SENG 301

Deliverable 4: Prototype and Evaluations

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**Introduction**

The purpose of this document is to complete an evaluation of the prototype designed in deliverable 3 with potential users. It will discuss evaluation methods, feedback from target users, and an analysis of the feedback.

**Summary of feedback**

In D3, it was suggested that confirmation windows and error messages be included to inform the user of the state of the system. That said, changes were made so that the user is notified once a task is completed and also is provided with descriptive error messages to review input whenever it is incorrectly provided. Additionally, ‘Home’ and ‘Back’ buttons were added to address feedback for simpler navigation around the application and a ‘Submit’ button following any window that required user input. This was important because it allowed individuals to review their choices before formally submitting it to the system for computation, saving them time from having to resubmit if there was an error.

**Evaluation of Prototype**

**Identification of Target Users**

Our target audience is any user that wishes to navigate the campus with ease, find out information about parking, available classrooms, and services. We assume that the majority of the users will be University of Calgary students since our features were designed with students (first years, exchange, new transfers, etc.) in mind. As a result, we chose two students and one non-student to conduct our prototype with. We approached random students on campus that were willing to participate in the interview. For the individual that was not a student, we selected them the same way but by asking about their academic status and if they frequented the university often.

**Evaluation Methods**

We created a prototype that looks similar to a high fidelity prototype, but it was treated as a low fidelity prototype throughout our evaluation. The evaluation was performed using Wizard of Oz. Since our target audience is from such a diverse population (all visitors of the university), we expect that users would have varying skills in regards to technological proficiency. That said, Wizard of Oz is a simple evaluation method that allows us to guide users with next to no familiarity with technology through our application. We conducted a semi-structured interview with four different potential users after completing Wizard of Oz. We allowed the user to talk freely about the application but also guided the discussion with the interview questions below. We used a combination of open and closed ended questions. Open ended questions allow the interviewee for greater throughput. The closed ended questions and the usage of a rating scale allowed us to gain valuable information as well as quantitative information. We asked potential users whether they were students at the university to ensure the sample of interviewees was reflective of our target audience. The questions were chosen carefully and guided by the lecture on usability guidelines. We attempted to ask questions that would help us gauge our application's usability. Notes were taken during the interview process to record the interviewee's answers.

**Interview Questions**

1. Are you a student at UofC?
2. On a scale of 1 to 10, how would you describe your level of expertise using web based applications?

1 2 3 4 5 6 7 8 9 10

novice proficient expert

1. On a scale of 1 to 10, how easy is it to learn how to use the application?

1 2 3 4 5 6 7 8 9 10

very difficult very easy

1. Were you able to accomplish your goals with ease?
2. How would you describe the flow of the application? Did the categories (on the main menu) reflect your expectations on their purpose?
3. How can we improve the appearance of the application? Any comments on how the information is presented? Labels? Graphics? Buttons? Layout?
4. How can we improve the error and confirmation messages?
5. How easy is it to navigate the application?

1 2 3 4 5 6 7 8 9 10

very difficult very easy

1. What are your thoughts about the application?

**Interviews**

**Interview #1 (Completed by Elizabeth)**

1. **Are you a student at UofC?**

No

**2. On a scale of 1 to 10, how would you describe your level of expertise using web based applications?**

1 2 3 4 5 6 7 8 9 10

novice proficient expert

**3. On a scale of 1 to 10, how easy is it to learn how to use the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

**4. Were you able to accomplish your goals with ease?**

Yes

**5. How would you describe the flow of the application? Did the categories (on the main menu) reflect your expectations on their purpose?**

Some of the features were worded vaguely. For example, I wasn't sure what I would find under under transportation. More descriptive menu features would be helpful.

**6. How can we improve the appearance of the application? Any comments on how the information is presented? Labels? Graphics? Buttons? Layout?**

The information is presented clearly and the layout is uncluttered. The use of pictures and different colours would make the application look better.

**7. How can we improve the error and confirmation messages?**

Do not use red to indicate an error because it's too alarming.

**8. How easy is it to navigate the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

**Additional comments:**

The user also commented on additional features that could be implemented: taxi option under transportation, ways to contact campus security under emergency, add telephone locations, meeting spots so people can get picked up.

**Interview #2 (Completed by Alex)**

1. **Are you a student at UofC?**

Yes, a computer science major.

1. **How would you describe your level of expertise using web based applications?**

Average level expertise for a 21 years old.

1. **What are your thoughts about the application?**

It’s well organized, simple, functional. Bug reports looks the same as other buttons, it makes me confused because it feels like it’s similar to other things but it’s different.

1. **How did it feel to use the application?**

I really liked it especially if it was on my phone.

1. **How easy is it to learn how to use the application?**

Really easy, can figure everything out in 5 minutes.

1. **Were you able to accomplish your goals with ease?**

Yes, if all the information is there and accurate.

1. **How would you describe the flow of the application?**

Really consistent so it was easy to follow.

1. **How can we improve the application?**

Make the bug report button look different than other buttons! I like everything else, I feel like there is nothing much to change.

**Interview #3 (Completed by Mark)**

1. **Are you a student at UofC?**

Yes

1. **On a scale of 1 to 10, how would you describe your level of expertise using web based applications?**

1 2 3 4 5 6 7 8 9 10

novice proficient expert

1. **On a scale of 1 to 10, how easy is it to learn how to use the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

1. **Were you able to accomplish your goals with ease?**

Yes

1. **How would you describe the flow of the application? Did the categories (on the main menu) reflect your expectations on their purpose?**

The application was very easy to understand and the categories each function was split up in made it pretty clear as to what they did.

1. **How can we improve the appearance of the application? Any comments on how the information is presented? Labels? Graphics? Buttons? Layout?**

Maybe add more color and pictures -the application looks a little plain. Color coding the different categories may also help with navigating. The home button looks a little out of place compared to the rest of the design.

1. **How can we improve the error and confirmation messages?**

No suggestions for improvements because the error and confirmation messages are

descriptive and clear to me.

1. **How easy is it to navigate the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

**Additional comments:**

The application is fairly easy to use. It would be very convenient to have if unfamiliar with the campus.

**Interview #4 (Completed by Alex)**

1. **Are you a student at UofC?**

Yes

1. **On a scale of 1 to 10, how would you describe your level of expertise using web based applications?**

1 2 3 4 5 6 7 8 9 10

novice proficient expert

1. **On a scale of 1 to 10, how easy is it to learn how to use the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

1. **Were you able to accomplish your goals with ease?**

Yes

1. **How would you describe the flow of the application? Did the categories (on the main menu) reflect your expectations on their purpose?**

I think the order in which titles are placed can be ordered more appropriately, based on user’s need. They definitely reflect my expectations.

1. **How can we improve the appearance of the application? Any comments on how the information is presented? Labels? Graphics? Buttons? Layout?**

The design is very plain, simple and boring. Information is presented clearly. Labels are easy to understand and reflect that information that is given in them. Layout is clear and easy to use.

1. **How can we improve the error and confirmation messages?**

I think they are good as they are. No need for improvement.

1. **How easy is it to navigate the application?**

1 2 3 4 5 6 7 8 9 10

very difficult very easy

1. **What are your thoughts about the application?**

Easy to use, functional, easy to navigate, very bare bones.

**Results of Evaluation**

**Summary of feedback**

Overall, users found our application easy to navigate and that it was easy to accomplish their goals. Users found it very easy to learn how to use our application. One user stated that it took him/her 5 minutes to "figure out". Another user commented that the application was "simple to understand" and that it "would be convenient to have".

**User interface flow and appearance**

One user found that the title of the categories featured in the main menu were vague at times, while others found that it made sense. One user stated that the ordering of the features named in the main menu can be reordered so that they reflect features that users are likely to use more frequently. Users found the prototype easy to use, simple, and plain. The layout is easy to navigate and the information is presented clearly. One user commented that the prototype design was "boring". Users seemed to find that the design was too plain and simple and suggested the usage of colours, buttons, and graphics to make it appear more interesting. Another user commented that the error message could be changed into a way that is less alarming.

**Suggestions**

One user provided suggestions for additional features that can be added to the program, such as a taxi option under transportation, adding telephone locations, etc. (see interview #1, additional comments). Some users suggested the usage of encoding techniques such as graphics, colours, and buttons.

**Analysis of Results**

Overall, the feedback to our prototype was positive. Our main intention was to evaluate the functionality and logical flow of the application. The sample contained users with proficient to intermediate level of knowledge when using web based applications. We can be confident that our application was easy to use and easy to learn based on the feedback from users of varying levels of knowledge.

Since our main intent was functionality and logical flow, we made minimal changes to the final prototype if the feedback was regarding trivial details, such as colours and pictures. Based on the feedback we have received, we have implemented the following changes to our prototype:

1. Reordered how features are listed based on how often we would expect the user to use that feature (most frequently used feature will be listed first).
2. Changed how users can access "Submit feedback" feature. It has been de-emphasized through the use of a smaller font size, different font colour, and relocated to the bottom of the main menu screen.
3. Renamed main menu feature to be more specific, changed from "Transportation" to "Public Transit". Changed "Bug Report" to "Submit Feedback".
4. Changed the colour of the error message from red to black.

**Prototype**