

A4 Requirements and UX Strategy

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CSC 318: The Design of Interactive Computational Media

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1. Design Requirements

Problem:

The specific problem we are going to address is the lack of good sleeping habits developed by generation Z as a result of prolonged social media use. Our group's research has shown that, on average, generation Z is getting less than the ideal 8 hours of sleep. It has also shown that they recognize that they are wasting time on social media apps, and that if they cut their use down, they would expect to see better sleep patterns. The main problem is that: they know their extended social media use is bad for their sleep, but they waste time on social media anyways.

Design principles:

We will be employing design principles of gamification and personalization.

We believe gamification will be important to inspire empathy in our users. For example, an avatar representing the user's sleep habits can be integrated in the app, and the avatar's mood will depend on the quality of the user's sleep habits. If the user sees that their avatar is sad because of recent poor sleep habits, the user will empathize and become more motivated to improve their sleep habits.

Personalization will be important for an enriched user experience that is custom-tailored to the users needs. This will help make the app feel more important and more memorable to the user. This can be done via daily/weekly sleep pattern reports, asking the user for their current sleep patterns and goals in a survey, enforcing the shut-down of social media based on user input, etc.

Our group's research has shown that other sleep tracking apps exist, so we believe these design principles will help set our app apart from the others.

Environmental requirements:

The environmental context in which our app must work is within a user's home, where it can be assumed that the user is surrounded by distractions, as well as blue light from their electronic devices. It can be inferred from our group's research that generation Z is constantly surrounded by sources of blue light from electronic devices, so making sure that our app can be effective in their home before sleeping is very important.

Functional requirements:

Our system needs to be able to track each user's sleep schedule and duration everyday. It has to store the data in a database in order to save its history for analyzing. Since there will be a virtual avatar with the emotions and expressions based on the user's data, the system needs to be able to identify if the user is sleeping well. For instance, if the user does not meet their personal sleep goal, the avatar should be able to detect this and will look more tired.

Technical requirements:

Our platform will allow users to access the features that keep track of sleeping patterns on their tablet, phone, or watch. The platform will also be available on Android and iOS operating systems making them compatible to all who have access to electronic devices. Throughout the

process, our team will be conscious about the user in many ways including the interface design and information shared inside.

Usability requirements:

The system will mainly be targeted to teenagers, but its functionality will cover everyone of all ages. The design will be attractive with bright colors and an aesthetic home page as teenagers these days are attracted to apps that are aesthetic. We will ensure that the aesthetic does not hinder the main purpose of the system. Also, there will be a virtual avatar that will encourage users to have a better and regulated sleep. The virtual avatar's health and expressions will be based on the user's sleep schedule and duration, which they can set to their preference and needs. The pages will be compact, in which the features are able to be accessed easily.

2. Experience Map

Stages	Entice/Enter Onboarding	Enter Scanner Setup	Engage Scanning	Exit Done	Extend Share/Feedback
People	Gen Z/Millennial	Gen Z/Millennial	Gen Z/Millennial	Gen Z/Millennial	Gen Z, Peers, Friends, Family
Context	School, home, work	Home	Home	Home	School, home, work
Doing	Download app Register	Do initial survey Explore app Set sleep goals Set preferences (social media shut down time, sleep report intervals)	Using app Tracking sleep habits and progress Learning more about importance of sleep Shutdown of social media apps at certain time intervals	Review sleep progress Make adjustments depending on info learned about self/sleep	Rating, writing reviews Share app with students, peers, friends, family
Thinking	?What is this ?Is this really necessary ?Is this worth downloading? +"This is fresh!!"	?Is it important ?can i change the settings later -"It's too long" ?what if my preference change in the process	?how accurate is it "Really????!!" +"This is helpful for control and time management"	+"I am willing to try this" ?Do they have a credible source to back it up	+Awesome -not useful ?What next moving forward
Feeling	+curious +intrigued +excited -skeptical -confused -ignorant	+interested +amazed +enjoying -annoyed -it's a hassle	+informative +amused -annoyed -skeptical on its reliability	-Reliability +curious +open-minded	+contented -skeptical on its security
Touchpoints	Reviews, online article, online videos, other users	Tablet, phone, watch (any compatible device)	Tablet, phone, watch (any compatible device)	Tablet, phone, watch (any compatible device)	Family/friends, review section, online forums

Bright spots: Users will not only stick to their sleep goals input by the app, but will also feel the benefits our app promised to them by sticking to a healthy sleep schedule. Users are also acquiring tons of knowledge on the importance of sleep and are using that knowledge as further incentive to continue their healthy sleep habits. Users will come out more knowledgeable and potentially spread their new learnings to people they know, and also recommend them the app.

Issues and breakdowns: Problems arise when users become skeptical regarding the reliability of the information, as well as the security of the app in terms of their personal information. Also, users are not guaranteed to be checking their phone right before and after sleep. Hence, the information and data presented will not be very accurate. To address these problems, we can provide proof of reliability in the information shared and have them agree on our terms and conditions prior to using the app. Another problem may arise when they don't feel that the app is helpful and withdraw from using them. We will address this problem by providing a motivating factor (the avatar that represents the user) to keep the users intrigued and prompted to continue.

3. UX Design Strategy

Problem:

The central problem identified in this exercise is the low awareness of the negative impact of social media on sleep schedules of adolescents and young adults. Reflecting on the research, we identified the algorithm of pictures and reels based platforms such as TikTok, Instagram, and Youtube, as the primary hook to increase usage time. The increased usage times in the evening eventually leads to irregular sleep patterns. Users we surveyed mostly did not correlate the use of social media and the side effects of having an irregular sleep cycle.

Personas:

Indecisive Ingrid is a second year university student who commutes to classes. She watches TikTok in the evening and throughout the night, until roughly 8 hours before her first class the next day, before going to bed. The start time of her classes varies a great deal, and she starts to find herself dozing off during the commute, and having difficulty focusing during class. She would like to be able to identify the source and implications of her fatigue, and help her get back on track with her sleep and academia.

Addicted Archie is a new grad in software development, he knows that his addiction is impacting his productivity and perhaps also health. Archie does not want to give up social media altogether, rather wants to enforce a bare minimum limitation on his use of social media, to maintain productivity and his health.

Scenarios:

Ingrid has difficulty gauging the direct impact of her usage of social media on her actual health. Archie would like to have a personal plan, specific to his current circumstances, how to maximize the joy of social media and preserve his health.

They are both hooked to social media's algorithm, and have difficulty pulling themselves away from the application once they begin.

Outcomes:

Increased awareness of the impact of social media usage on the users' health, also a more limited use of social media, and a more routine sleep schedule.

Differentiators:

The focus of our design is correlating sleep and social media and incorporating natural empathetic instinct towards their virtual avatar to incentivize better sleep. Current solutions have hard bans to limit social media, which causes users to feel like they are being treated as a child. Our solution approaches the users' empathetic side and focuses on awareness of health impacts, and also utilizes the gamified avatar to give dopamine-inducing rewards (like streaks, or levels) to reinforce a good sleeping pattern.

Measures of Success:

As with any other app, daily active users, and download count would be a major indicator. The amount of users who improved their sleep routine after 2 weeks of using the app is also a major indicator. Timely surveys conducted will also gauge user's satisfaction.

4. Plans for Individual Low-Fi Prototypes & Usability Testing

(Ayesha)

KEY USER TASKS:

- ☐ Set bedtime hours, wake up hours, important dates reminders for optimal sleep.
- ☐ Take survey about current sleep pattern and goals, and view information chunks throughout the survey on importance of sleep quality
- ☐ Get timely alerts about getting ready for bed, and time to turn in for the night.
- ☐ Obtain daily and weekly reports on sleep and phone usage statistics
- ☐ Stay aware of total phone usage and sleep times, along with patterns with social media usage throughout the day.
- ☐ Set time limits on certain apps usage (ex: max 30 mins of instagram use throughout the day)
- ☐ Freeze phone usage after a specific time (not be able to use apps after 12 AM)
- ☐ View a virtual gamified persona whose physical state and game stats represent the users own sleep habits and general health.
- ☐ Alerted of a saddened virtual persona after continuous use around set bedtime

Appendix 1

Assignment Attribution

DIGBA, Ruemu (Ray): Experience Map

ALVAREZ, Victor: Design Requirements

WANG, Siyi: UX Design Strategy

WELONG, Stefanus Albert: Design Requirements, Experience Map

HUANG, Sheraveen: Design Requirements, Experience Map

NASIR, Ayesha: Plans for Individual Low-Fi Prototypes & Usability Testing