Flowstate App

Personal Energy Cycle Predictor Overview

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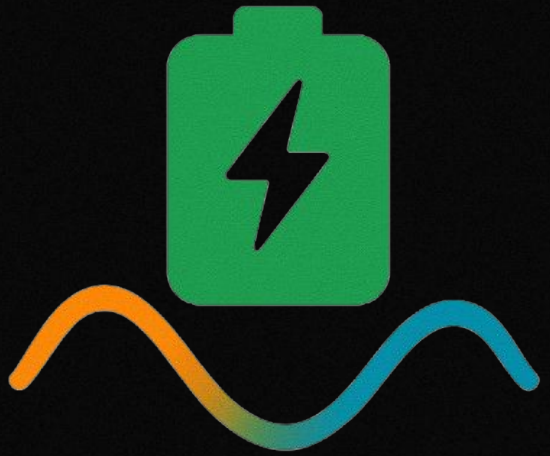


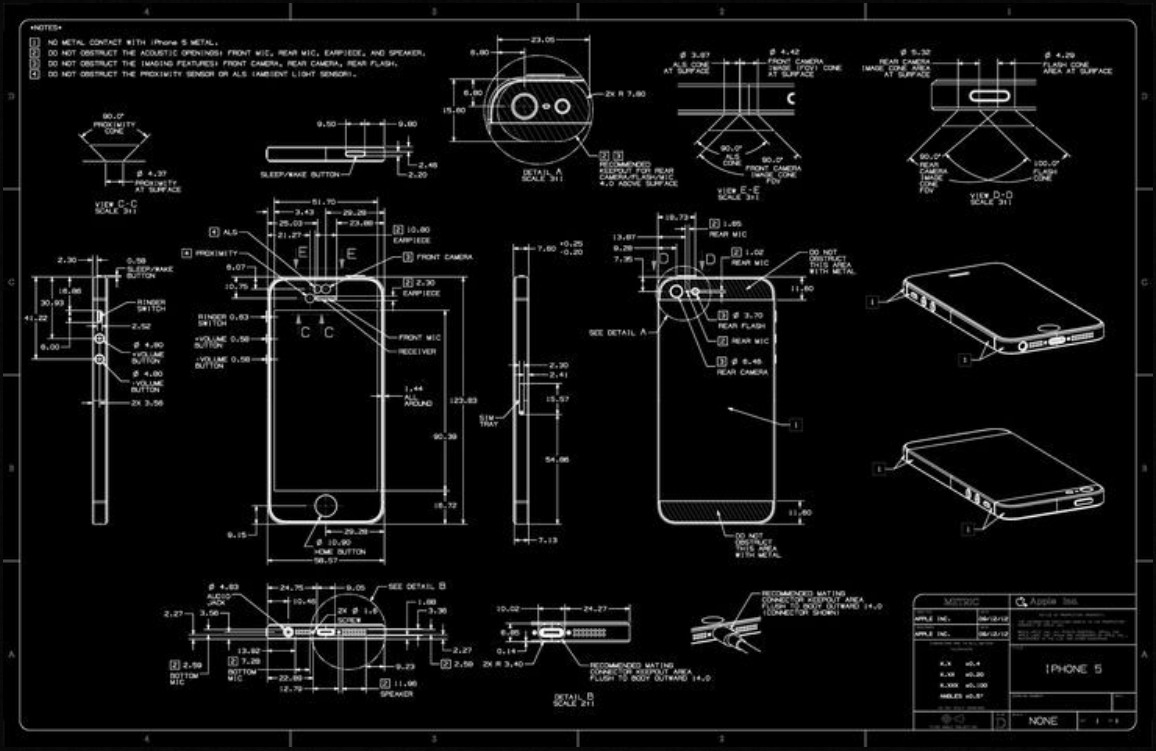
Introduction

What is FlowState?

- Android app that predicts daily energy levels
- Uses biometric + cognitive data with ML & AI
- Builds personalized daily schedules aligned to your natural energy cycles

Core Goal

- Work smarter, avoid burnout, and improve personal productivity



Project Overview

Problem Statement and Motivation

Current reality

- People schedule tasks without energy awareness
- Leads to:
  - Mental fatigue
  - Reduced focus
  - Poor performance timing

Market gap

- Wearable apps track health
- Calendar apps schedule time
- **Nothing combines both using ML + AI**

Our Solution

- Predicts hour-by-hour personal energy levels
- AI schedules tasks to match energy states:
  - High-focus work → peak energy
  - Routine tasks → moderate energy
  - Rest → low energy

Goals

- Boost daily productivity
- Reduce cognitive & physical fatigue
- Increase awareness of energy patterns

Solution Description and Goals

Target Users and Stakeholders

Primary Users

- Students
- Knowledge workers
- Wearable device users

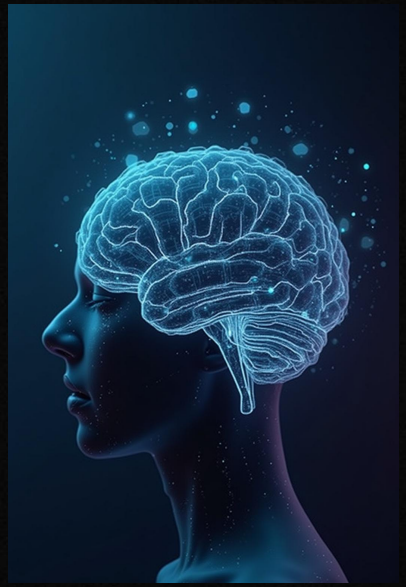
Secondary Users

- Wellness-focused individuals tracking sleep, stress, and performance

Stakeholders

- CP470 course instructor (project sponsor & validator)
- FlowState development team

Technical Implementation



System Features and Data Collection

Data Collection

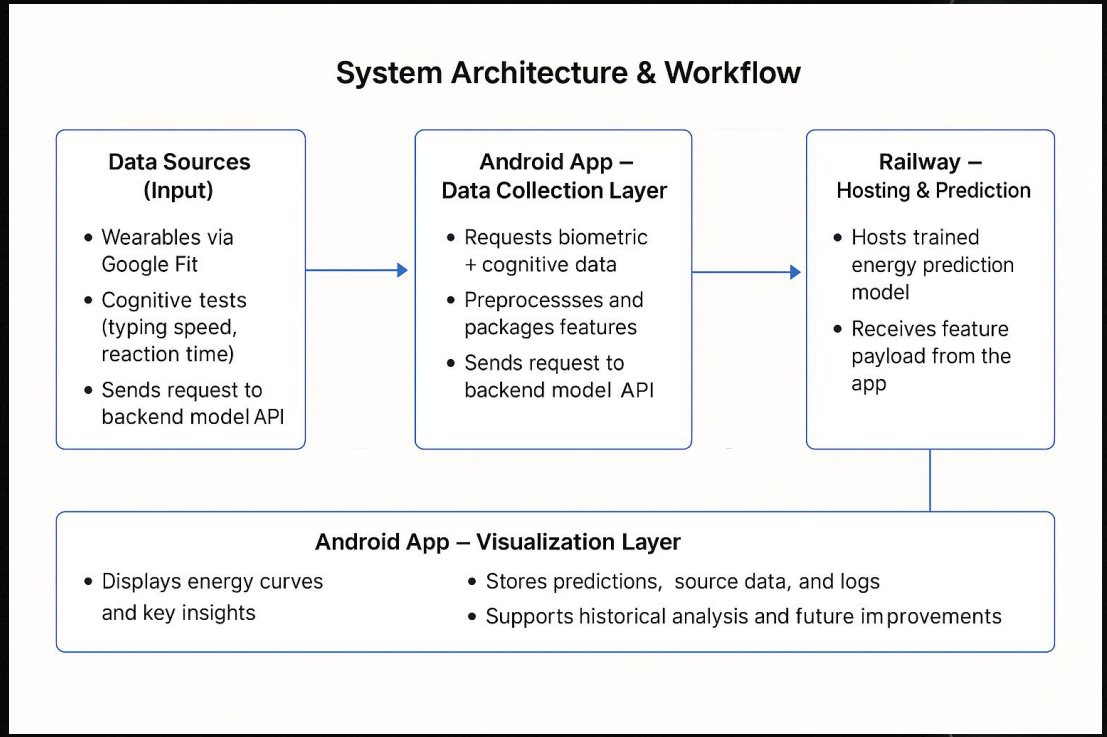
- Wearables (Google Fit)
  - Sleep duration & quality
  - Heart rate & HRV
- Cognitive Tests:
  - Typing speed
  - Reaction time

Core Features

- ML energy prediction
- AI schedule generation
- Visual analytics dashboards
- Android Calendar synchronization

Key Technologies

- Java Android + Material Design
- Flask Server hosting Amazon Chronos Model (Deployed on Railway)
- Gemini AI scheduling
- Supabase PostgreSQL backend



System Architecture and Workflow

Challenges

- Integrating multiple wearable APIs
- Processing time-series biometric data
- Ensuring reliable AI scheduling outputs

Innovations

- Google Fit standardizes data ingestion
- **Cloud ML Model for fast processing**
- Constraint-aware AI scheduling
- Modular UI for scalability

Technical Challenges and Innovations

Project Impact

- Energy-aware productivity planning
- Reduced burnout risk
- Personalized daily optimization
- Scalable health-AI platform

FlowState demonstrates how wearable data, ML, and AI can enhance everyday productivity.

Conclusions

Demo Time