OOPP 60 HCI Report

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Introduction

With the rise of technology and its complexity, it often becomes a challenge for the average user to navigate and utilize new technological innovations. When UI/UX designers are invested in developing advanced high quality services, human computer interaction is an important subject for the end user experience. Hence for this reason, the design and interface requires an evaluation for practical usage. The objective of our evaluation is to assess the usability, user experience and overall design of our application. We will gain insights on how the user will navigate our app and what we can do to guide them throughout the application. Our responsive prototype is designed using Figma, available [here](#).

Methods

Experts

We recruited six fellow students involved in this course to review our interactive design. Their level of expertise is that of an average user. However, they have received instructions on how an HCI evaluation should work and have had the occasion of doing it first hand during a lecture.

Procedure

We have instructed the experts on what to do by following research papers on how to conduct proper heuristic evaluations, for example "How to conduct a heuristic evaluation. Nielsen Norman Group, 1, 1-8".

The evaluation was carried as follows:
1. We split up the experts with one overseer each that would guide them in case of difficulties.
2. We briefly showed the design and explained how each view is connected.
3. We let the experts navigate by themselves in the prototype UI.
4. We collected their oral feedback during their real time experience.
5. We asked them to answer a questionnaire to get quantifiable data.

The experts were asked to focus specifically on the following heuristics:
1. Visibility of system status.
2. Match between system and the real world.
3. Consistency of the graphical design.
4. User control and freedom.
5. Error prevention.

6. Recognition rather than recall.
7. Flexibility and efficiency of use.
8. Help users recognize, diagnose and recover from errors.
9. Aesthetics and minimalist design.
10. Help and documentation.

The experts were already familiar with the application specifics, therefore they wouldn't have been reliable in their evaluation of user errors and recoveries, as they already knew what to expect from the controls.

Measures (Data collection)

- We are measuring how intuitive and friendly the user experience is when the player is using the application for the first time. To do so we're recording the solutions to each heuristic and asking the experts on feedback regarding how our application handles the said points.

Results

We received the following feedbacks from the experts:
- [a feedback] (number of experts that expressed it or one similar)
- The game settings should be less prominent in the lobby screen. (1)
  - Suggestion: move them to a sidebar.
- The design becomes clustered when a lot of players have joined a lobby. (1)
  - Suggestion: add a scrollbar.
- The design becomes clustered when a lot of players are participating in a multiplayer game. (2)
  - Suggestion: show an icon with for example "+10" instead of all the user's pictures.
- It is not clear how to join a lobby. (1)
  - Suggestion: there should be a "join" button, clicking on the lobby's name should just toggle the settings description.
- The questions might look better with a picture associated. (1)
  - Suggestion: put a picture on the side of the question's text, it can be from the activities (for estimate and multiple choice questions) or a simple question mark (for questions where an activity picture might give insight in the answer).
- The amount of points awarded for answering a question is not visible while the game is being played. (1)
- The rules of the game are never explained. (1)

- ○ Suggestion: add a view accessible from the main screen that shows the rules and explains the pages.
- The leaderboard shown during the game closes automatically, but it doesn't show a timer. (1)
- The login screen design and the lobby screen design are completely different in style. (3)
- The "new lobby" button was confused for a "search" button. (1)
  - ○ Suggestion: have a search function in the lobby page and move the "new lobby" to a different place.

The priority matrix of our usability problems:
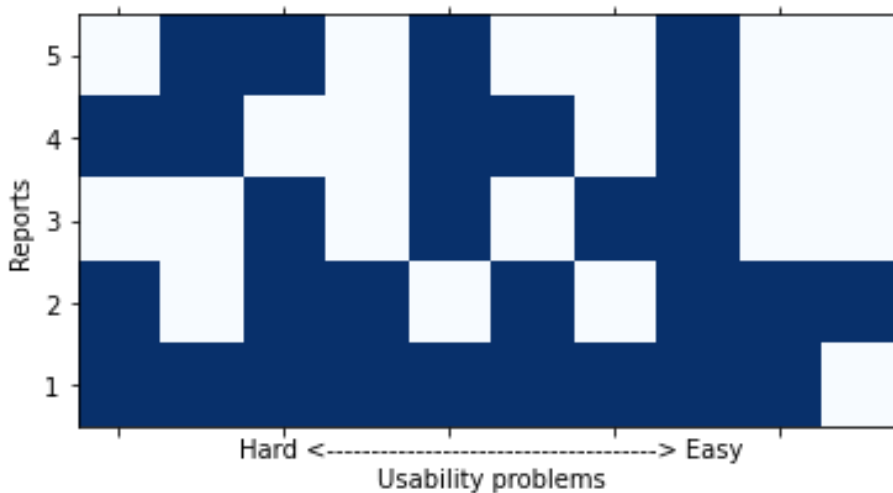
Conclusions & Improvements

The feedback clearly shows that some parts of the interface are inconsistent. The clarity of the lobby scenes needs to be improved, as the font size isn't big enough, and some buttons aren't visible enough. Although it's difficult to implement transitions in Figma, we've also got indications that some of the elements (i.e. active power ups, leaderboard leaders) should be given special effects and transitions to increase visibility. In order to fix these problems we will:

- standardize the color scheme, and change the yellow color to be a bit darker
- by default hide additional, more specific information (like game settings), and allow users to access it when needed by unfolding a menu
- make sure all rectangular forms have uniform border radius
- utilize 3rd party JavaFX libraries that add special effects

Combined, these improvements should make the application more consistent and legible. Users will be able to access data and functionalities seamlessly, and be able to focus on the gameplay rather than the UI. It will also make our bonus features easily discoverable. We

will also have implemented thorough warning systems for invalid/unsupported operations, e.g. when API endpoints return 4xx/5xx codes. This is reinforced by improvements in:

- visibility of the systems status, as more data is apparent and legible without cluttering the interface
- consistency in the graphical design, as used controls and the chosen color theme will be more coherent
- user control and freedom, with players easily utilizing more advanced features
- diagnosing and recovering from network errors, having more specific, human-readable feedback on the source of the problem

Some charts

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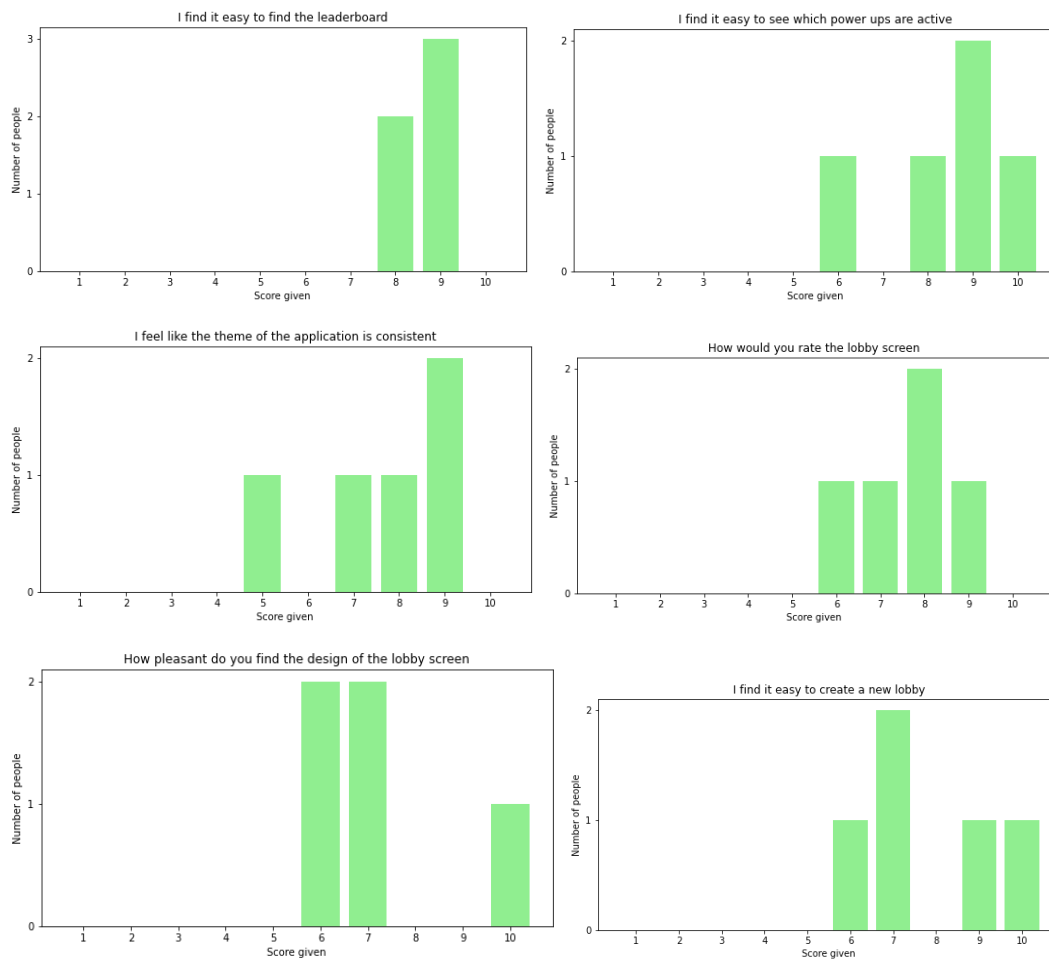
- Going back button

- The lobby screen is not that intuitive. A lot of text and joining lobbies is confusing, maybe add a join button. Single player mode impelemented in the design making a singplayer lobby is not intuitive, could make a separate button for singleplayer games.

More colours.

- The in lobby screen needs more colours. A lot of text and important buttons should be bigger. The parameters for settings could be hidden and only shown when someone wants to change the lobby settings.

- The powerups are not explained, could do some mouseover text or a button to show how the powerups work.

- In game screen : could be a better design choice to round edges not consistent, not the whole page filled?

- How many points player has and how many he gains. Correct answer 3 points, Incorrect answe 1 point, not intuitive!

- Which power ups are not available or not

- Show erorr messages ?

- Figure out way to show player's standing on the leaderboard, not just top 3 / 5

- Screen for configuring game options need to be added

- Have more than 5 seconds showing leaderboard

- No big leaderboard.