

SW Engineering CSC648/848 Summer 2019

“The Better City”

Team: 04

Team Members:

Maithri Chullikana House: Team Leader Email: mchullikanahouse@mail.sfsu.edu
Soham Harshadbhai Prajapati: Front-End Leader
Patrick Benjamin Raymore: Back-End Leader
Bahar Moattar: GitHub Master, Document Editor
Ziping Huang: Back-End Developer
Aashutosh Bajgain: Back-End Developer
Fengze You: Front-End Developer
Zeyuan Cai: Front-End Developer

Milestone: 4
Date: 08/12/2019

History Table: Revised Version Per Instructor's Feedback

1) Product summary

Name of the product: The Better City

Our product is “The Better City”. You can get an idea of what our application is about based on the name. “The Better City” will allow the user to be able to report a variety of environmental issues so that other users will get an idea of that and get encouraged to report what they see in their own neighborhood. It also helps the local government to get all the information so that they will be able to make a plan to work on it. As we all know, it is a big data society nowadays. Instead of collecting small pieces of information piece by piece, our application provided a platform to merge all the data and information together. Imagine you are going somewhere for your vacation. Using our application will give you an idea of what you need to prepare, what are some environmental issues that is happening around that area, and help you make your plans more efficiently.

In this application our user will be able to:

- Register an account.
- Log into the website.
- Report environmental issues.
- View and browse through the environmental issues that are posted and reported on the website by other users.
- Search through the reported issues;
- Filter them all by categories, and status (If the report is still open, in progress, or done).

The admin also has access to some features and can do more editing:

- Changing the status of a report through MySQL workbench.
- Managing all reports that users submitted.
- Deleting or modifying the reports through MySQL workbench.

Our application is different and unique:

- It allows users to report the issues by uploading images.
- It makes it so easy for the user to search through the reported issues.
- It also allows users and admins to filter and sort the reports based on category and status.

URL:

<http://ec2-18-216-80-193.us-east-2.compute.amazonaws.com/>

2) Usability test plan

Major function: Search

Test objectives: Search function is being tested because it is one of the main functions needed in an environmental issue website where users/admin can search for an issue and is able to get the results/contents of that desired issue or something close to it by title with %like. By being able to search and see the contents of the desired issue, users will be able to know that there is an environmental issue going on somewhere they know and when it will be fixed which will bring a sense of safety by knowing the problem. For the admin/workers, search function with filters and sorting will be able to allow the admin to browse through new issues that are posted by users, so they can see what environment issue needed attention and change the status of it when they are working or already fixed the case.

Test background and setup:

System setup: Users can access the website with Google Chrome, Mozilla Firefox, and Internet Explorer in operating system such as window, macOS, and Linux/ubuntu. The search function will be on every page on the website where users can search their desired issues by title with %like and will show all the results that are found close to that title inside the database.

Starting point:

User has to open a web browser such as Google Chrome, Mozilla Firefox, and Internet Explorer then go to our website. Then find the search bar and enter the title they are looking for. For example, user wants to find an issue with park in the title and types “park” on the search bar. They will get all the results with the title that contains the word “park” that is in the database.

Intended users:

Environmentally conscious people who will report the problems they see around them, and also for workers that are going to fix these issues.

URL:

<http://ec2-18-216-80-193.us-east-2.compute.amazonaws.com/>

and we will be measuring how effective, efficient, and user satisfaction of the search function.

Usability Task description:

Effectiveness: The overall effectiveness of our search function would be determined by whether the user is able to search and find their environmental issue that they are looking for. The user would have to search the issue by title, and they should be able to see the result or will be shown all results that contains the keyword inputted by the user.

Efficiency:

The overall efficiency of the search function will be measured by the average time for the user to find their search results, number of clicks, and number of screens it takes for the user to be able to see their search results.

Lickert subjective test:

Task for Lickert scale questions: Go to the search bar and type in the title of the issue: “Broken Slide”, then click search to display all results with that title.

1.

I was able to find the search results that I'm looking for.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Comments:				

2.

It was easy to search for an environmental issue.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Comments:				

3.

I was able to quickly find my search results.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Comments:				

3) QA test plan

Test objectives: To check if the filter and search features are working as designed,

HW and SW setup: Ran the application on the server, opened the website URL on the Firefox and Chrome browsers.

URL: <http://ec2-18-216-80-193.us-east-2.compute.amazonaws.com/>

Feature to be tested: Filter and search features are tested

QA Test plan:

Browser: Google Chrome, Mozilla Firefox

Test #	Title	Description	Input	Expected Output	Result
1	No Input search	Submitting search without entering any search keyword or choosing a category/status	Don't enter anything in the search bar and hit enter	All 6 records in DB	PASS
2	Special characters	Submitting search with a keyword that has special characters	Enter // on the search bar and click search	Error message displayed- "Please enter alphanumeric characters only"	PASS
3	Incorrect keyword	Submitting search with a keyword that does not have special characters, but is not found in the database	Enter the word "random" on the search bar and hit enter	Error message displayed- "No records found for current search, try a different category or search keyword"	PASS
4	Search right keyword in Upper Case/ Lower case/ mixed case	Submitting search with the right keyword in different cases	Enter keyword Dump or DUMP or dUmP in the search bar and hit enter	Shows message: 1 results found: And displays the record with 'dump' in its title	PASS

4) Code Review

a) Our coding style:

- Camel Casing for variable naming.
- Description of each function in comments right before the function begins.
- Frequent code commenting .
- File naming is following the standard MVC pattern
- Each file has its own header with the date its created, the name of the author, and copyright reserved.

b) Code Review:

Front end development #12

[! Open](#) Maithri-CH wants to merge 7 commits into `master` from `front_end_development` [Edit](#)

Conversation 11 Commits 7 Checks 0 Files changed 8 +329 -232

Changes from 1 commit File filter... Clear filters Jump to... Review changes

Comments fixed as per discussion!

front_end_development (#12) + google-map-inegration- (#13)

aashutosh19 committed 13 hours ago commit d08331ccf393c166c4335d1b8caf7335feb1d150

18 application/team4-development/views/AboutUs.html

```
@@ -1,13 +1,11 @@
-<----- HEAD
-// Contact.html
// CSC648-su19-Team04
-// The Better City
// Created by Maithri, Ziping, Ryan, Aashutosh, Fengze, Soham, Bahar, Patrick on
7/28/19.
-// Edited by Maithri, Ziping, Ryan, Aashutosh, Fengze, Soham, Bahar, Patrick
// Copyright © CSC-648/848 Team 04. All rights reserved.

=====
->>>> ec101a0fdb288ef7e397d763ff08497cc78aa26e
<html lang="en">
```

1 +
2 <!-- Write your comments here Contact.html
3 // CSC648-su19-Team04
4 // The Better City
5 // Created by Maithri, Ziping, Ryan, Aashutosh, Fengze, Soham, Bahar, Patrick on
7/28/19.
6 // Copyright © CSC-648/848 Team 04. All rights reserved.
7 +-->
8

Front end development #12

Changes from 1 commit File filter... Clear filters Jump to... Review changes

4 application/team4-development/views/AboutUs.html

```
@@ -1,8 +1,8 @@
-<!-- Write your comments here Contact.html
// CSC648-su19-Team04
// The Better City
-// Created by Maithri, Ziping, Ryan, Aashutosh, Fengze, Soham, Bahar, Patrick on
7/28/19.
// Copyright © CSC-648/848 Team 04. All rights reserved.
-->
```

1
2 <!--AboutUs.html
3 // CSC648-su19-Team04
4 // The Better City
5 // Created by Maithri on 7/28/19.
6 // Copyright © CSC-648/848 Team 04. All rights reserved.
7 -->
8

4 application/team4-development/views/Contact.html

```
@@ -1,8 +1,8 @@
-<!-- Write your comments here Contact.html
// CSC648-su19-Team04
// The Better City
-// Created by Ryan on 7/28/19.
// Copyright © CSC-648/848 Team 04. All rights reserved.
-->
```

1
2 <!--Contact.html
3 // CSC648-su19-Team04
4 // The Better City
5 // Created by Fengze on 7/28/19.
6 // Copyright © CSC-648/848 Team 04. All rights reserved.
7 -->
8

Front end development #12
Changes from all commits ▾ File filter... ▾ Jump to... ▾ ⚙ ▾

0 / 8 files viewed ⓘ Review changes ▾

12 application/team4-development/views/AboutUs.html

Viewed ...

2 10

3 <head>

4 @@ -73,7 +81,7 @@ <h6>We help you check the environmental issues and connect to the right authori

5 <!-- Collect the nav links, forms, and other content for toggling -->

6 <div class="collapse navbar-collapse offset" id="navbarSupportedContent">

7 <ul class="nav navbar-nav menu_nav ml-auto mr-auto">

8 <li class="nav-item ">Home

9 <!-- Collect the nav links, forms, and other content for toggling -->

10 <div class="collapse navbar-collapse offset" id="navbarSupportedContent">

11 <ul class="nav navbar-nav menu_nav ml-auto mr-auto">

12 <li class="nav-item ">Home

sprajapatit10 17 minutes ago + 😊 ...
Please replace "Home.hbs" to "/"

Reply...

Resolve conversation

Front end development #12

Changes from 1 commit ▾ File filter... × Clear filters Jump to... ⚙ Review changes ▾

application/team4-development/views/AboutUs.html

@@ -81,7 +81,7 @@ <h6>We help you check the environmental issues and connect to the right authori

```
1 81      <!-- Collect the nav links, forms, and other content for toggling -->
2 82      <div class="collapse navbar-collapse offset" id="navbarSupportedContent">
3 83          <ul class="nav navbar-nav menu_nav ml-auto mr-auto">
4 84      -      <li class="nav-item"><a class="nav-link" href="#">Home</a></li>
5 85      -      <li class="nav-item"><a class="nav-link" href="#">SubmitIssue.html">Submit
6 86      Issues</a></li>
7 87      +      <li class="nav-item active"><a class="nav-link" href="#">About Us</a>
8 88          </li>
9 89      +      <li class="nav-item"><a class="nav-link" href="#">Contact.html">Contact
10 90          Us</a></li>
```

```
 2 application/team4-development/views/Contact.html  ...  
@@ -81,7 +81,7 @@ <h6>We help you check the environmental issues and connect to the right authori  
81     <!-- Collect the nav links, forms, and other content for toggling -->  
82     <div class="collapse navbar-collapse offset" id="navbarSupportedContent">  
83       <ul class="nav navbar-nav menu_nav ml-auto mr-auto">  
84         -       <li class="nav-item "><a class="nav-link" href="Home.hbs">Home</a></li>  
85         <li class="nav-item "><a class="nav-link" href="SubmitIssue.html">Submit  
Issues</a></li>  
86         <li class="nav-item "><a class="nav-link" href="AboutUs.html">About  
Us</a></li>  
87         <li class="nav-item active"><a class="nav-link" href="/>Contact Us</a>  
81     <!-- Collect the nav links, forms, and other content for toggling -->  
82     <div class="collapse navbar-collapse offset" id="navbarSupportedContent">  
83       <ul class="nav navbar-nav menu_nav ml-auto mr-auto">  
84         +       <li class="nav-item "><a class="nav-link" href="/">Home</a></li>  
85         <li class="nav-item "><a class="nav-link" href="SubmitIssue.html">Submit  
Issues</a></li>  
86         <li class="nav-item "><a class="nav-link" href="AboutUs.html">About  
Us</a></li>  
87         <li class="nav-item active"><a class="nav-link" href="/>Contact Us</a>
```

Final development #14

Open Maithri-CH wants to merge 3 commits into `front_end_development` from `final_development`

Conversation 2 Commits 3 Checks 0 Files changed 2 +5 -4 Review changes

Changes from 1 commit File filter... × Clear filters Jump to... ⚙

added maxlength validation for searchbar

final_development (#14) Maithri-CH committed 32 minutes ago commit 76ceca167af688449db73cd2c0a0eb139c348c29

application/team4-development/views/Home.hbs

```
@@ -140,7 +140,7 @@  
    <option name="In Progress" value="7">In Progress</option>  
    <option name="Resolved" value="8">Resolved</option>  
  </select>  
-  <input id="search" type="text" name="title" placeholder="search by title..." pattern="^[a-zA-Z-.]*" oninvalid="setCustomValidity('Please enter only Alphabets ')"  
+  <input id="search" type="text" name="title" placeholder="search by title..." maxlength="45" pattern="^[a-zA-Z-.]*"  
  oninvalid="setCustomValidity('Please enter only Alphabets ')"  
  onchange="try(setCustomValidity(''))catch(e){}" class="form-control w-75" value="">  
  <button type="submit" id="searchBtn" class="form-control"><i class="fa fa-search"></i></button>  
  </div>
```

[CSC-648-SFSU/csc648-su19-Team04] Front end development (#12)

X

Inbox

5:29 PM (34 minutes ago)



Maithri-CH <notifications@github.com>
to CSC-648-SFSU/csc648-su19-Team04, me, Review ▾

Please check the comments and header added to all of the html files

You can view, comment on, or merge this pull request online at:

<https://github.com/CSC-648-SFSU/csc648-su19-Team04/pull/12>

Commit Summary

- Added comments and formatting.
- Added comments and formatting
- separated header from all html files and imported it to all html files
- Added final comments, indentation, and contributors list to all pages.
- Added comments, indentation and contributors on all pages.

File Changes

- M [application/team4-development/views/AboutUs.html](#) (14)
- M [application/team4-development/views/Contact.html](#) (248)
- A [application/team4-development/views/Header.html](#) (31)
- M [application/team4-development/views/Home.hbs](#) (156)

----- Forwarded message -----

From: **baharmoattar** <notifications@github.com>

Date: Mon, Aug 5, 2019, 20:52

Subject: Re: [CSC-648-SFSU/csc648-su19-Team04] Front end development (#12)

To: CSC-648-SFSU/csc648-su19-Team04 <csc648-su19-Team04@noreply.github.com>

Cc: sprajapati710 <sprajapatic@gmail.com>, Review requested <review_requested@noreply.github.com>

@baharmoattar requested changes on this pull request.

there is a HEAD showing on top and bottom of the header on this page. the reason for that is your local system is asking if you want to agree with the changes. please fix that part and remove that comment.

ex:

<<<<< HEAD
Header...

[ec101a0](#)

@baharmoattar requested changes on this pull request.

please put a space in your header after // The Better City, its not lined up with the rest of the header

You are receiving this because your review was requested.

Reply to this email directly, [view it on GitHub](#), or [mute the thread](#).

@baharmoattar requested changes on this pull request.

you do not have to add everybody's name as editor. only the originator of this page is enough. please remove everybody else's name.

You are receiving this because your review was requested.

Reply to this email directly, [view it on GitHub](#), or [mute the thread](#).

 [CSC-648-SFSU/csc648-su19-Team04] f91d67: Typo's and sentences corrected as per reviewed.

 **Aashutosh Bajgain <noreply@github.com>**

moattar.bahar@gmail.com

Tuesday, August 6, 2019 at 11:14 AM

[Show Details](#)

 This message is flagged for follow up.

Branch: refs/heads/front_end_development

Home: <https://github.com/CSC-648-SFSU/csc648-su19-Team04>

Commit: f91d6776d5241c819fd68b73b3da848ed2cc125a

<https://github.com/CSC-648-SFSU/csc648-su19-Team04/commit/f91d6776d5241c819fd68b73b3da848ed2cc125a>

Author: Aashutosh Bajgain <nashutoshbazgarn2002@gmail.com>

Date: 2019-08-06 (Tue, 06 Aug 2019)

Changed paths:

M application/team4-development/views/AboutUs.html
M application/team4-development/views/Contact.html
M application/team4-development/views/Header.html
M application/team4-development/views/Home.hbs
M application/team4-development/views>ShowDetailPage.html
M application/team4-development/views/SubmitIssue.html
M application/team4-development/views/Test.hbs

Log Message:

Typo's and sentences corrected as per reviewed.

 Re: [CSC-648-SFSU/csc648-su19-Team04] Front end development (#12)

 **sprajapati710 <notifications@github.com>**

CSC-648-SFSU/csc648-su19-Team04; baharmoattar; State change

Tuesday, August 6, 2019 at 11:34 AM

[Show Details](#)

 To protect your privacy, some pictures in this message were not downloaded.

 This message is flagged for follow up.

@sprajapati710 approved this pull request.

Reviewed all changed! Still needs to modify one change

-- Please replace "Home.hbs" to "/"

In <application/team4-development/views/AboutUs.html>:

```
> @@ -73,7 +81,7 @@ <h6>We help you check the environmental issues and connect to the right authori
  <!-- Collect the nav links, forms, and other content for toggling -->
  <div class="collapse navbar-collapse collapse offset" id="navbarSupportedContent">
    <ul class="nav navbar-nav menu_nav ml-auto mr-auto">
-      <li class="nav-item "><a class="nav-link" href="/">Home</a></li>
+      <li class="nav-item "><a class="nav-link" href="Home.hbs">Home</a></li>
```

Please replace "Home.hbs" to "/"

 [CSC-648-SFSU/csc648-su19-Team04] b73685: Changes made to href 'home.hbs' to...

 **Aashutosh Bajgain <noreply@github.com>**

moattar.bahar@gmail.com

Tuesday, August 6, 2019 at 12:34 PM

[Show Details](#)

Branch: refs/heads/front_end_development

Home: <https://github.com/CSC-648-SFSU/csc648-su19-Team04>

Commit: b7368589df9f5a5cb2f87c3b63dcc1f56bb80edd

<https://github.com/CSC-648-SFSU/csc648-su19-Team04/commit/b7368589df9f5a5cb2f87c3b63dcc1f56bb80edd>

Author: Aashutosh Bajgain <nashutoshbazgarn2002@gmail.com>

Date: 2019-08-06 (Tue, 06 Aug 2019)

Changed paths:

M application/team4-development/views/AboutUs.html
M application/team4-development/views/Contact.html
M application/team4-development/views/SubmitIssue.html

Log Message:

Changes made to href 'home.hbs' to '/'

 [CSC-648-SFSU/csc648-su19-Team04] Final development (#14)



Maithri-CH <notifications@github.com>

CSC-648-SFSU/csc648-su19-Team04; baharmoattar; Review requested

Tuesday, August 6, 2019 at 3:21 PM

[Show Details](#)

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[Download pictures](#)

Please review input validation for search bar

You can view, comment on, or merge this pull request online at:

<https://github.com/CSC-648-SFSU/csc648-su19-Team04/pull/14>

Commit Summary

- Update Home.hbs
- Merge branch 'front_end_development' of <https://github.com/CSC-648-SFSU/csc648-su19-Team04> into front_end_development
- Thumbnail
- added input validation for searchbar
- added field validation to name and password in signup pop up and title in submit issues page

File Changes

- M [application/team4-development/views/Home.hbs](#) (61)
- M [application/team4-development/views/SubmitIssue.html](#) (2)
- A [application/team4-development/views/css/Thumbnail.css](#) (93)

Patch Links:

- <https://github.com/CSC-648-SFSU/csc648-su19-Team04/pull/14.patch>
- <https://github.com/CSC-648-SFSU/csc648-su19-Team04/pull/14.diff>

 [CSC-648-SFSU/csc648-su19-Team04] 76ceca: added maxlength validation for searc...



Maithri-CH <noreply@github.com>

moattar.bahar@gmail.com

Tuesday, August 6, 2019 at 3:38 PM

[Show Details](#)

Branch: refs/heads/final_development

Home: <https://github.com/CSC-648-SFSU/csc648-su19-Team04>

Commit: 76ceca167af688449db73cd2c0a0eb139c348c29

<https://github.com/CSC-648-SFSU/csc648-su19-Team04/commit/76ceca167af688449db73cd2c0a0eb139c348c29>

Author: Maithri-CH <maithrich3@gmail.com>

Date: 2019-08-06 (Tue, 06 Aug 2019)

Changed paths:

M application/team4-development/views/Home.hbs

Log Message:

added maxlength validation for searchbar

 Re: [CSC-648-SFSU/csc648-su19-Team04] Final development (#14)



Maithri-CH <notifications@github.com>

CSC-648-SFSU/csc648-su19-Team04; baharmoattar; Push

Tuesday, August 6, 2019 at 3:38 PM

[Show Details](#)

 To protect your privacy, some pictures in this message were not downloaded.

[@Maithri-CH](#) pushed 1 commit.

- [76ceca1](#) added maxlength validation for searchbar

You are receiving this because you are subscribed to this thread.

[View it on GitHub](#) or [mute the thread](#).

5) Self-check on best practices for security

For password encryption, we will be using a node module named “bcrypt” to hash all passwords. The major assets we are protecting:

- Posted Issues
- Comments
- email
- Passwords
- Image files

We are also using the node module, Helmet. This allows us to protect our site by setting the appropriate HTTP headers. Specifically, it does this by:

- setting the Content-Security-Policy header to help prevent cross-site scripting attacks and other cross-site injections.
- Adds Public Key Pinning headers to prevent man-in-the-middle attacks with forged certificates.
- setting Strict-Transport-Security header that enforces secure (HTTP over SSL/TLS) connections to the server.
- setting the X-Frame-Options header to provide clickjacking protection.
- setting X-XSS-Protection to enable the Cross-site scripting (XSS) filter in most recent web browsers.

Input validation:

We will do server-side validation using the node module -express- validator. This allows us to verify that emails are valid, new passwords are alphanumeric, and search inputs are using whitelisted characters and the length is under 50 characters.

6) Self-check: Adherence to original Non-functional specs

1. The application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team, but all the tools and servers have to be approved by class CTO). – DONE
2. The application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers - ON TRACK
3. Selected application functions must render well on mobile devices – ON TRACK
4. Data shall be stored in the team's chosen database technology on the team's deployment server. - DONE
5. No more than 50 concurrent users shall be accessing the application at any time. - ON TRACK
6. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users. - ON TRACK
7. The language used shall be English. - DONE
8. The application shall be very easy to use and intuitive. – ON TRACK
9. Google analytics shall be added - DONE
10. No email clients shall be allowed. - DONE
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated. - DONE
12. Site security: basic best practices shall be applied (as covered in the class) – ON TRACK
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development. - DONE
14. The website shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Summer 2019. For Demonstration Only" at the top of the WWW page. (Important so as to not confuse this with a real application). – ON TRACK