**SW Engineering CSC648-848-05 Fall 2024**

**Wellnest**

A Comprehensive Health Habit Tracking and Goal Management Application

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Milestone 1:

|  |  |
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| **Version** | **Date** |
| 1.0.0 |  |

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Executive Summary

In a world where physical and mental well-being are increasingly compromised by sedentary lifestyles, inconsistent routines, and digital overwhelm, there is a growing need for wellness solutions that are both practical and empowering. As a team of software engineering students, we are building Wellnest — a holistic and socially driven mobile application that helps users cultivate healthier habits, set and achieve personal wellness goals, and live more balanced lives.

Wellnest offers a complete ecosystem for health habit tracking. Unlike apps that focus on narrow metrics like steps or calories, Wellnest allows users to log and manage a wide range of wellness indicators — including food and water intake, sleep patterns, physical activity, and smoking and drinking habits. The app generates personalized dashboards to help users monitor trends and track their progress over time.

A key feature of Wellnest is its “Wellness Circle”, which enables users to connect with friends and family for collaborative or competitive health challenges. Whether it's a hydration goal or a daily step count race, this social component transforms health tracking into a shared and motivating experience.

In addition to manual tracking, Wellnest leverages AI-powered insights and behavioral nudges to help users stay on track. Smart reminders, adaptive suggestions, and milestone celebrations make the app feel less like a tracker and more like a supportive digital coach. These features are designed to sustain engagement and encourage long-term behavioral change.

Built with scalability and user experience in mind, Wellnest features a modular architecture that supports future expansion — such as integration with wearable devices, mood tracking, and mindfulness modules. The app also prioritizes data privacy, using secure protocols to protect user information while maintaining a sleek, gamified interface for enjoyable daily use.

From a technical and social standpoint, our goal is to develop a platform that is not only robust and secure, but also genuinely impactful. We believe that Wellnest fills a critical gap in today’s wellness market: it is an all-in-one habit companion that promotes consistency, self-awareness, and community — key pillars of sustainable lifestyle change.

By combining thoughtful design, smart technology, and a deep understanding of user motivation, Wellnest aims to become more than just an app — it aspires to be a wellness movement.

Actors:

**Rhea (Graduate Student, 25)**

**Characteristics, Skills, and Pain Points:**

* Balances a demanding academic workload with a part-time job
* Health-conscious but often struggles to stick to daily habits
* Forgets to hydrate and skips meals during long study hours
* Finds typical health apps overly complex or feature-limited

**Goals:**

* Establish and maintain a consistent hydration and sleep routine
* Set personal health goals that fit her academic lifestyle
* Get timely reminders that do not feel intrusive
* Join group challenges with peers for added motivation

**Devon (Tech Professional, 32)**

**Characteristics, Skills, and Pain Points:**

* Works long hours in a high-stress tech job
* Has a history of chain smoking and regular drinking, especially in social or work-related situations
* Has attempted to cut back before but lacked structured tracking
* Wants to change his habits but finds most apps either judgmental or generic

**Goals:**

* Track and reduce smoking and alcohol intake
* Identify behavior patterns over time
* Receive alternative suggestions that fit his schedule
* Stay motivated through small wins and progress tracking

**Mary (Homemaker, 45)**

**Characteristics, Skills, and Pain Points:**

* Manages her household full-time and often turns to food as stress relief
* Has a pattern of emotional eating, especially processed or high-calorie snacks
* Wants to build better eating habits but struggles with consistency
* Prefers gentle, flexible guidance over strict diet plans

**Goals:**

* Become more aware of food choices and patterns
* Get smart, real-time suggestions when logging unhealthy items
* Reduce junk food consumption gradually
* Build long-term healthy eating habits without guilt

**Jenny (Corporate Manager, 29)**

**Characteristics, Skills, and Pain Points:**

* Works late hours and often relies on caffeine to stay alert
* Rarely gets more than 4 hours of sleep per night
* Tracks sleep and caffeine via smartwatch but needs more context
* Wants to improve rest without drastically altering her work schedule

**Goals:**

* Understand how caffeine affects her sleep
* Get suggestions for better timing of caffeine consumption
* Receive gentle nudges and reminders to rest
* Use data to build small but lasting sleep improvements

**Arnold (College Athlete, 21)**

**Characteristics, Skills, and Pain Points:**

* Competitive and highly disciplined about physical fitness
* Struggles to fully eliminate soda despite his training routine
* Finds motivation in peer challenges and fitness tracking
* Wants to stay consistent without feeling punished for small slip-ups

**Goals:**

* Quit soda to align with trainer’s nutrition plan
* Use tracking to stay mindful of progress
* Participate in recovery-based challenges
* Receive motivation and accountability from peers

**Use cases:**

**1. Signing Up and Setting Up Health Goals**

**Actor:** Rhea (Graduate Student)

**Assumptions:** Rhea has a smartphone and internet access

**Use Case:**

Rhea is a full-time student who struggles with staying hydrated and getting consistent sleep. After hearing about Wellnest from a classmate, she installs the app on her phone. She taps on "Sign Up," creates an account, and selects hydration and sleep as her focus areas. She sets a target of 2 liters of water daily and at least 7 hours of sleep each night. The app offers her gentle reminders and invites her to join a 30-Day Sleep Challenge with other students, which she accepts.

**Benefits:**

* Helps Rhea stay properly hydrated by reminding her throughout the day, which is especially helpful when she’s busy with classes
* Encourages her to prioritize sleep by setting realistic, consistent targets and tracking her progress.
* Keeps her accountable through social challenges and gentle nudges without overwhelming her.
* Builds a healthy routine gradually, making it easier to stick with over time

**Wellnest System**

A black and white image of a person's coat

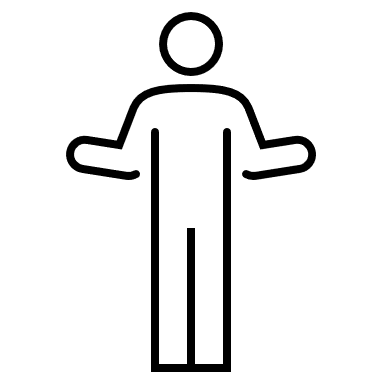
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System

Use Case

Actor

Relationship



**Rhea**

**2. Logging and Reducing Smoking/Alcohol Habits**

**Actor:** Devon (Tech Professional)

**Assumptions:** Devon wants to cut back on cigarettes and on social as well as personal drinking habits.

**Use case:**

Devon is a 32-year-old software developer who has been a chain smoker for years and tends to drink regularly — both during and after work, and during social events. He’s aware that these habits are affecting his health, but hasn’t been able to track or reduce them consistently. On the suggestion of a colleague, he installs Wellnest and starts logging every cigarette and alcoholic drink.

After two weeks of tracking, the app shows him a pattern: his smoking peaks during late-night work and alcohol intake is highest on weekends. It then suggests a personalized Evening Swap Plan, offering alternative substitutes like chamomile tea, music, or short breathing exercises. Devon enables the plan and starts receiving gentle nudges at his usual smoking and drinking times. Over the next month, he begins to log fewer instances, and the app acknowledges his progress with supportive messages and weekly summaries.

**Benefits:**

* Helps Devon clearly see when and why he smokes or drinks
* Offers practical, non-judgmental alternatives based on his lifestyle
* Reinforces progress with positive feedback instead of guilt
* Keeps him engaged with simple daily choices that add up to meaningful change over time

**Wellnest System**

A black and white picture of a person

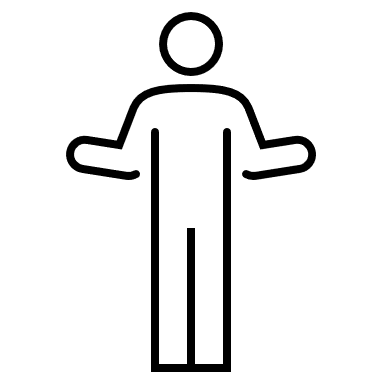
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System

Use Case

Actor

Relationship



**Devon**

**3. Identifying Junk Food Patterns and Suggesting Alternatives**

**Actor:** Mary (Homemaker)

**Assumption:** Mary wants to eat healthier but tends to stress-eat when overwhelmed

**Use Case:**

Mary, a full-time homemaker, often finds herself reaching for chips, cookies, or processed meals during moments of stress or exhaustion. She decides to try Wellnest to log her meals and gain more control over her eating habits. After a week of consistent logging, the app identifies a pattern of high-calorie, high-sodium foods, especially in the afternoons and evenings. It notifies her and offers healthier, quick-prep snack alternatives like hummus with veggies or Greek yogurt with fruit.

Mary enables Smart Substitution Alerts, which offer better choices in real-time when she logs similar processed items. Although she occasionally returns to her old patterns, she becomes more conscious of what she’s eating. Even when she indulges, she logs it honestly — and the app responds with encouragement, not guilt. Over time, Mary develops a more balanced relationship with food, choosing healthier options more frequently and understanding her triggers better.

**Benefits:**

* Builds real awareness around stress-eating habits and food choices
* Provides helpful and realistic alternatives that fit her daily routine.
* Encourages consistency without guilt, even when setbacks happen
* Supports long-term habit change by helping Mary understand and manage her triggers

**Wellnest System**

**A black and white image of a person's coat

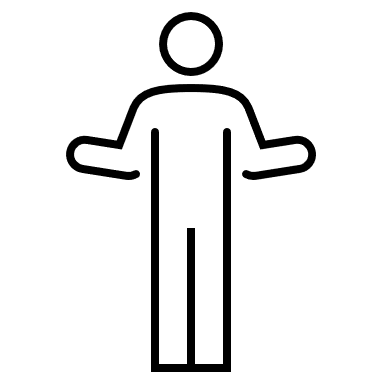
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System

Use Case

Actor

Relationship

****

**Mary**

**4. Weekly Insight and Adjustment**

**Actor:** Jenny (Corporate Manager)

**Assumptions:** Jenny regularly logs caffeine intake and sleep patterns using a health app

**Use Case:**

Jenny is a high-performing professional who works long hours, often late into the night. To keep up, she relies heavily on caffeine — mostly through coffee but sometimes energy drinks as well. Her average sleep time is under 4 hours, even on weekends. She begins using Wellnest to track her daily caffeine consumption and sleep duration.

After a week of data collection, Wellnest identifies that her late-night caffeine intake is severely impacting her sleep. It suggests a “Caffeine Curfew” and prompts her to shift to non-caffeinated drinks in the evening. Jenny enables this feature and receives gentle reminders to wind down. Over time, the app helps her replace evening coffee with herbal teas, and her sleep duration gradually increases. The weekly report shows clear improvement, and the consistent nudges keep her motivated to continue making better choices.

**Benefits:**

* Makes the connection between caffeine intake and sleep disruption clear and easy to understand.
* Provides personalized, manageable steps without overwhelming the user
* Reinforces small improvements through weekly reports and visible progress
* Helps Jenny begin a gradual but meaningful shift toward healthier routines despite her demanding lifestyle

**Wellnest System**

**A black and white image of a suit

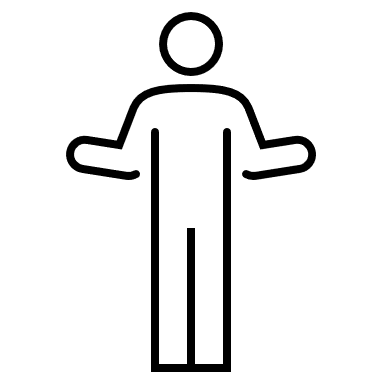
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System

Use Case

Actor

Relationship



**Jenny**

**5. Social Motivation Through Challenges**

**Actor:** Arnold (College Athlete)

**Assumption:** Arnold enjoys competition and is highly conscious of his health and fitness routine

**Use Case:**

Arnold is a state-level athlete who maintains a strict diet and workout routine. While he tries to avoid unhealthy food and drinks, he often finds himself tempted by sodas and the occasional fast food. His trainer has encouraged him to completely cut out sodas and replace them with protein drinks to stay competition-ready.

Arnold uses Wellnest to track his daily food and beverage intake. He signs up for the “No Soda for 7 Days” challenge through the Wellness Circle. On the third day, he logs a soda out of habit. Instead of disqualifying him, the app suggests a recovery activity — a 20-minute high-intensity workout. He completes the task and continues the challenge. Over the course of the week, Arnold becomes more mindful of his beverage choices, and the support from his wellness circle helps him stay on track.

**Benefits:**

* Helps athletes like Arnold build discipline by reinforcing long-term goals through short, manageable challenges
* Turns slip-ups into learning opportunities rather than setbacks.
* Keeps motivation high with encouragement and achievement badges
* Promotes consistency and mindfulness, which are crucial for athletes working to improve performance and health habits

**Wellnest System**

**A black and white image of a basketball uniform

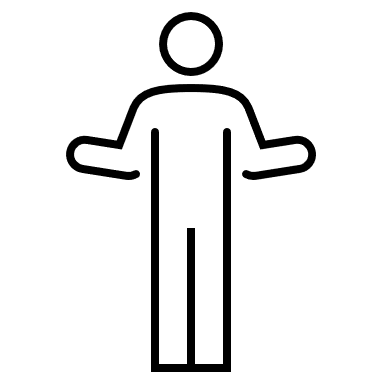
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System

Use Case

Actor

Relationship

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**Arnold**

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Competitive Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Feature** | **MyFitnessPal** | **Samsung Health** | **Google Fit** | **Fitbit App** | **Wellnest (Our App)** |
| **Strengths** | 🔹Largest food & nutrition database  🔹Barcode scanning  🔹Detailed macro tracking | 🔹Tracks sleep, stress, heart rate  🔹Built-in with Samsung devices  🔹Guided fitness programs | 🔹Minimalist UI  🔹Deep integration with Android & wearables  🔹Focused on daily activity | 🔹Advanced sleep & heart tracking  🔹Social challenges  🔹Fitbit device sync | 🔹Unified habit tracking (food, sleep, exercise, water, mood, smoking, alcohol)  🔹Social wellness circles  🔹AI suggestions and habit-based feedback 🔹Planned integration with Fitbit/Apple Health |
| **Weaknesses** | 🔸Cluttered interface  🔸Premium-only advanced insights | 🔸Samsung device dependency  🔸Lacks strong habit-building features | 🔸No social features  🔸No nutrition tracking  🔸Lacks reminders and nudges | 🔸Premium locked features  🔸Limited value without Fitbit hardware | 🔸Wearable sync not yet live (planned post-launch)  🔸Early-stage app still building user base |
| **Pricing** | 🔹Free basic version; Premium: $9.99/mo | 🔹Free | 🔹Free | 🔹Free basic version; Premium: $9.99/mo | 🔹Free during launch phase; all features unlocked |
| **Social Media & Community** | 🔸Facebook, Twitter, Instagram; In-app blog | 🔸Twitter, Facebook; Some social challenges | 🔸No official community | 🔸Facebook, Instagram; In-app friend leaderboard | 🔸Built-in Wellness Circles; In-app forum; Instagram, Twitter; Challenge friends and track together |
| **Onboarding Experience** | 🔸Requires long setup  🔸Feature-rich but overwhelming for first-time users | 🔹Quick start with Samsung login  🔹Good for casual tracking | 🔸Fast setup  🔸Basic goal setting | 🔹Quick for device users  🔸May feel data-heavy for new users | 🔹Seamless onboarding  🔹Pick goals and focus areas  🔹Gentle tone and inclusive setup |

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| --- | --- | --- | --- | --- | --- |
| **Feature** | **MyFitnessPal** | **Samsung Health** | **Google Fit** | **Fitbit App** | **Wellnest (Our App)** |
| Water Intake Logging | **+** | **-** | **-** | **+** | **+** |
| Food Logging with Smart Suggestions | **++** | **-** | **-** | **+** | **+** |
| Sleep Tracking | **+** | **++** | **+** | **++** | **+** |
| Smoking/Alcohol Habit Tracking | **-** | **-** | **-** | **-** | **++** |
| Personalized AI Nudges | **-** | **+** | **-** | **+** | **++** |
| Wellness Social Circle | **-** | **-** | **-** | **+** | **++** |
| Wearable Sync (Steps, Sleep, HR) | **+** | **++** | **++** | **++** | **+ *(planned)*** |

What we noticed during our review is that while these apps are great at tracking individual aspects of health, they often lack the ability to connect those areas in a way that feels truly supportive. few support behavioral change when it comes to long-term habits like smoking or excessive caffeine use.

Wellnest was developed with that in mind. We didn’t just want to make another tracker. Our focus was on building something that could guide users through gradual improvement, even if they slip up. Features like habit nudges, smart suggestions, and social challenges were designed based on what we wish existing apps had offered. We also made a conscious choice not to lock important features behind a paywall—at least in the initial release—so that users could genuinely benefit regardless of financial access.

In summary, Wellnest offers a more well-rounded experience, particularly for users looking for group motivation, and conscious habit change—not just fitness stats. And while we may not offer every integration yet, we’re building in a direction that supports real-life routines, not just ideal ones.

**URLs for Reference:**

* [*MyFitnessPal*](https://www.myfitnesspal.com/)
* [*Samsung Health*](https://www.samsung.com/us/apps/samsung-health/)
* [*Google Fit*](https://www.google.com/fit/)
* [*Fitbit*](https://community.fitbit.com/t5/Community/ct-p/EN)