Setter Final Report

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CPSC 481 Group 3.3
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Executive Summary

Setter is a new mobile application to set, discover and attempt new bouldering problems in rock-climbing gyms. Featuring an easy to use creation tool and community grading, Setter's goal is to provide users with a variety of accurately graded bouldering problems.

Design Problems

The main issue with the current system is that problems set by gyms are often created by their own employees, resulting in a lack of variety and non-standardized grading across gyms. Our app would invite the community to utilize their creativity to create problems and use a democratic system for grading.

End-users and Stakeholders

- Boulderers/Climbers
- Gym owners/Staff
- New Climbers
- Developers

User Research and Findings

For our research, we created a survey and conducted interviews amongst students at the university. Our data indicated the following about the average climber
(at the university):

- Age: 18-24
- Experience: Varies from <1 year to 5+ years
- Skill level: Intermediate
- Haven't used any similar applications
- Commonly requested features:
    - Filtering problems
    - Offline features
    - Community grading
    - Statistical tracking

Design and Justification

The design was largely influenced by our findings in our research. In addition to creating and viewing bouldering problems, some of our key features include offline functionality, filtering problems by location/setter/grade/rating, community grading/rating, profiles and personal statistics.

Heuristic Evaluation and Findings

In our heuristic evaluations, we received a good quantity of useful feedback. The main problems with our design were:

- Help and Documentation:
  - Inexperienced users could find the climbing specific terminology confusing
- Help Users Recognize, Diagnose, and Recover from Errors:
  - Lack of a way to delete comments after posting them
- Visibility of System Status
  - The buttons on the filter screen did not have enough feedback to indicate when selected
  - Some header titles were insufficiently descriptive
- User Control and Freedom
  - Hard to determine the border of the buttons on the filter screen
  - Some buttons were not large enough
  - Could not return to the main page with a click of one button on some screens
- Flexibility and Ease of Use
  - The submenu to access rating, commenting and grading felt unnecessary

Design Changes based on Heuristic Evaluation

- Help and Documentation:
  - A terminology page was added which appears on registration and can also be found in the settings page
- Help Users Recognize, Diagnose, and Recover from Errors:
  - Delete functionality was added
- Visibility of System Status
  - Some header titles were rewritten

Recommendations for Next Iteration:

- Visibility of System Status
  - Better feedback when selecting a filter option
  - Visual cues to show the borders of a button
- Flexibility and Ease of Use
  - Easier/more efficient way to indicate attempt or completion of a problem

Conclusion

We were able to utilize the tools and processes taught in this course in order to formulate and improve our design. Some of the key processes used include the research methods described in the IDEO cards, prototyping and heuristic evaluations, which all led to our final hi-fi prototype.

Introduction

Setter is a new mobile application to set, discover and attempt new bouldering problems across various rock-climbing gyms. Setter allows users to add variety into their bouldering routines and record their creativity on the wall. All routes, known as “problems” by rock climbers, feature user-based community grading and eliminate guessing between various grading scales different gyms may use. The goal of this report is to examine the design process the developers of Setter have followed to develop a High-Fidelity prototype and to understand the reasoning for various design decisions. From using the User and Task centered design processes, Setter’s High-fidelity prototype proves that this application is ready for production for boulderers to use and benefit from.

Design Problem

In rock climbing gyms, the bouldering wall’s problems are configured on variable schedules. Often, the problems on a wall remain unaltered for long periods of time. These problems are graded for difficulty by a gym employee(s) and graded without a standardized approach resulting in various scales amongst different gyms. Or, in the worst case with no grading at all. These issues result in climbers having limited opportunities to have more dynamic climbing sessions, and inaccurate ideas of their skill levels if they frequent different gyms.

Setter aims to solve these problems by providing boulderers an alternative to relying on the rock-climbing gym. Instead, the user can discover and attempt problems set by other users and use a community grading to accurately depict the difficulty of problems

End-user and Stakeholders:

1. Boulderers/Climbers:

   These users are the primary target of the app. We want to encourage the use of the app to create community ranked problem sets. We have split this stakeholder into three subcategories to better define the user group and to help how we weigh the grading and rating voted for each problem. They will choose their skill level when signing up for the app.

   a. Beginners - less than 1 year of experience. We will be weighing their votes and rankings a lower amount for difficult problems and more for easier problems, as these are new people to the sport and do not yet have the knowledge or ability to fully understand the rating system used by boulderers.
   b. Intermediates – Between 1 - 3 years of experience. We will not do any weighing to their votes and rankings.
   c. Advanced – More than 3 years of experience. Their votes will be weighed more for difficult problems and weighing their votes normally for easier problems

2. Gym Owners/Staff:

   Focusing on pushing the app into the hands of owners and staff will allow us to get the app out to more people. This stakeholder group will hopefully get their gym members to join the application when using the climbing wall. We will be focusing on them using the app and promoting it at their gyms.

3. New Climbers:

   Online advertisements for the app describing how easy bouldering can be using the app can get new people who have been wanting to learn to make the jump and start bouldering. They will then also download and use the app, adding another person to the users.

4. Developers:

   We are the stakeholders who will be building and maintaining the application, some of us are boulderers and will use our first-hand knowledge to create the application while others will be using the research methods discussed below to create the best application possible.

User Research and Findings:

1. Survey Findings:

   We discovered from our survey results that the majority of participants were between the ages of 18 - 24, which represents the majority of university students. Secondly, there was a uniform distribution between the number of years spent rock climbing between the following options: less than 1 year, 1 - 2 years, 3 - 5 years and 5 or more years. Many of our participants were categorized in an “intermediate” level of climbing. Third, most users do not use an application to help set their problems. If they were to use an application, the majority of users would like to see filtering by grade, offline problem viewing, community grading and personal statistics. Those participants who currently use an application cited problems with community grading and the inability to provide feedback or any commentary for the problems.

2. Interview Findings:

   We discovered from our interview results that ease of use was a big priority for many users. Offline features and the ability to view problems without internet connectivity was heavily requested - it was noted that many climbing locations in Calgary provided no internet connection. We also found that most people were not using an app similar to our design. The few users that were using an app were dissatisfied with the service, citing reasons like lack of community grading and filtering options.

Design and Justification

When designing our initial prototype, we came up with features that were essential for its functionality: creating, viewing, and filtering problems and gyms. A storyboard and task descriptions allowed us to understand how we could formulate the mechanisms for each important feature. First, when a user creates a problem, we wanted a simple tool that allowed them to quickly set a route on the wall. To solve this, we decided on a minimal number of buttons: Start, Regular and Finish. Users could quickly mark the start holds, the finishing holds, and the regular holds in-between on a wall. Second, when a user views a problem, we wanted to show a scrollable feed of all the problems available in their gym of choice. This problem would include a large picture of the bouldering wall, its community grade and personal ratings. When expanded, the problem would be large enough for a user to examine the holds and try it for themselves. Third, we wanted users to be able to filter the gym and its problems. Our research confirmed this functionality as many users would like a filtering feature. After different designs, such as a side bar, we decided on a separate filter page. By having the filter on a separate page, we were able cluster filtering options together and create a page that didn't look cluttered.

Based on our findings from user research, we were able to identify several features that our users felt were important. We recognized that offline functionality was a huge selling point. We want to create an option to download problems for users to save and access without internet connectivity. There would be a download button beside problems and a downloads page that would store saved problems. The ability for users to rate other problems was considered a must-have feature. This was also a major takeaway from our user research that many apps lacked. To implement this, we added an "options" button for each problem that would allow the user to perform actions like rate and comment. We decided that a personal statistics page can be implemented in the future. This was not considered an essential feature because it's not a necessity for most users. Our initial product contains a user profile with information about their most recently attempted problem and most recently completed problem. This could be expanded to a more comprehensive statistics page in future updates.

Heuristic Evaluation and Findings:

1. Help and Documentation:
    - Severity Rating - 3
    - The data collected from our heuristic evaluation signified that we had a major usability problem that required attention. Our testers had little to no experience with rock climbing and the terminology associated with it. This made using the app quite challenging to new climbers because climbing specific terminology is used throughout.
    - Testers also found a couple of the interactions to be difficult without prior knowledge of the intended sequence. Testers felt that the design would benefit

greatly from a short tutorial instructing users on how to accomplish tasks in an efficient manner.

2. Help Users Recognize, Diagnose, and Recover from Errors:

    - Severity Rating - 2
    - The heuristic evaluation illuminated the comment system to have a minor usability problem. The design gave users the option to post comments on problems that they wished to discuss but failed to give users the freedom to remove these comments.

3. Visibility of System Status:

    - Severity Rating - 1
    - The testers felt that the feedback supplied on the filter screen was insufficient. The filter screen requires users to press on the text that they wish to select for filtering. Once pressed, the text is bolded and underlined to signify successful selection. Testers believe that the design could use a more noticeable form of feedback to improve the user experience.
    - It was also determined that the header titles of some pages were insufficiently descriptive. Testers were unsure of exactly what the page they were looking at was supposed to be showing them.

4. User Control and Freedom:

    - Severity Rating - 2
    - As described above, the filter screen requires users to press on text to add filtering choices. Testers found it difficult to determine where the border of one option stopped and another began. This minor usability problem may be solved by adding borders around each option to prevent user confusion and possible frustration.
    - Testers reported that some of the buttons used in the interface could benefit from being made larger. Testers flagged the “Submit” and “Cancel” buttons in the “Create a Problem” task as being too small. Testers also flagged the buttons on the filter screen as well as the “Sent” and “Attempted” tasks, again as being too small.
    - Users should be able to navigate to a fixed point, in any design, with the click of one button. Our design failed to do this as no dedicated button was supplied to return users to the main “View Problems” screen.

5. Flexibility and Efficiency of Use:

    - Severity Rating - 2

- With a focus on a minimalist design, a decision was made to include the “Sent”, “Attempted”, and “Rating” functionality through a submenu of each problem. This forces the user to first select the submenu and then actually select what they intended to. This added step was mentioned by testers as perhaps being unnecessary.

Design Changes Based on Heuristic Evaluation:

1. Help and Documentation:
    a. This is an area that was completely overlooked as everyone working on the project had knowledge of the rock-climbing terminology that was being used and how to complete certain tasks like “Create a Problem”. The Heuristic Evaluation illuminated that we had not fully included one of our stakeholders, new climbers, into our design. To remedy this oversight, a terminology page was added to the design, and appears when a new user registers and can also be found in the settings menu. A future consideration would be to supply a short tutorial on basic app functionality for new users as well.

2. Help Users Recognize, Diagnose, and Recover from Errors:
    a. The Heuristic Evaluation provided us with ideas on how to give users more freedom in their actions and how to recover from certain circumstances. It was noted in the evaluation that our design did not allow for users to delete comments that they had made. This functionality to delete comments was added as well as the option for a user to remove problems that they had created.

3. Visibility of System Status:
    a. Our testers provided negative feedback on the visibility of system status due to vague page headers. They mentioned that they were unsure of what certain pages were supposed to be showing them due to the page header lacking depth. More descriptive header titles have now been implemented in the design.

Recommendations for Next Iteration

1. Visibility of System Status:
    a. On the filter screen there are selection graphics that could use some clarity to benefit the user experience. Currently when an option is selected it is simply bolded and underlined to signify successful selection. Our testers found this amount of feedback to be insufficient. In the next iteration of this design, some thought should be put into the best form of feedback that signifies successful option selections. The current thought would include highlighting the background around the option.

b. Currently users are made to simply press on the text of the option with which they would like to select on the filter screen. Our testers provided feedback conveying that they would have preferred each option to have an outline or another visual cue signifying the button's border. The next iteration should provide this visual clarification to better the user experience.

2. Flexibility and efficiency of use:
    a. Users should be given a more efficient way to submit their completion data. For a user to submit an attempt or a send they must first open the "options" menu at the bottom of the screen and then select what they would like to submit. Some thought should be put towards how to make this interaction more efficient without causing clutter on the screen where are problem is viewed.

Conclusion

With the Human and task centered design, the developers of Setter were able to fluidly move through design iterations. By understanding the problem that "climbers want a way to set and discover new problems, without relying on their climbing gyms", and receiving user feedback through various research methods, a thoughtful approach to the functionalities and the implementation of these functionalities via lo-fidelity to high-fidelity prototypes were possible. Usability tests, provided by 5 participants, allowed us to gain insight on improvements that were needed to make the prototype more user friendly and succinct based off the heuristic evaluations returned. These evaluations highlighted some key areas for improvement: Help and Documentation, Recovery from Errors, and Visibility of System Status. Our final prototype included these improvements to create a more sensible and refined design. After completion of the design process, Setter is now ready to move into the development of our bouldering application.