

Evaluating Sleep Cycle App: A Heuristic Usability Study

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- No. of downloads on Google Play Store: 10M +
- Rating: Google Play Store - 4.4; Apple App Store - 4.7
- Tested App Version: 6.24.37



ABSTRACT


Sleep is a cornerstone of health, playing a crucial role in physical and mental well-being. In the modern era, mobile applications have emerged as valuable tools for individuals striving to enhance their health, particularly their sleep quality. Among these, the Sleep Cycle app has gained significant attention due to its user-friendly interface and intuitive features, making it a popular choice for tracking and improving sleep patterns.

This heuristic evaluation conducted by HITLAB seeks to comprehensively analyze the Sleep Cycle app's design, functionality, and usability. Using established usability principles, the evaluation focuses on key aspects such as interface design, navigation intuitiveness, terminology clarity, and error-handling mechanisms. The analysis not only assesses the app's effectiveness, efficiency, and user satisfaction but also identifies areas of strength and opportunities for enhancement.

The study further delves into how the app supports users in understanding their sleep patterns and promotes healthier sleep cycles. Specific recommendations have been formulated to improve user guidance, address usability challenges, and optimize data organization within the app. These enhancements are suggested to achieve a seamless user experience, encouraging consistent engagement and maximizing the app's utility for better sleep and overall health outcomes.

By addressing these critical factors, this evaluation contributes to the broader discourse on leveraging digital health technologies to enhance well-being. The insights gained from this analysis aim to refine the Sleep Cycle app as a powerful tool for improving sleep quality, ultimately supporting users in achieving better physical and mental health through informed, data-driven practices.

User Persona for the Study

Name	Age	Gender	Work	Location
Christian Stewart	37 years	Male	Freelancer	California, US
	Bio Christian is a freelancer working with variety of clients across various countries. He at times has multiple project on which he is working and that too with dynamic deadlines. With this work, he has to work even in nights. With this he is having some medical issues. He is looking for a system, that will help in understanding his sleep patterns. Also, he is further looking for reports so that further medical help if needed can be taken up.		Goals <ul style="list-style-type: none"> • Improving sleep cycle • Understanding sleep patterns • Sleep improvement methods 	Needs <ul style="list-style-type: none"> • Able track the sleep • Sleep assessing system • Reports generation system assessing the sleep
			Motivations <ul style="list-style-type: none"> • To able to increase productivity at work • Able to have better lifestyle • Able to have sound sleep. 	Frustrations <ul style="list-style-type: none"> • Not able to have sound sleep • Feeling of tired due to lack of sleep
Quote "I am looking for an app that help me to track my sleep and statistically help me understand the patterns of sleep"				

OBJECTIVES

- To evaluate the usability of the Sleep Cycle: Sleep Tracker app using heuristic analysis, with the goal of identifying specific usability challenges that impact the user experience.
- The study aims to provide actionable recommendations to address these challenges and improve the app's overall usability, functionality, and user satisfaction.

STUDY METHODOLOGY

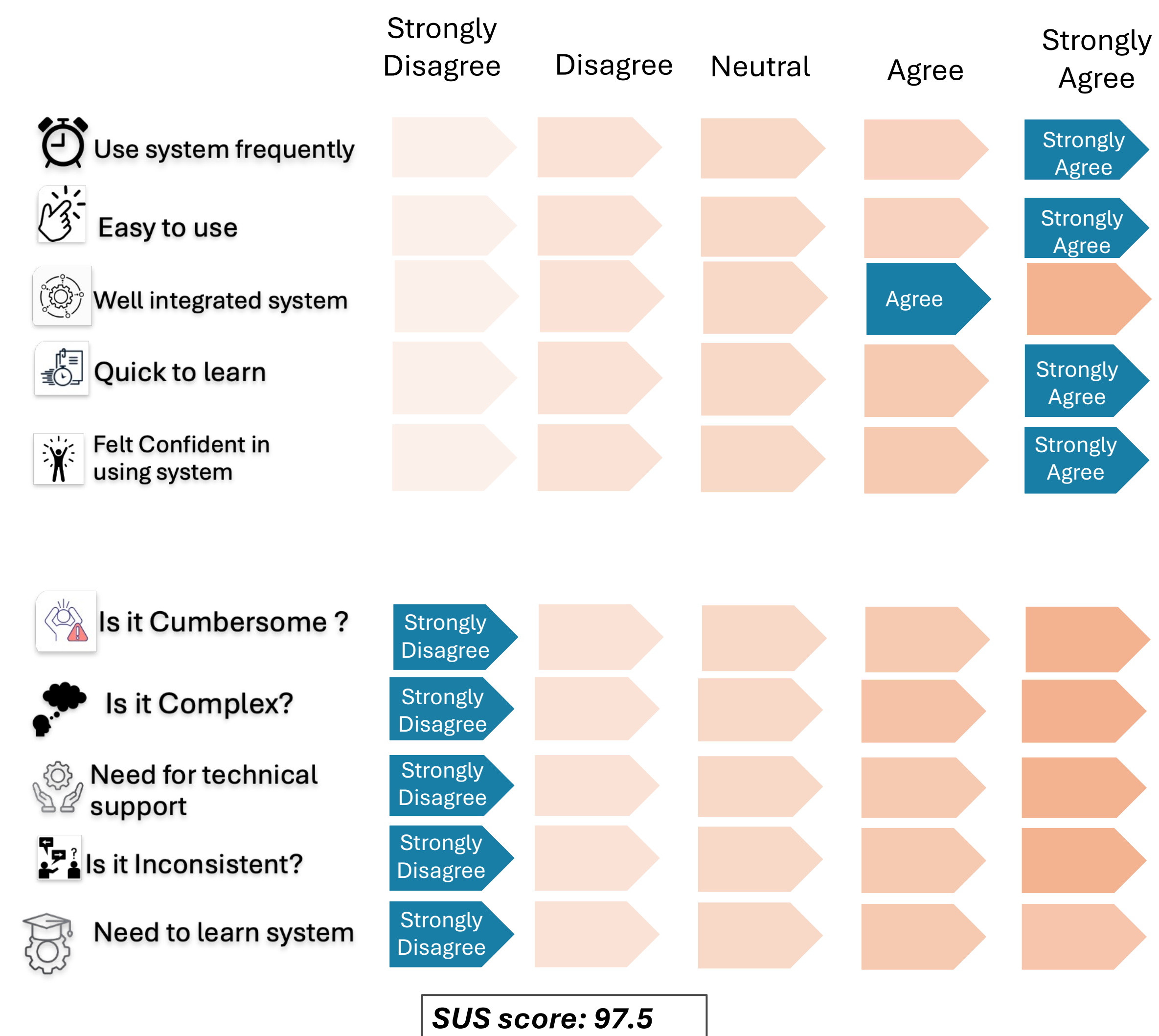
Three type of assessment instruments were used to provide a comprehensive understanding of the Sleep Cycle app's usability, effectiveness, and user satisfaction:

- **Nielsen's Heuristics:** These heuristics encompass criteria such as visibility of system status, match between system and the real world, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design, help users recognize, diagnose, and recover from errors, and help and documentation.
- **System Usability Scale (SUS):** The SUS questionnaire consists of 10 items designed to assess the perceived usability of the system. User rate each item on a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree." The SUS provides a quantitative measure of usability, allowing for comparison across different systems and iterations.
- **Utility Assessment:** The utility questions are adopted from Arhipainen Heuristics' questionnaire to assess the alignment of the app with user values and intended contexts. These questions probe the extent to which the app provides utility matching with the user's values and whether it is designed to fit the intended contexts of use.

RESULTS

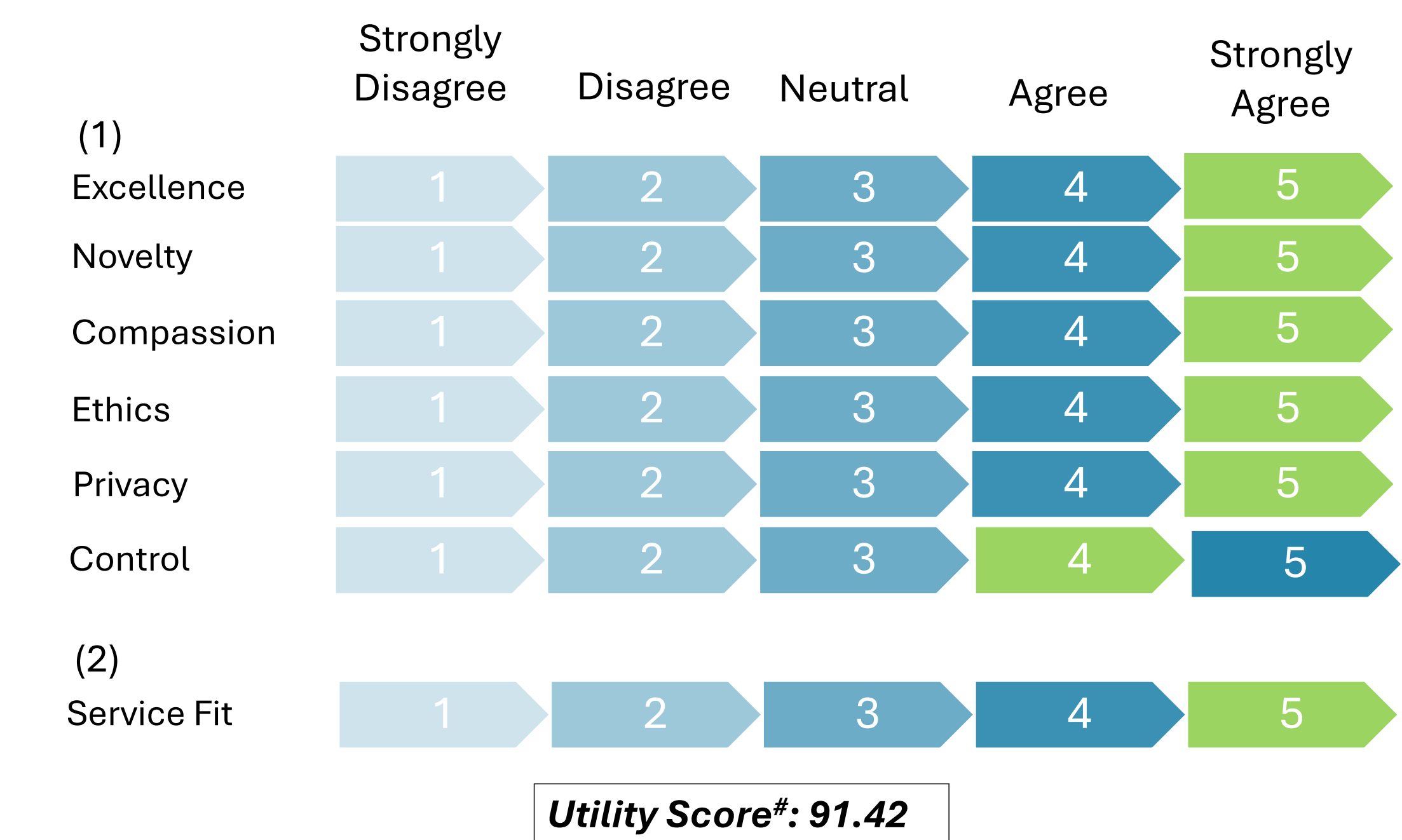
System Usability Scale Rating

The System Usability Scale (SUS) measures the subjective assessments of the usability. The scale is set of 10 questions on which the assessment is performed.



Utility Assessment

Adopted from Arhipainen's Heuristics



A = (Sum of the points for all sub-sections of the first question/35) X 50; B = Point for second question X 10 = 50; **Utility score out of 100 = (A+B)**

Heuristic Evaluation Overview

- A cognitive walkthrough was conducted to assess the platform across various aspects of app usage and user experience, leveraging Jakob Nielsen's usability heuristics for evaluation.
- **Visibility of System Status:** The app effectively communicates the status of sleep recording and analysis, keeping users informed throughout the process. The results are customized to the user's sleep patterns, ensuring personalized feedback and enhancing the experience.
- **Match Between System and Real World:** The app uses terminology and visual representations that align with user expectations, making it intuitive to understand and navigate. For instance, the graphical depiction of sleep cycles resonates well with non-technical users.
- **User Control and Freedom:** While the app is easy to use and enables frequent engagement without requiring technical training, the lack of "Back" buttons occasionally restricts seamless navigation. Adding back buttons would enhance user control and freedom, reducing potential frustration.
- **Consistency and Standards:** Most app features are well-integrated, following a consistent design language and operational flow that aligns with user expectations. This consistency contributes to an overall positive experience.
- **Recognition Rather Than Recall:** The app is designed to minimize memory load for users by presenting necessary options and information at relevant points. This ensures that users can easily interact with the app without needing to recall prior steps or instructions.
- **Flexibility and Efficiency of Use:** The app is quick to learn and supports both novice and regular users with equal ease. This flexibility allows for frequent use without introducing complexity.
- **Help and Documentation:** The app's design makes it highly intuitive, reducing the need for extensive documentation or technical training.
- **Aesthetic and Minimalist Design:** The platform emphasizes simplicity, presenting users with only the most relevant features and options for tracking sleep and improving health, avoiding unnecessary clutter.
- **Scientific Credibility:** One of the app's core strengths lies in its scientific basis, which reassures users and promotes confidence in its ability to aid sound sleep and long-term health improvement.
- **Error Prevention and Recovery:** While the app generally prevents errors through intuitive design, introducing enhanced error recovery mechanisms (such as undo buttons or back navigation) would further improve usability.

CONCLUSIONS

The Sleep cycle app is a science-based platform designed to track sleep and promote healthier sleep patterns through personalized chronotype analysis. It stands out for its intuitive interface, ease of use, quick learning curve, and a variety of soothing audio options that enhance sleep quality.

While the app is highly effective, usability could be further improved by introducing back buttons for smoother navigation and refining feature integration for a more seamless user experience. Overall, it is a reliable tool for improving sleep and overall health, with room for targeted enhancements.

ACKNOWLEDGEMENTS

Authors would like to acknowledge the HITLAB research team for study support and implementation