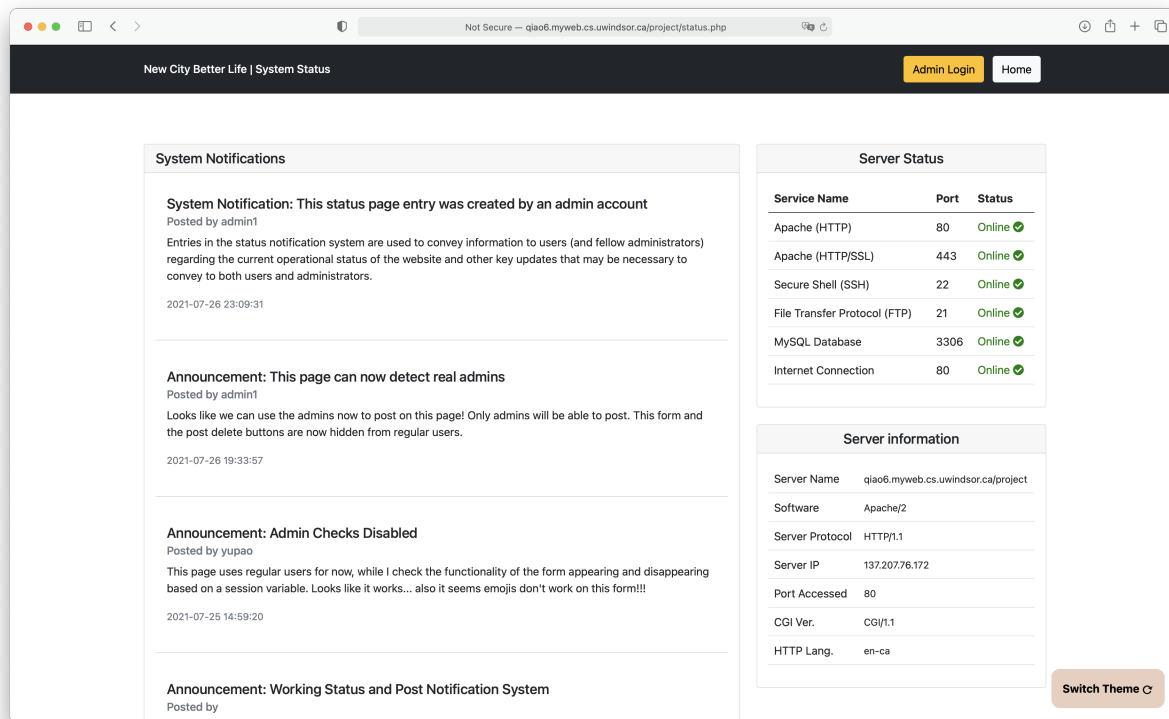


Figure 28: Framework 2: Bootstrap

## 24 Software Repository

we used github here is the link: url here (be sure to provide public access to it; or a guest username/password)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for showing a thorough repository with multiple branches/history

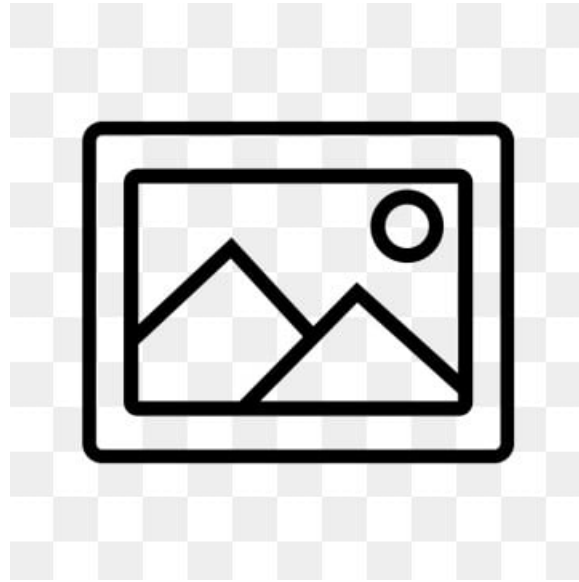


Figure 29: Caption Goes Here

## 25 Installation and Deployment

this site can be cloned from the github repository using the following branch, with instructions to configure the db manually found here: [url here](#)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 2 pts for installation instructions

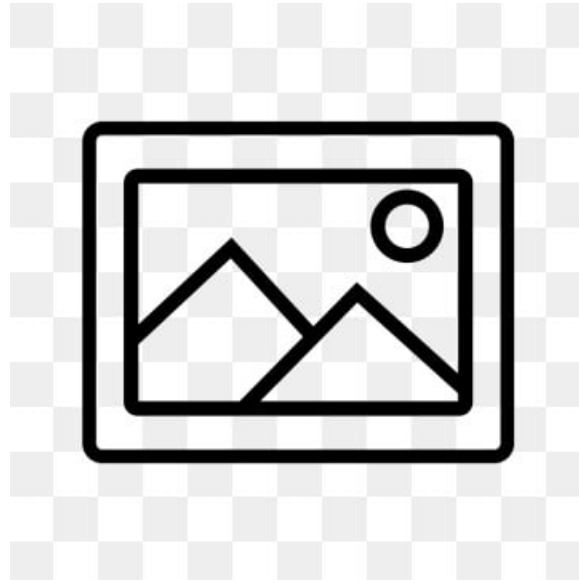


Figure 30: Caption Goes Here

## 26 Accessibility

we used tags for all images, and ensure compliance with WCAG2.0 standard (url) tool used:  
.. Link: [HTTP:// report attached](http://report.attached).

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for the report printout showing compliance for the site

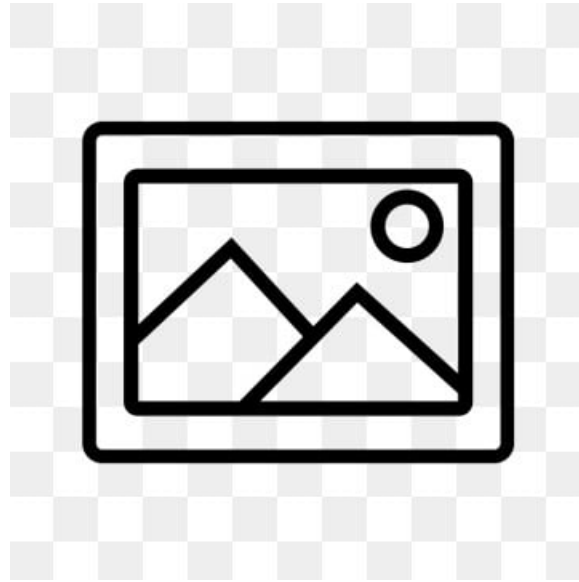


Figure 31: Caption Goes Here

## 27 Mark-Up Validation Service

Ran the site on: <https://validator.w3.org/>  
report attached

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for the report printout showing compliance for the site.

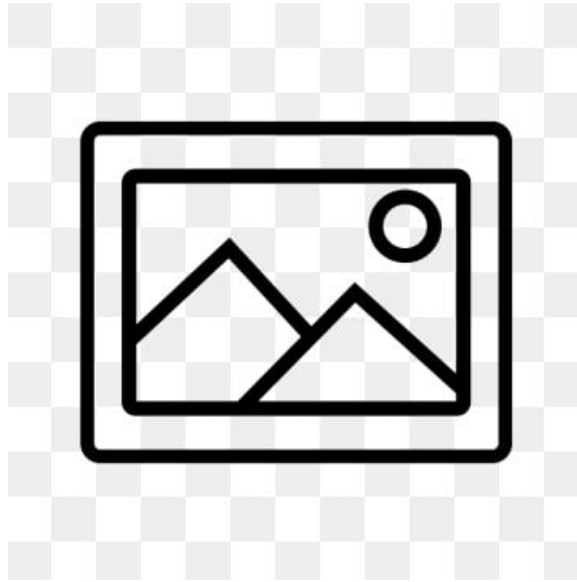


Figure 32: Caption Goes Here

## 28 Testing

used selenium to test for broken links and a bug reporting tool on redmine. (testing tool not required; but any form of testing is expected, at least one)

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for a testing strategy

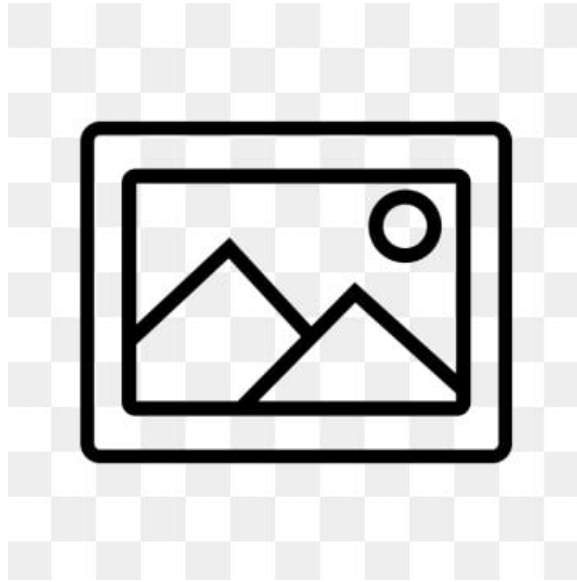


Figure 33: Caption Goes Here

## 29 Team Management

We used redmine for team management link here be sure to provide guest access or plenty of screenshots

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 5 pts for team work organized over a period of no less than 4 weeks

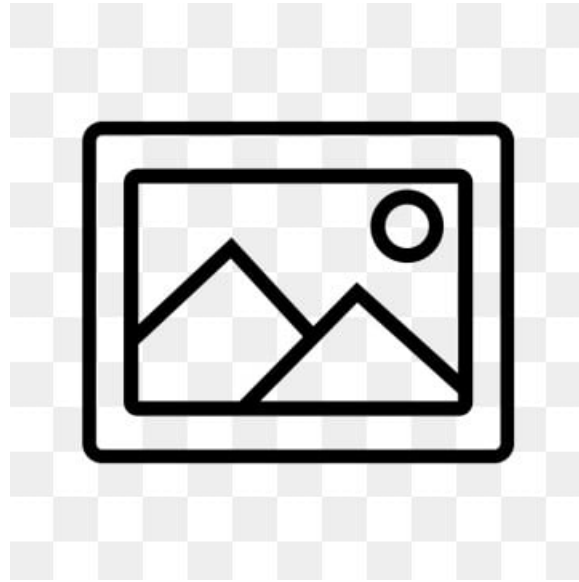


Figure 34: Caption Goes Here

## 30 Overall Completeness & Error Free Functionality

Site can be tested here, we completed 100 percent of the functionality here is the sitemap showing all the features

In your report, for each item using the corresponding section number from the table above to present/expand on the work you have done. You can include code segments, screenshots and charts as needed for each individual section. You will receive points as indicated above for each section. There is no page limit. Keep the screenshots readable.

up to 10 pts for overall impression of the site in terms of complete functionality and error free (aesthetics / look and feel are not given grades, but CSS use is expected).

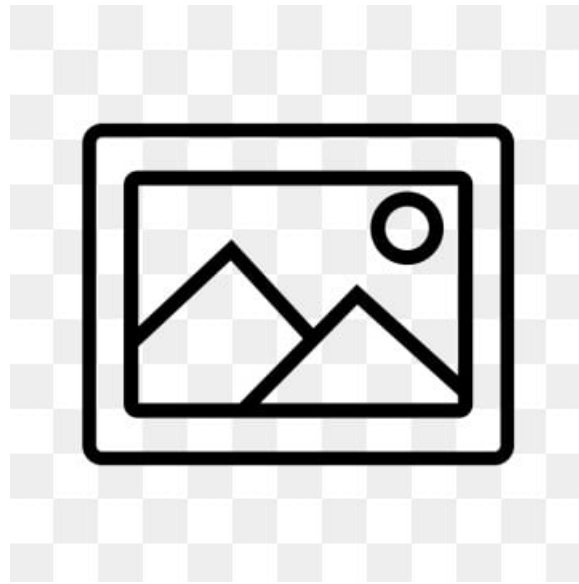


Figure 35: Caption Goes Here