Sleeping behavior change

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Introduction

Sleep and various gadgets worn on the hand, what can be found in common between them... An alarm clock? A heartbeat meter? And besides her?

This teamwork consists of several stages, including observations made on the basis of the current decades of mobile and portable devices closest to a person.

Goals

The main objectives of the project are:

1. Create a system of automated alarm clocks and sleep reminders triggered by human condition data obtained from a wristwatch.

2. Increased convenience: The alarm clock and sleep reminder will be built automatically based on the screen time data of the main human devices.

3. Increased convenience: for people experiencing time constraints or sleep problems, the most optimal sleep regime and methodology will be offered based on the provisions and schedule of AI monitoring.

System Overview

The system consists of the following key components: User interface (UI)

1. A wristwatch application, a mobile application, a web application, as well as a PC application in which artificial intelligence will request data and based on this create the sleep mode necessary for a person.

2. The application will monitor the human condition, the screen time of devices and the process automation system in real time.

Functional requirements

1. Edit data: Users should be able to request data through the mobile application, choosing a convenient time for themselves or the opportunity to specify an event.

2. Purpose of the robot: As soon as the data request is made, the system assigns AI to perform automated recording, editing, and analysis of optimal methods for humans.

3. Offline operation: The system must independently continue its task on devices when disconnected from networks.

4. Real-time tracking: Users should have access to real-time tracking of the system status and estimated time when connected to networks.

5. Human condition data: The system should also process human condition data from a wristwatch, allowing for more careful planning of the regime using AI.

Observations

Fortunately, the main observations for this work have already been made for us by mastodons of different devices, and now we have a screen time function.

Where we have information about the applications and web pages used, the time of use and the time showing when it was used.

Link to the materials of Observations [1]:
https://drive.google.com/drive/folders/1jSMTagZ4ruB5XvefDB63_21wdqeX5Whi?usp=sharing

Proper analysis of data

Friday | November 29 | A person used the devices for 09 hours and 16 minutes between 06:00 - 14:00 and 18:00 - 00:00
Saturday | November 30 | A person used the devices for 09 hours and 38 minutes in the interval from 10:00 - 00:00
Sunday | December 01 | A person used the devices for 08 hours 02 minutes between 14:00 - 00:00
Monday | December 02 | A person used the devices for 09 hours and 09 minutes between 00:00 - 03:00 and 09:00 - 12:00 and 16:00 - 12:00
Tuesday | December 03 | A person used the devices for 01 hours and 27 minutes between 00:00 - 01:00 and 23:00 - 00:00
Wednesday | December 04 | A person used the devices for 05 hours and 18 minutes between 03:00 - 04:00 and 15:00 - 18:00 and 22:00 - 00:00
Thursday | December 05 | A person used the devices for 05 hours 03 minutes between 00:00 - 05:00
Friday | December 06 | A person used the devices for 12 hours and 05 minutes between 00:00 - 05:00 and 10:00 - 18:00 and 20:00 - 00:00
Saturday | December 07 | A person used the devices for 12 hours and 11 minutes between 00:00 - 07:00 and 10:00 - 15:00 and 22:00 - 23:00
Sunday | December 08 | A person used the devices for 04 hours 03 minutes between 04:00 - 07:00
Monday | December 09 | A person used the devices for 09 hours and 14 minutes between 00:00 - 02:00 and 06:00 - 12:00
Tuesday | December 10 | A person used the devices for 07 hours and 20 minutes between 07:00 and 14:00
Wednesday | December 11 | A person used the devices for 10 hours and 32 minutes between 04:00 - 09:00 and 12:00 - 15:00 and 20:00 - 00:00
Thursday | December 12 | A person used the devices for 00 hours and 37 minutes between 05:00 and 06:00

Sketches, storyboards, prototypes

Based on these data, you can notice similar values recurring every day. And we can assume about the main activities in a person's life.
And the main idea about sleep time, according to the standard proposed by society, is to wake up at 7 a.m., work from 9 a.m. to 7 p.m., return home by 9 p.m. and eat, talk until 11 p.m. and then go to bed.
And so it is every day, weeks, months and years... But in this scenario, it is worth giving up a person's interests and hobbies, relationships with family members, as well as developing basic skills for a career path.
And in general, this standard is not widespread everywhere, there are a lot of professions and areas that require a different lifestyle.
And on this basis, we came up with the idea not to change a person's lifestyle, but to facilitate and improve it with the help of AI by implementing it on an electronic clock to compose reminders and an alarm clock based on time that is intermediate empty of activities.

Storyboard: Activities

Scene 1: Introduction to the Problem

Frame 1: A man's life in a routine
Visually: An image of employees sitting in an office with a smartwatch in their hand and gadgets on the table. Every day is monotony: work from 9 to 7, home, sleep... and so on in a circle.
Action: The main devices (wristwatches and mobile device) used by a person records activity in the office via GPS and device usage.

Frame 2: A man is sleeping
Visually: A person falls asleep in bed with a tired expression, looking at his smartphone before going to bed. "There is not enough time for personal hobbies and communication with loved ones."
Action: The main devices (wristwatches and mobile devices) used by a person records fatigue and sleep.

Frame 3: Measurements from a smartwatch
Visually: The screen of the smartwatch shows a graph of heart rate, activity and sleep.

Frame 4: Smartphone screen with usage time data
Visually: We see a smartphone screen with the "Screen Time" function, where data on the time of use of applications is displayed.
The text appears: "Analysis."
Action: The main devices (mobile devices) begins the analysis processes based on the collected data from the beginning of the person's day to his sleep.

Scene 2: Data Analysis

Frame 5: An example of data analysis
Visually: Graphs and diagrams with analysis of sleep and activity data that were collected during the week.
Action: "AI analyzes everyday data and suggests optimal moments for rest and work."

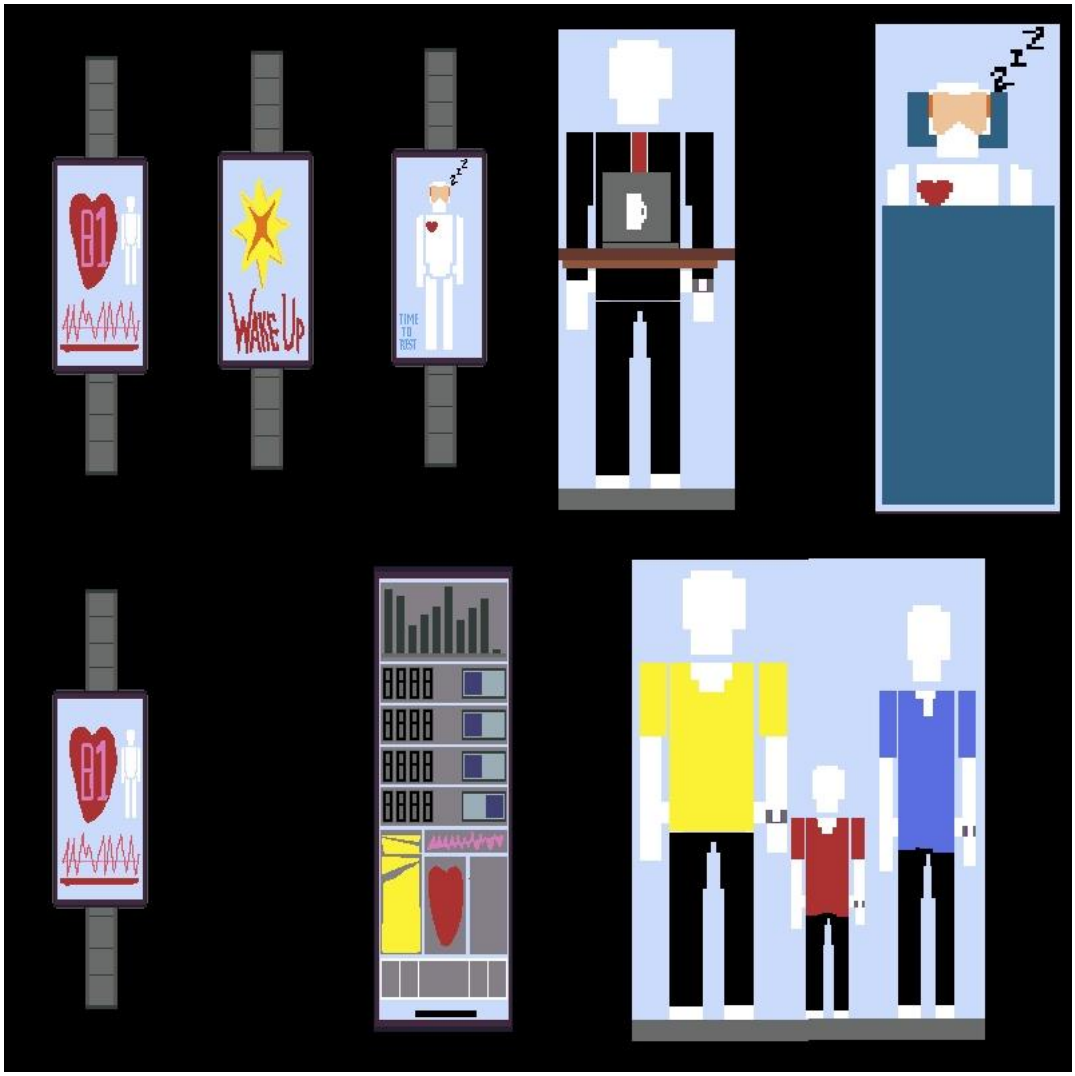
Frame 6: The clock warns about the time for rest
Visually: A notification appears on the smartwatch screen: "It's time to rest. Postpone work for 10 minutes to recover."
Action: The person looks relaxed and smiles, deciding to take a break.

Frame 7: Smart alarm clock with adaptation to the sleep cycle
Action: The smartwatch analyzes the sleep cycle and wakes up a person at a time when it is optimal for his well-being.
The text appears: "The alarm clock will be soft, and will wake you up at the optimal moment of the sleep cycle."

Scene 3: Results

Frame 8: A person is engaged in a hobby after work
Action: A person is sitting with a guitar or doing yoga, enjoying a hobby. He looks energetic and happy.
The text appears: "With the help of AI, a person finds time for personal hobbies and improves their productivity."

Frame 9: A man with his family
Visually: A person communicates with family, spends time with children or a spouse, participates in family activities.
The text appears: "Time optimization makes it possible to spend more time with loved ones."



Link to the materials of Presentation [2]:
https://www.canva.com/design/DAGZFNMI5XA/7pHe74GFaxY8xQ0AbdHhPA/edit?utm_content=DAGZFNMI5XA&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

Link to the Video [3]: https://drive.google.com/drive/folders/1jSMTagZ4ruB5XvefDB63_21wdqeX5Whi?usp=sharing