

Background Service App

Languages: Flutter, Java

An app that runs in the background, collecting sleep data from a health tracker and syncing it to a database

Main Screen

Toggle Background Service

One-Time Activation App for
Persistent Background
service

(Will also start automatically after a boot up)

Persistent Notification

Show Status of syncing
process

Database

Hosted by Firebase

- Anonymous Authentication
- Hosting of Sleep Sessions during the day (Duration of Sleep Stages: REM, Light, Deep...)
- Backend Cloud Functions for organizing the sleep data for the limited ESP 32 storage

Candle Prototype

Language: C++

The four screens mimic a candle's body, with the LED as its flame, conveying Sleep Stages, Duration, and Quality to the user.

ESP 32 Module

- Controls four 2.8" TFT Displays and a LED
- Checks the database for new entries for the current date
- Creates an image that represents the sleep stages and lets the LED communicate Sleep Duration and Sleep Quality

Screens

Shows sleep stages using
color-coded stacked bars

LED

Indicates sleep duration
and quality through
brightness and blinking
patterns

