Parkinson's Perspective: Visualizing Impact

A personalized system for visualizing daily data of a Parkinson's patient.

Project Code: 25-1-D-6
Developed by: Omer Fatal & Tania Gendelman
Supervisors: Dr. Julia Sheidin and Dr. Avital Shulner Tal

Motivation

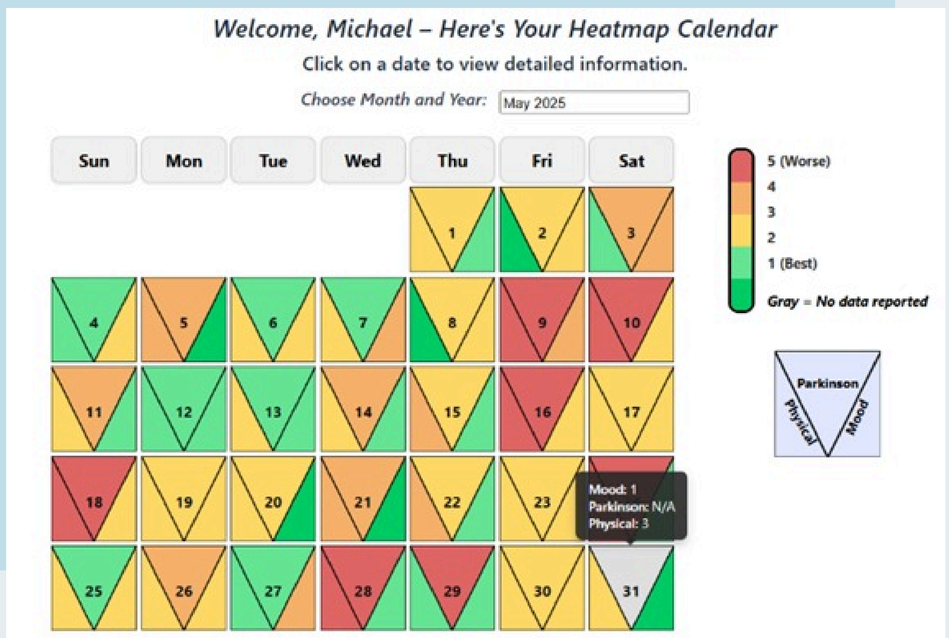
Many Parkinson's patients find it difficult to understand how their daily actions affect their symptoms, physical difficulty, and general feeling.

While some tools exist that attempt to do this, they are not well-suited to present personal health data in a clear and accessible visual format.

Our Goal

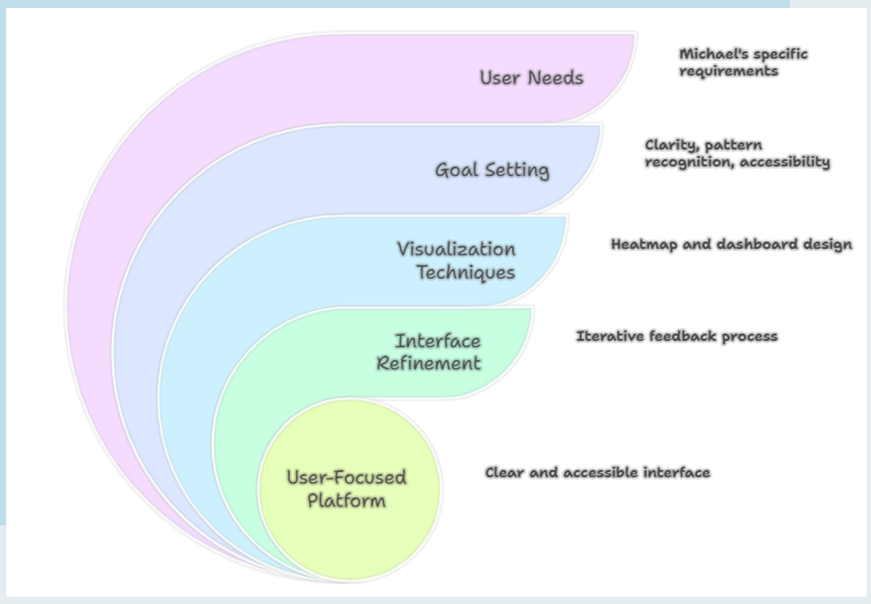
Our goal was to develop a system that presents health data in a simple, organized, and visual way.
By transforming one patient's daily logs into clear and interactive visualizations, the patient can explore his routine, identify patterns over time, and better understand how different actions such as taking medication, eating certain foods, or engaging in specific activities affect his condition.

Heatmap Calendar

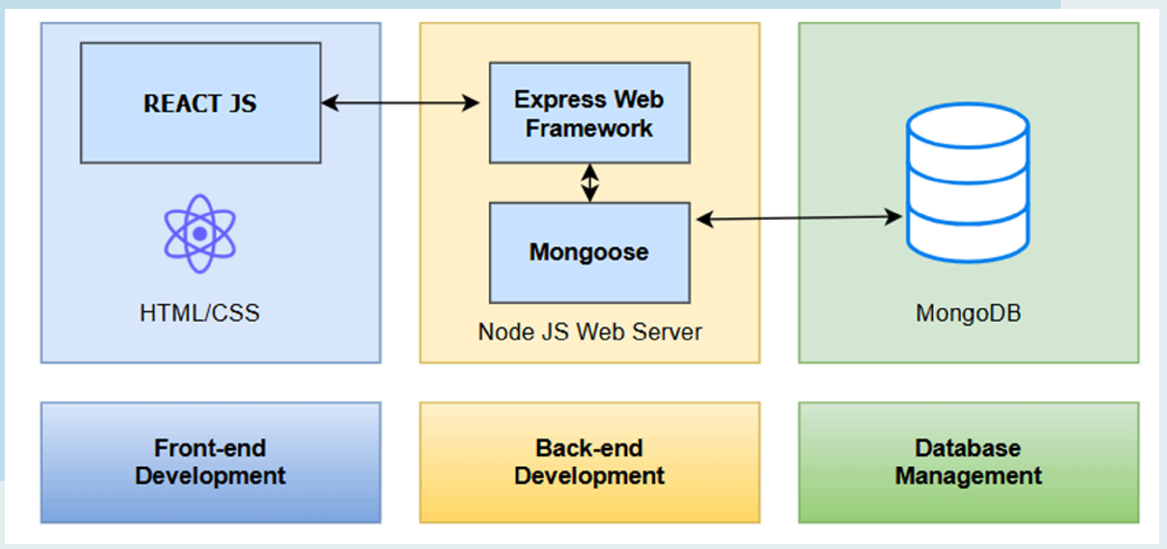


Daily Analysis

Development Process



System's Architecture



Challenges Faced

Data Completeness

One major challenge was that Michael didn't consistently log data every day, resulting in missing values and incomplete visualizations. To overcome this, we enriched the existing data with simulated entries using a CSV file. This allowed us to properly demonstrate the visual design and ensure a full user experience during development and testing.

Data Representation

A key challenge was transforming raw health data into visualizations that were clear and easy to understand. Parkinson's symptoms, medications, and activities are complex to represent, and poor design could confuse rather than help. We addressed this by creating focused, well-labeled graphs with intuitive structure and consistent scaling, making it easier for the patient to explore their data.

Project Evaluation

Evaluation results from 10 participants (average age 29.78; 6 males, 4 females) indicate that the visualization platform is highly usable and well-received.
The average SUS score was 78.5, reflecting strong usability. Participants also rated each individual visualization on 8 criteria (e.g., clarity, ease of use, frustration) using a 1–7 scale. Feedback suggests that users found the interface intuitive and the visualizations helpful for understanding daily patterns.