CMPT 363: Project Part 3 Report

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Changes From Paper Prototype

We have made a couple of changes to our implemented prototypes from our paper prototypes. One of the major changes we made was the reintegration of the dashboard for navigation. Originally, we decided to allocate as much space for content by removing the dashboard and replacing it with the sidebar, however we reintegrated it because we wanted to keep track of what section the user is in via a highlight around the icon in the dashboard. Another change we made was the content we integrated to the sidebar, which now exists alongside the dashboard. Originally, the sidebar contained the section icons that would be used for navigation, but due to the reintegration of the dashboard, the sidebar contains the metadata of the user and settings options. Lastly, we decided on a dynamic background that resembles the sky. Originally, we were dedicated to a solid color for the background, but after further consideration and further testing of ‘Calm’, our state of the art application, we decided to emulate a night sky with dark undertones, which we believe will fit our app in an aesthetic point of view.

Horizontal Prototype

For our horizontal prototype, we designed it in a way where we can maximize usability and ease of use with respect to our expected user base's needs, incorporate as many of the 10 design heuristics as possible, and implement the C.R.A.P model for modern user interface design. In our horizontal prototype, we thoroughly implemented the routing to different sections, but with a boilerplate content.

Major Additions

One major component we added to our prototype was different ways to route. To route, the user has the choice of clicking buttons on the dashboard to navigate to different sections, or can swipe left and right to navigate to adjacent pages. We agreed on this idea because it promotes the 'Flexibility and efficiency of use' design heuristic, allowing the user to quickly navigate through pages. By creating a flexible way to navigate, our user base will not need to spend a lot of time moving around our app and can access desired features quickly.

Another major change we added was to have a landing page once the user accesses the 'Fall Asleep' page. In this page, the interface displays a message on what this section is and how to interact with it, along with a button to start the activity. We believed that this was a proper approach to our 'Fall Asleep' section and meditation feature because the meditation feature starts abruptly without the user understanding how to interact with it. By creating a medium between the user and the feature and documenting what the feature is and how to use it, the user will have the chance to be ready, spearheading the 'Help and Documentation' heuristic. This change will help our user base in understanding our meditation feature regardless of expertise.

C.R.A.P Integration

In terms of the interface design and layout, we utilized C.R.A.P to create an intuitive and visually appealing interface. We leveraged contrast through the size of the content that is most relevant, in this case, larger deems more important. We also used contrast to signify which section the user is at the time through highlighting the section icons in the dashboard, which can also fall under the 'Consistency And Standards' heuristic. To integrate repetition, we made sure that our layout is similar for every section, that way the user is not thrown off at the display once they navigate to a different section. Alignment was used to create consistent groupings of components within a section. We used a horizontal alignment to denote recently played audios, and vertical alignment to denote the total audio library, thus creating a separation. Lastly, proximity was integrated to create collections of content, for example, the homepage is split into three proximities; a welcome message, a component that outlines the user's sleep goals, and a section to summarize the user's sleep statistics.

Improvements

Although we are satisfied with our horizontal prototype, we are open to a couple of changes. Firstly, we struggled with keeping the page sizes short, which was one of our tasks we outlined. We kept tall page sizes to avoid the overuse of routing mechanics, which we believe will confuse the user base further, thus we chose to retire the short pages requirement. We also retired the requirement of having ambient music play globally throughout the prototype due to technical and design reasons. Technically, global audio is immensely difficult to implement in *Figma* and we also found the ambient sound to be distracting during our trial uses, making the ambient sound requirement good on paper but poor in execution.

Vertical Prototype

For our vertical prototype, we decided to substantially implement features within three sections; the statistics page, the ‘fall asleep’ page, and the discovery page. We decided to implement these sections to a larger extent because we believe that these are the sections that the user will interact with the most, along with the fact these sections define our product.

Graph

For our statistics feature, we implemented the graph update clause based on user input. We decided to showcase this feature in our implementation because it is the first thing the user sees when they route to Statistics, along with the fact that there are no data dependencies for this feature. The graph is implemented to handle user input in a text input box that takes numerical characters. Once the user finishes typing they can press the send icon to confirm their input, which will update the graph with the new data immediately. In the event that a number is not inputted, an error message will be output in the input box to notify the user of improper input. Errors are prevented by adding an example of an appropriate input

Meditation Module

For our fall asleep section, we thoroughly implemented a meditation module that the user can indirectly interact with to participate in breathing exercises and affirmation recognition that aim to help with sleep. This is the main driver for the exercise section, thus our reason to implement this. For the breathing section, a circle spins along with a clock counting down from ten seconds, which acts as the timer to either conduct an inhale or exhale. The affirmations section is similar, where the user is prompted to repeat affirming messages outputted by our module, however, there is no clock. Taking note from the horizontal prototype, the exercise will only be accessible through a medium page and when the user clicks the button to start.

Search Query

For our discovery section, we implemented a query system that allows users to search for audios based on audio or author queries. This was a major feature for a major section, thus we implemented it. The way the search query is implemented is that it takes a user text input and queries audios based on the search parameter. We designed the search to query audios based on the audio title, author’s first name, and author’s last name, which we believe will provide robustness to user input. In the event that the user inputs a search that results in zero queries, no audio will be returned and a message stating that the user’s input has no results, which we believe to be appropriate error handling. To aid the user in searching, we added an example in the placeholder text in the search box of what a potential search can be.

Strengths And Weaknesses

Our implementation is strong on error handling and prevention, as we considered cases that could be considered a misinput, and handled it well through interrupted actions and placeholder text that acts as examples of potential inputs. However, we could have improved some details. Firstly, we could have utilized the animating circle better to communicate how long a user may inhale or exhale by completing the circle rather than rotating it. We also were not able to implement the stretching component reliably as it goes against the consistent circle design, which is why we replaced this requirement with affirmations.

Cognitive Walkthrough

Persona 1: Rebecca, 23, wants to improve her sleep schedule as she returns to school

- No previous experience with a sleeping aid app but is fairly tech-savvy with frequent usage of social media apps such as “Instagram” and “TikTok”.
- She wants to use the app on her phone before falling asleep at home

Persona 2: Mary, 96, has severe dementia and trouble sleeping

- No previous experience with a sleep aid app and is not tech savvy whatsoever, still uses a rotary phone
- Hates technology; wants to spend as little time with the application at a time

Tasks

Our list of tasks are tailored to mock a real event of a user using the app to conduct their bedtime routine. Tasks would include updating their statistics, practicing meditation, and setting a bedtime story for bed.

Task 1: Launch App and input New Data to Statistics Page

Task 2: Recite Affirmations

Task 3: Listen to ‘Bedtime With Frances’ and an audio by Beatrix Potter before bed

For more details on each task and the results, please refer to the appendix.

Problems/suggestions during the walkthrough

- The user did not notice the fact that navigation was conducted via swiping the screen left and right, routing to adjacent pages, due to the fact that the user primarily interacted with the dashboard.
    - To improve this issue, we may add popup pointers that communicate with the user on the different ways the user may navigate throughout the app.
- Although the content is in line and appropriate with every section, we noticed some confusion on determining what each section is due to the absence of a title similar to the label for each icon in the dashboard
    - To improve this issue, we may display a title that is similar to the label for each section in the dashboard
- The affirmations page does not have a timer readily available, so when given the task to recite affirmations for 20 seconds, the user is forced to either use a third party timer or simply guess how long has passed.
    - To remedy this issue, a timer can be placed in the center of the circle on the meditation page giving users the option if they want to do a timed session of affirmation, if no time is inputted, it acts regularly as it does currently.

Summary

In the conducted Cognitive Walkthrough, two distinct user personas were considered: Rebecca, a tech-savvy 23-year-old seeking to enhance her sleep schedule, and Mary, a 96-year-old with severe dementia and a disdain for technology. The tasks assigned to these personas included launching the app, inputting new data, reciting affirmations, and listening to specific bedtime audio content.

Several issues were identified during the walkthrough. One of the issues identified was the lack of awareness about left and right swiping for navigation. To address this, suggested improvements involve incorporating popup pointers to guide users on various navigation methods.

Another issue includes the difficulty in understanding the purpose of different app sections, attributed to the absence of titles corresponding to dashboard icons. A proposed solution is to display section titles mirroring the labels on the dashboard, enhancing user comprehension.

Furthermore, a lack of a readily available timer on the affirmations page presented an obstacle for users attempting timed sessions. To resolve this, the suggestion is to integrate a timer in the center of the meditation page, providing users the option to set a specific duration for affirmations or proceed with the default functionality.

In summary, these identified issues underscore the importance of refining user interface elements, incorporating guidance features, and enhancing accessibility to ensure a seamless and user-friendly experience for individuals with varying technological proficiency and preferences. Refer to the appendix for more detailed insights on each task and corresponding results.

Appendix

Task 1: Launch App and input New Data to Statistics Page

Task	Attempt to achieve a result?	Do users notice the correct action?	Will user choose the correct action?	Will the user view progress?
Login and launch the application	The user understood the task and attempted to launch the application	The user noticed the correct action, as there was a large button saying ‘Login’	The user hesitated whether to login directly or register first, so there is a conflict there.	The user saw progress as the user was able to route to the welcome page of the application
Navigate to Statistics	The user understood the task and attempted to navigate using the dashboard	The user noticed the ‘Statistics’ icon in the dashboard, but did not notice that you can also swipe to navigate	Since the ‘Statistics’ route is labeled, the user did not hesitate in which action to take	Although it is intuitive that the user routed to the statistics, there was no clear indication of what the page was due to a lack of a title
Input hours slept last night (in this case, input 8)	The user understood the action and attempted to input numerical hours with no error attempts	The user noticed the correct action due to a reasonably large input box along with a the input function, along with an example input	The user chose the correct option fairly easily. However, there was struggle in finding a way to input data, as there is no on screen keyboard	The user saw progress because the input box updated with the user’s input
Confirm the input to update the graph	The user attempted to click the input button on the side	The user noticed the correct option due to the fact that the input button was right next to the input box, making it easy to find.	The user chose the correct option as there was no hesitation on what action to do; the user clicked the input button immediately	The user was able to view progress as the graph was updated in real time.

Task 2: Recite Affirmations

Task	Attempt to achieve a result?	Do users notice the correct action?	Will user choose the correct action?	Will the user view progress?
Navigate to ‘Fall Asleep’	The user understood the task and attempted to navigate using the taskbar	The user noticed the ‘Fall’ Asleep’ icon in the dashboard, but did not notice that you can also swipe to navigate	Since the ‘Statistics’ route is labeled along with a similar icon, the user did not hesitate in doing the right action	The page displays ’welcome to meditation’, but it doesn’t really align with the concept of ‘Fall Asleep’
Agree to meditation	The user understood and attempted to agree	The user noticed the button labeled ‘Get Started’ which is highlighted in a unique color	Since ‘Get Started’ is the only option for the user apart from going to another page, the action was intuitive for the user to take	After clicking on the button the user is immediately routed to the meditation page, indicating successful routing
Route to affirmations tab	The user understood and attempted to route to the affirmations tab	The user noticed two available pages accessible through buttons labeled ‘Breathing’ and ‘Affirmations’	The user routed to the affirmations tab easily after reading both buttons	The user saw progress as the header changed, an affirmation was given, and the background stars moved
Recite affirmations for 20 seconds	The user understood and attempted to recite affirmations for 20 seconds	The user notices the two new lines of text available, ‘Repeat After Me’ and changing affirmations	The user did not hesitate as they started reciting the affirmations given to them on the screen	The user saw and recited several affirmations, however no timer was given through the application to count the 20 seconds so the user was confused on how much time had passed and had to guess

Task 3: Listen to ‘Bedtime With Frances’ and an audio by Beatrix Potter before bed

Task	Attempt to achieve a result?	Do users notice the correct action?	Will user choose the correct action?	Will the user view progress?
Route to ‘Discover’	The user understood and attempted to route to ‘Discover’	The user noticed the correct action as there was ‘Discover’ button on the dashboard	The user did not hesitate in choosing the correct action as ‘Discover’ was labeled in the dashboard	The user saw progress as the user was able route to ‘Discover’ from ‘Fall Asleep’
Play ‘Bedtime For Frances’	The user understood the action and attempted to find ‘Bedtime For Frances’	The user noticed the correct action in finding as it is first option given to the user	The user hesitated in using either the search bar found in ‘Discover’ or selecting it in the front page.	The user saw progress as it changed from the ‘Discover’ page to the ‘Play Bedtime For Frances’ page.
Return back to the previous page	The user understood the action and attempted to return to the previous page	The user noticed the correct action in returning to the previous page.	The user hesitated in either using the back button on the top left or the ‘Discover’ button on the dashboard	The user saw progress as they were able to change from the ‘Play Bedtime For Frances’ page to their previous page.
Play audio by Beatrix Potter	The user understood the action and attempted to find and play the audio Beatrix Potter created	The user notice the correct action as they used the search found in ‘Discover’ to find	The user easily choose the correct action as searching for the the creator via search bar was intuitive	The user saw progress as they were able to change from their previous pages to playing the audio ‘The Tale of Peter Rabbit’ by Beatrix Potter.