CS 5760

Usability Test Report

Team 4- Green Space

Team Members:

UX Consultants

1. Ram Sudda
2. Haoyang Chen

Developers:

1. Austin Gennrich
2. Jordan Bramer
3. Kyle McIntyre
4. Michael Romero
5. Coli Dohne
6. Sid Regmi

Scientists:

1. Jesse Alger
2. Mary Ellen Miller

Sudda Parsharam Reddy

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Date: Apr/24/2023

Testing information:

A total of 8 Usability testing session has been scheduled. All these sessions are administrated by a UX consultant, Parsharam Reddy. And each Test is scheduled with a time of 1 hour and the UX consultant is accompanied by two developers.

The Six sessions are scheduled below:

	04/09/2023	04/11/2023	04/13/2023	04/15/2023
11:00 am - 12:00 PM		Colin Dohne & Sid Regmi	Sid Regmi & Michael Romero	
12:00 PM - 1:00 PM	Austin Gennrich & Kyle McIntyre	Michael Romero & Jordan Bramer	Colin Dohne & Jordan Bramer	
1:00 PM - 2 PM		Austin Gennrich & Kyle McIntyre	Austin Gennrich & Kyle McIntyre	
4:00 PM - 5:00 PM				Austin Gennrich & Kyle McIntyre

All these sessions except one are scheduled in Library, and the last one is scheduled in Zoom. A few things are required for the test session, all students must attend the session on time and a laptop with an application running in it is provided, while the last session which is scheduled via Zoom has a few requirements such as.

1. A laptop
2. Strong internet connection
3. Access to Zoom
4. A working microphone and audio output method.

All the participants including the UX Consultant will require to access a few documents

1. All the error reports which were collected during the test
2. Test reports of Testing challenges form.

App Description

This app is designed to improve natural greenspaces and prevent floods by allowing users to upload images to create a scientific map. The app aims to educate the general population on the importance of greenspaces in absorbing stormwater and reducing floods.

The data collected through the app will help scientists and researchers to better understand and improve the greenspaces. The app also maps flood areas with geo-location and time stamps for better improvement. The app features a navbar with several pages, including a Home page with an introduction and educational content, an Education page with content about the green environment, a quiz with 30 questions, and a Maps page that displays all available greenspaces.

Additionally, there is an About Us page that provides information about the project and the team. Overall, this app provides an innovative approach to improving natural greenspaces and reducing the risk of floods. It also offers educational content to the general population and encourages users to participate in improving their environment.

Home page:

- The home page serves as the introductory page of the app and includes educational content and images related to natural greenspaces and flood prevention.
- The home page may also include news or updates related to the app or the environment.

Education page:

a. The education page provides detailed content about natural greenspaces, their benefits, and the role they play in reducing the risk of floods.
b. The education page also includes a quiz with 30 questions to test the user's knowledge about natural greenspaces and flood prevention.
c. Users may earn points or rewards for completing the quiz, which can motivate them to learn more and contribute to the app's mission.

Maps page:

a. The maps page displays all available natural greenspaces in a user-friendly way and allows users to search for greenspaces in their area.
b. The maps page includes detailed information about each greenspace, such as its size, location, and type of vegetation.
c. Users can also contribute to the app by submitting information about greenspaces that are not currently listed on the map.

About Us page:

a. The about us page provides detailed information about the app, its mission, and the team behind it.
b. The about us page may also include information about the app's partners, sponsors, or supporters.
c. This page is essential in establishing credibility and building trust with users, as it allows them to learn more about the app and the people behind it.

Login page:

a. The login page allows users to access their account and use the app's features.
b. The login page may also include options for users to sign up or create an account if they are new to the app.
c. This page is essential for security purposes and ensuring that user data is protected.

Test Scenario 1

1. To assess the ease of navigating through the website in the Greenspace app. a. To evaluate the time required to navigate through the website.
2. Equipment required: Computer or mobile device with internet access.
3. Quantitative measurement list: Time taken to navigate through the website. Several clicks are required to access each page on the website.
4. Scenario Description: You are a user who is visiting the Greenspace app for the first time. You want to explore the website and learn more about the features of the app.
5. Task List:
    1. Open the Greenspace app and log in to your account.
    2. Navigate to the education page. Read the information provided on the education page.
    3. Navigate to the map page.
    4. Zoom in and out of the map to explore different areas. e. Click on a green infrastructure location to view details. f. Navigate back to the homepage.
6. Qualitative measurement list:
   a. Participants' ease of use of the website navigation.
   b. Participants' understanding of the information provided on the education and map pages.
7. Potential observations of participants:
    1. Participants struggled to find the education or map pages.
    2. Participants were confused about the information provided on the education or map pages.
8. Bug Report Form: Description of the bug: Unable to navigate to a specific page on the website.

a. Steps to reproduce: Click on the link to the specific page, and the website does not load the page.

9. Post-Scenario Interview and Questionnaire Questions:
    1. How easy or difficult was it for you to navigate through the website?
    2. Were there any pages or information that were confusing or unclear to you?
    3. Is there anything you would suggest to improve the website navigation?
10. Test Set-up Details:
    1. The test will be conducted online in a quiet room with no distractions.
    2. The participant will use their own computer or mobile device to access the Greenspace app.

Test Scenario 2

1. Test Goals:
    a. To evaluate how well users understand the content provided on the website, and how helpful it is for solving the quiz before accessing it on the Greenspace app.
2. Equipment required:
    a. Computer or smartphone with internet access.
3. Quantitative measurement list:
    a. Several correct answers in the quiz.
    b. Time is taken to complete the quiz.
4. Scenario Description:
    a. You are a user who wants to test their knowledge of green infrastructure before accessing the quiz on the Greenspace app.
    b. You will access the website and complete the quiz without using any external resources.
5. Task List:
    a. Access the website at https://ui-dev.cs.mtu.edu:8108/greenspace/. Read through the provided content on green infrastructure. Complete the quiz provided on the website.
    b. Submit your answers and note your score.
6. Qualitative measurement list:
    a. Participants' understanding of the content provided on the website.
    b. Participants' confidence in their ability to solve the quiz.
7. Potential observations of participants:
    a. Participants struggled to understand the content provided on the website.
    b. The participant felt confident in their ability to solve the quiz.
8. Bug Report Form:
    a. Description of the bug: Unable to complete the quiz.
    b. Steps to reproduce: Access the website, read the content on green infrastructure, and attempt to complete the quiz.
9. Post-Scenario Interview and Questionnaire Questions:
    a. Did you find the content provided on the website helpful for solving the quiz?
    b. Was the quiz challenging or easy for you?
    c. Is there anything you would suggest to improve the content or the quiz?
10. Test Set-up Details:
    a. The test will be conducted online, and the participant will use their computer or smartphone to access the website.
    b. The participant will be asked to complete the quiz without using any external resources.

Test Scenario 3

1. Test Goals:
    a. To evaluate the functionality of the map feature in the Greenspace app.
    b. To assess the accuracy of the green infrastructure locations displayed on the map.
2. Equipment required:
    a. Smartphone with the app installed and a stable internet connection.
3. Quantitative measurement list:
    a. Time is taken to load the map.
    b. Accuracy of the green infrastructure locations displayed on the map.
4. Scenario Description:
    a. You are a user who is interested in exploring the green infrastructure in your city.
    b. You want to use the map feature in the Greenspace app to find the nearest green infrastructure location to your current location.
5. Task List:
    a. Open the Greenspace app and log in to your account.
    b. Navigate to the map feature.
    c. Allow the app to access your location.
    d. Search for green infrastructure locations near you.
    e. Click on a green infrastructure location to see more information about it.
6. Qualitative measurement list:
    a. Participants' ease of use of the map feature.
    b. Participants' understanding of the green infrastructure locations displayed on the map.
7. Potential observations of participants:
    a. Participants struggled to find the map feature.
    b. Participants are unable to allow the app to access their location.
8. Bug Report Form:
    a. Description of the bug:
        i. Incorrect green infrastructure location displayed on the map.
        ii. Steps to reproduce: Search for green infrastructure locations near your current location and click on a green infrastructure location to view more information.
9. Post-Scenario Interview and Questionnaire Questions:
    a. How easy or difficult was it for you to use the map feature?
    b. Were the green infrastructure locations displayed on the map accurate?
    c. Is there anything you would suggest to improve the map feature?
10. Test Set-up Details:
    a. The test will be conducted in person in a quiet room with no distractions.
    b. The participant will use their smartphone to access the app and a stable internet connection will be provided.

During the Testing phase, Testers are first given a pre-questionnaire survey. Given below

1. How do you agree to do the testing of this application
    a. Strongly agree
    b. Agree
    c. Natural
    d. Disagree
    e. Strongly disagree.
2. Do you have any previous experience in testing applications?
    a. Yes
    b. No
3. How much do you know about green resources?
    a. Very good
    b. Good
    c. Neutral
    d. Don’t know
    e. Haven’t heard
4. On a scale of 10, what is your understanding and how comfortable are you with using the technology?
    a. On a scale of 1-10
5. Do you have any previous experience using this kind of application?
    a. Yes
    b. No
6. Do you have any visual or physical impairments that may affect your ability to use the application? (yes/no)

Results

I have summarized the results of all the Test Scenario and outlined the report below

First scenario:

- The user found the website navigation easy to use except for the map, which only loaded after sharing their location.
- The information provided on the website was easy to understand, and no technical issues were encountered.
- The user suggested that an active state on the navigation could be helpful.

Second scenario:

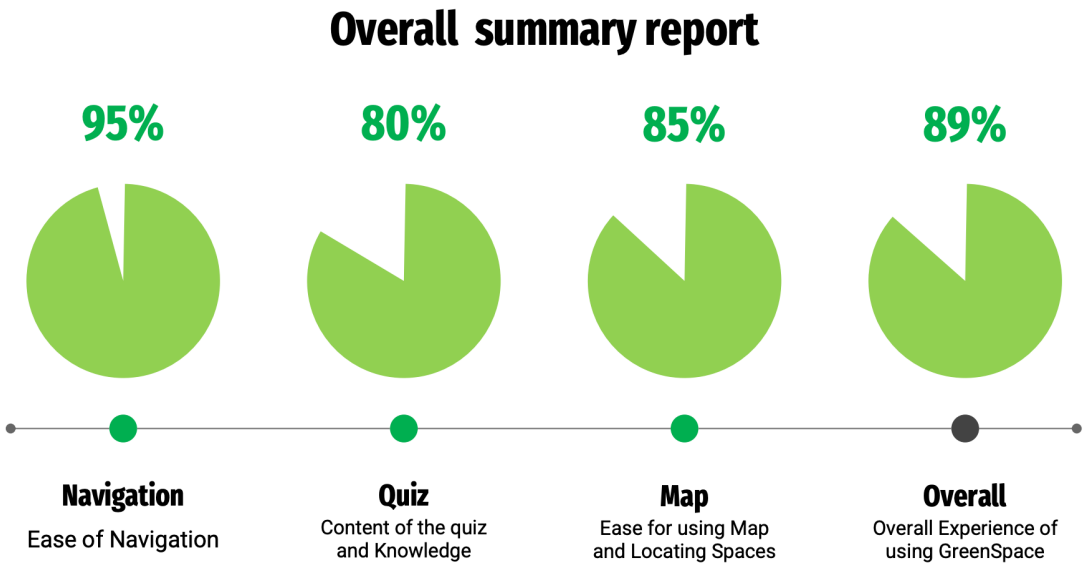
- The user found the content on the website helpful for solving the quiz, which they found easy.
- No questions were particularly difficult, and no technical issues were encountered.
- The user did not have any suggestions for improvement and rated the website and quiz 8 out of 10.

Third scenario:

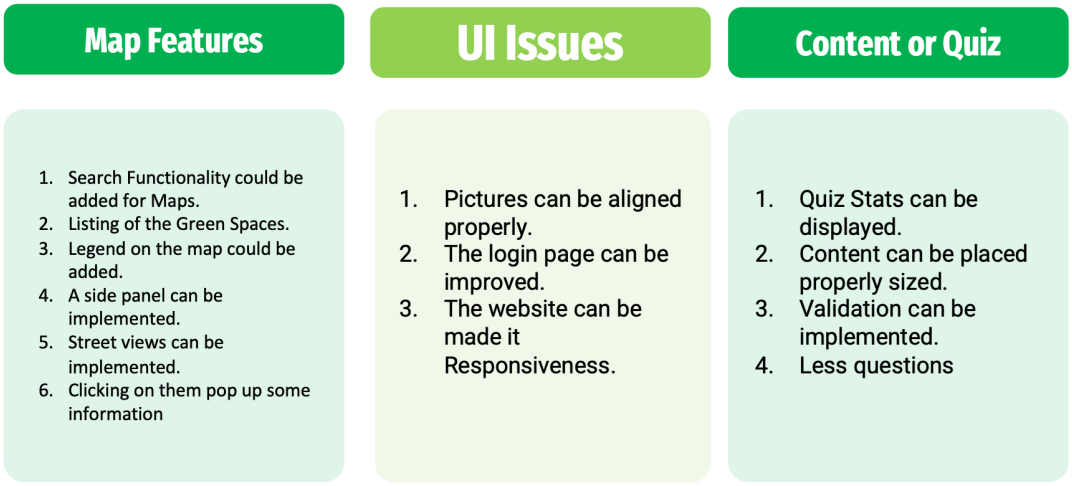
- The user had not used a similar app before but found the Greenspace app easy to navigate, except for difficulties with location access.
- They were able to view more information about green infrastructure locations by clicking on them and rated the overall accuracy of the locations displayed on the map 7 out of 10.
- The user suggested adding place markers as an improvement for the map feature.

Summary about the User feedback in Chart formats

The below figure shows how user were satisfied with the specific topic in all aspects such as UI, Load time, content provided, how relevant it was.



Improvements Suggestions from User



Improvements from UX consultant

1. Map Feature could be improved
2. Navigation can be improved
3. The UI of the website could be made attractive
4. Icons and Pictures can be used whenever required.
5. The quiz can be made in a pagination way or improved in another way.

Appendix A:

Participant Attendance:

Testing date and time	Location	Participant	Attendance	Course Number	Email
4/9/2023 12:00 PM	Lib Room: 236	Mark McArdle	Yes	CS2321	mmmcardl@mtu.edu
4/11/2023 11:00 AM	Lib Room: 236	Logan Gehring	Yes	CS2321	lrgehrin@mtu.edu
4/11/2023 12:00 PM	Lib Room: 236	Srina Vadhadiya	Yes	CS5831	svadhadi@mtu.edu
4/11/2023 1:00 PM	Lib Room: 236	Matthew Blevins	Yes	CS2321	mblevins@mtu.edu
4/13/2023 11:00 AM	Lib Room: 235	Trevor Freudenstein	Yes	CS2321	tmfreude@mtu.edu
4/13/2023 12:00 PM	Lib Room: 235	MPS Sandhu	Yes	CS5831	msandhu@mtu.edu
4/13/2023 1:00 PM	Lib Room: 235	Seamus Barry	Yes	CS2311	sjbarry@mtu.edu
4/15/2023 4:00 PM	Lib Room: 235	Ryan Downs	Yes	CS2321	rcdowns@mtu.edu

Appendix: B

Bug Report

Bug/Improvement Number	Bug/Improvement Name	Priority	Description
1	Map not loading without location	High	Users are unable to view the map unless they share their location. This should be fixed to allow users to access the map without location sharing.
2	Inconsistent map navigation	High	Users found the map to be difficult to navigate. A legend and a search functionality should be added to make it easier for users to find green spaces.
3	Location not allowed	High	Users are unable to access the map if they don't allow location access. This should be fixed to allow users to access the map regardless of location sharing.
4	Pictures not aligned	Medium	Pictures on the website are not aligned properly. They should be aligned to make the website more visually appealing.
5	Login page not user-friendly	Medium	The login page can be improved to make it more user-friendly.
6	Quiz stats not displayed	Medium	Stats should be displayed after the quiz to show the user how they performed.

7	Validation not implemented	Medium	Validation should be implemented to ensure users provide the correct information.
8	Content not properly sized	Low	Content can be placed properly sized to make it more visually appealing.
9	Quiz with too many questions	Low	The quiz should be reduced to fewer questions to improve user engagement.
10	Website responsiveness	Low	The website should be made responsive to improve user experience on different devices.
11	Active state on navigation	Low	An active state on the navigation would help users know where they are on the website.
12	Place markers on the map	Low	Place markers can be added to make it easier for users to find green spaces on the map.
13	Quiz content options	Low	The quiz content options should be highlighted in a different color to improve user experience.

Appendix – C

Testing Challenges:
No testing challenges were found during the usability test.

Challenge Number	Challenge Name	Challenge Description