

Bee Balanced

Requirements Specifications

Version 1.0



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1 Introduction

The wellness industry, focused on improving mental, physical, and social health, has grown rapidly in recent years. It is currently worth trillions of dollars and includes areas such as mental health, nutrition, fitness, and lifestyle coaching. This industry's primary goal is to provide tools, resources, and guidance for individuals seeking to enhance their overall health, happiness, and productivity. As society continues to prioritize personal well-being, the demand for simple and accessible health management tools has risen significantly.

Our project sponsor, Dr. Okim Kang, wants to address this growing need by creating a tool specifically designed for adolescents. Adolescence is a critical period in life when habits are established that can influence health for years to come. However, many existing wellness tools are geared toward adults and fail to address the specific needs of teens. Adolescents face unique challenges in managing their mental, physical, and social health, which makes early exposure to health guidance all the more essential.

To meet this need, Dr. Kang envisions a solution that helps teens track and improve their overall well-being in a meaningful and practical way. The goal is to provide younger generations with access to a tool that promotes healthy lifestyle habits. This project, titled *Bee Balanced*, is a healthy lifestyle coach web application aimed at adolescents. It seeks to empower teens by offering personalized features that help them manage and enhance their mental, physical, and social health in an interactive and engaging manner.

Bee Balanced will serve as an accessible digital platform, bridging the gap between existing wellness tools and the unique needs of teenagers. By focusing on this underserved demographic, the application has the potential to make a lasting impact on its users and contribute to the larger mission of improving overall health and wellness.

2 Problem Statement

Currently, our sponsor, Dr. Okim Kang, aims to provide adolescents with wellness support to help them improve their mental, physical, and social health. Adolescence is a critical time for building healthy habits, yet there are significant challenges in delivering this kind of support effectively. Traditional methods or simple digital tools often fall short in meeting the unique needs of this age group. Without a platform focused on personalization and real-time interaction, it becomes difficult to provide the kind of tailored guidance and tracking that teens require. As a result, many adolescents struggle to build and maintain healthy habits, hindering their overall well-being and growth.

This gap highlights the need for a solution that integrates personalized data collection, meaningful feedback, and engaging tools designed specifically for younger users. Such a

solution could empower teens to take control of their health in a way that is accessible, actionable, and impactful.

2.1 Sponsor's Current Workflow

- **Speech and Accent Analysis:** Dr. Kang and her team analyze how accents impact communication, using traditional linguistic analysis and different speech technologies.
- **Speech Technology Development:** Her current research lab develops tools that use speech recognition to better understand and assess the accents of non-native speakers. They've developed special technology to analyze parts of speech, which helps make tests more fair and accurate when evaluating people with accents.
- **Publications and Outreach:** Dr. Kang shares her research with the public through articles, interviews and public talks. She focuses on raising awareness about accent bias and promotes the understanding of non-native speakers.

While these workflows are both specialized and impactful, they do not directly address the challenges of adolescent wellness. However, her expertise in data-driven analysis and technology development creates an opportunity to design an innovative solution tailored to this new area of focus.

2.2 Problem Areas

- **Lack of Personalization:** Current tools and approaches do not cater to the unique needs of each individual user, making it difficult for teens to receive guidance that truly resonates with their personal goals and circumstances.
- **Limited User Engagement:** Many existing wellness tools fail to capture and sustain the attention of younger users. Without engaging features, adolescents are less likely to consistently use these tools, diminishing their overall effectiveness.
- **Limited Data Collection:** Traditional methods often lack robust data collection capabilities, making it hard to track progress, analyze trends, or provide meaningful insights to users.
- **Lack of Real-Time Feedback:** Adolescents benefit most from immediate feedback and actionable advice, but this is rarely available in current systems. Delayed or generic responses fail to inspire consistent habit formation.
- **Reduced Ability to Measure Feedback:** Without comprehensive tracking and reporting features, it is difficult for users to see the tangible impact of their efforts, which can lead to frustration and disengagement.

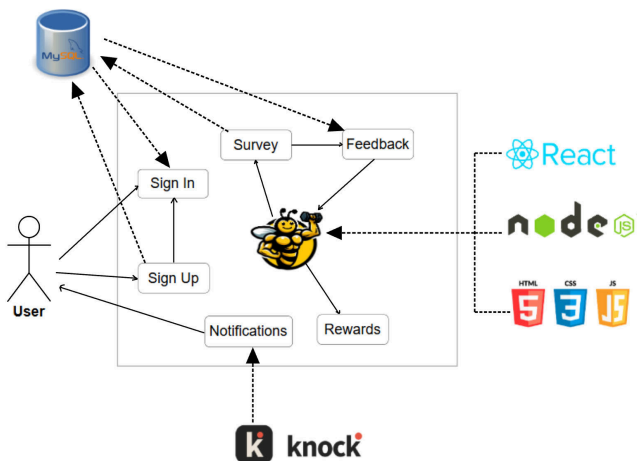
3 Solution Vision

To better address the challenges of providing personalized wellness guidance to adolescents, we propose Bee Balanced as a digital wellness platform designed just for them. Bee Balanced will give users an enjoyable and easy-to-use space where they can track their mental, physical, and social health. The platform will provide custom advice and feedback based on each user's goals, helping them build healthy habits in an enjoyable way. In addition, Bee Balanced will give our sponsor insights into how well users are progressing and how effective the program is.

3.1 Key Features

- Personalized Wellness Guidance
- Interactive and Engaging Content
- Data Collection and Tracking
- Real-Time Feedback
- Notification System

3.2 Diagram Overview



The following diagram should include the core components of Bee Balanced:

1. **User Input:** Users interact with the platform by answering questions, completing wellness activities, and tracking their health metrics.
2. **Data Processing:** The system analyzes user data to generate responses and personalized recommendations.
3. **Feedback Loop:** Based on data, the platform provides real-time feedback and guidance to users.

4 Project Requirements

For our project to be successful, the requirements will need to be clearly specified. This section will cover the functional, performance, and environmental requirements. Functional requirements will include the functionalities that are a priority to implement for the end product. Performance requirements will describe how the functional requirements will execute and perform technically. Finally, environmental requirements are the non-functional requirements concerning the constraints imposed on the project, meaning items that the team has no choice over, like restrictions on software and hardware.

4.1 Functional Requirements

4.1.1 User Management and Authentication

In order to keep a user's progress, every user will be required to create their own account, storing their data over time and personalizing their experience. This is established as a requirement for every user as the website needs to track a user's activity with the website, for example responses from surveys or their progression. There will be two separate key pages for handling a user's account, being the sign up and sign in processes. In addition, there will be a password recovery process, when a user forgets their credentials. To manage accounts with emails and passwords, a database will be utilized to check for existing and creating new profiles, with backend code to support error handling and submissions.

4.1.1.1 Sign Up

The sign up page will be for new users, with only one account for each email address. An email will be required as it will be utilized to send notifications to that user.

4.1.1.2 Sign In

The sign in page will be for existing users to access their account information, redirecting the user to the home page where they can view their progress or daily survey. Emails and passwords need to be input exactly as they were signed up in order to properly authenticate the user information.

4.1.1.3 Password Recovery

In the case of a user forgetting their password, since there is only one account for an email, there will be a password recovery system. Users will be able to create a new password for their existing account.

4.1.2 Daily Survey and Goal Setting

Every existing user will have a daily survey that they will be prompted to fill out, concerning their current health habits and patterns. The survey questions will be short enough to make the daily task memorable, keeping users engaged. Questions will be based around mental and physical health with key topics recurring in every survey, which will depend on the given user's current health status and the health type they would like to prioritize. However, the questions will have variation in their wording to avoid users feeling disinterested from answering redundant items. As a default, the time goal for interacting with the application will be based on credible research concerning the amount of time it takes to form a new habit, which averages around 60 days total. Taking the survey everyday will not be mandatory, although one will be provided to the user's account daily. To keep users engaged while not overwhelming them, the application will send a reminder to users about filling the questionnaire every three days.

4.1.3 Personalized Feedback

Based on a given user's responses to the surveys, feedback will be generated to advise users on how to improve upon their current well-being. This feedback will be tailored to individual users and the specific health aspects they may be lacking in, such as not getting adequate sleep or drinking enough water daily. The feedback will take into account the user's established health goals from their profile, for example if a user prefers to focus on bettering their physical health rather than their mental health. Advice will be calculated numerically from survey answers, such as getting an average score on an aspect of mental health and tracking the difference from previous surveys. From here, the system may suggest activities to improve lacking areas, like taking a daily walk to improve physical activity. There will be researched sources, like videos or articles, on the benefits of suggested tasks to complete, enticing users to follow through with the provided feedback.

4.1.4 Gamification and Engagement

Considering that this application will be targeted to adolescents, specifically high school and college students, there needs to be an aspect to keep the audience engaged and wanting to continue in their health journey. Younger audiences often respond well to interactive features, so it was decided to implement a gamification aspect for the application. This will consist of a rewards system linked to survey responses and health progress based on the user's specific health

goals. Incorporating visual indications of progress will keep the users engaged and make bettering health fun and motivating.

4.1.4.1 Rewards

Users will earn badges for meeting their health targets, like getting regular exercise or getting more hours of sleep. This will be tracked through the addition of more surveys, recording whether a user is being consistent or actively improving an aspect of their health.

4.1.4.2 Progress

In addition, users will have access to their health progression that tracks their consistency over time, visually showing how far they have come in maintaining their new habits. This will involve computing the difference of the current state of a user's health with the latest recorded state, displaying positive or negative changes.

4.1.5 Notifications and Reminders

To ensure users remain engaged and consistently participate in health-related activities, the application will incorporate a notification and reminder system. Users will receive email notifications at regular intervals, such as every few days, prompting them to complete their daily survey or notifying them of key health milestones they achieve. Additionally, push notifications can be added as an option for users who install the mobile version of the application, helping keep health engagement accessible and in real-time. These notifications are intended to encourage users to maintain their routines and celebrate their achievements, reinforcing positive behavior changes over time.

4.1.6 Data Visualization and Progress Tracking

The application will use data visualization tools to allow users to track their health progress over time through charts, graphs, and other visual aids. These visualizations will display trends in users survey responses, highlighting improvements or areas where they may need more focus. Comparisons to average health metrics for their age group will also be available, providing users with a benchmark to promote self-awareness and motivation. Additional features, like streak tracking, will showcase how consistently users engage with the app, reinforcing habit formation and helping users visualize their growth. This combination of data visualization and tracking will make the application not only informative but also motivating, as users can see a clear representation of their progress and consistency.

4.1.7 Admin and Analytics Tools

An admin portal will be designed specifically for administrators, such as Dr. Kang, allowing them to monitor overall user engagement and analyze progress trends. This portal will provide insights into aggregated user data, such as daily survey completion rates, activity patterns, and common health goals among users. These analytics could also serve as valuable data points for research, enabling administrators to identify areas of high engagement or points of improvement within the app. Furthermore, aggregated data reports could help administrators make informed decisions about app improvements, including tailoring survey questions or adjusting reminder frequencies. This admin and analytics functionality will ensure that the application evolves based on user needs and usage trends, promoting a better, research-informed experience for all users.

4.2 Performance Requirements

4.2.1 Security and Data Privacy

The application will prioritize security and data privacy to protect users' sensitive information and ensure compliance with data protection regulations. All personal data, including user credentials and survey responses, will be encrypted during storage and transmission to safeguard it from unauthorized access. Additionally, the authentication process will implement secure protocols, such as multi-factor authentication (MFA), to enhance account protection. By focusing on data encryption and secure authentication, the application will provide a safe environment for users to engage with their health information confidently.

4.2.2 Usability and Accessibility

Ensuring that the application is both user-friendly and accessible will be crucial for reaching and retaining a diverse audience. The interface will be designed for intuitive navigation, with a focus on simplicity and clarity to accommodate users with varying levels of tech literacy. To meet accessibility standards, the application will comply with guidelines such as the Web Content Accessibility Guidelines (WCAG), providing features like screen-reader compatibility, keyboard navigability, and high-contrast design options. This commitment to usability and accessibility will make the application widely usable and inclusive, supporting engagement across different user groups.

4.2.3 Performance and Scalability

The application will be built to handle high volumes of user data efficiently and to scale as user demand grows. It will employ optimized data processing methods to ensure that survey results and feedback are generated swiftly, enhancing the user experience by minimizing wait times.

Scalability will be a core focus in the design, enabling the application to support an expanding user base without compromising performance. Whether accessed by a few users or many, the application will maintain a responsive experience, ensuring that users can engage with the app seamlessly at any level of demand.

4.3 Environmental Requirements

4.3.1 Platform Requirements

Bee Balanced will function as a web application that can be accessed on desktop and mobile devices using a variety of browsers. To reach a large user base, this involves compatibility with widely used browsers like Chrome, Firefox, Safari, and Edge. The platform needs to be responsive, which means it should automatically change how it looks on various screen sizes and resolutions, such as those found on desktops, laptops, tablets, and smartphones.

4.3.2 Hardware

Bee Balanced shouldn't require an excessive amount of local storage on users' devices or any specific hardware. Apart from a steady internet connection, it will just require regular computer resources and no extra hardware.

4.3.3 Software and Libraries

JavaScript will be the primary language used by Bee Balanced for front-end development. The project will use Node.js for backend development, enabling scalable and quick network applications. Given the requirement to manage adaptable data formats that may change over time, the database might be a document-oriented NoSQL database which includes Amazon Web Services (AWS). Bee Balanced may need to integrate with third-party APIs. This means that the project must adhere to the rules and API limitations of every external service, particularly with respect to secure data transactions and user authentication.

4.3.4 Security Standards

Strong authentication standards, including two-factor authentication (2FA) and safe password storage using, must be enforced by the system in order to protect user accounts. If the platform handles health-related data, it should comply with any applicable regulatory standards, including HIPAA (Health Insurance Portability and Accountability Act), to guarantee data compliance and integrity.

4.3.5 Legal Requirements

Bee Balanced is required to respect third-party resources' copyright and intellectual property rights, including any open-source libraries or licensed content. For any open-source components, adherence to licensing (such as MIT or GPL) must be preserved.

5 Potential Risks

5.1 Data Privacy and Security Information

Since Bee Balanced probably deals with personal information, such as health, mental health, or other sensitive data, there is a significant risk that this information will be compromised, either by accident or a data breach.

Users whose information is compromised may suffer damage, legal repercussions, reputational impact, and lost trust as a result of a breach. User confidence in the platform can be impacted by even a small security breach, which could result in a drop in user engagement or, in extreme situations, the platform's growth coming to a total stop.

Implementing safeguards for sensitive data, such as role-based access controls, multi-factor authentication, and end-to-end encryption, can reduce this risk. Protection is further improved by regular vulnerability assessments, security updates, and user training on cybersecurity best practices. By taking these precautions, the platform's continuing growth and dependability are ensured, user trust is protected, and the possibility of breaches is decreased.

5.2 Reliability and System Downtime

Bee Balanced's dependability is essential, particularly if users rely on it for advice on task management, wellness, or other balancing tasks. Any unplanned outage or failure could cause users to lose their routines or have a negative experience.

When users can't access their personal data when they need it, they could start to doubt the platform's dependability. Regular outages may result in fewer people staying on the project, and in extreme situations, consumers may migrate to rival platforms that offer a more reliable experience.

Keeping redundancy in place and planning frequent maintenance periods for upgrades and enhancements will aid in avoiding this risk.

5.3 User Misinterpretation or Misuse of Content

Users may misunderstand advice or recommendations on wellness or balancing platforms if it is unclear. This could cause people to apply recommendations in unexpected or even dangerous ways.

In the event that users misunderstand guidance-related features or advice and experience negative consequences, Bee Balanced may be subject to criticism and liability concerns. This is especially dangerous if the website offers users specific balancing techniques or health-related advice.

It is possible to guarantee that users accurately interpret advice by including explicit disclaimers, guidance notes, and instructional materials. Mechanisms for user feedback may also aid in the clarification and improvement of any unclear content. This also includes thoroughly reviewing content that our client provides.

5.4 Dependency on Third-Party Services

For some features, Bee Balanced may rely on external APIs, data sources, or tools. Bee Balanced's operations might be affected if one of these services goes unavailable, has latency, or changes its policies.

If a third-party service malfunctions, users can experience extended outages or functional gaps, which could harm Bee Balanced's reputation. Furthermore, changing API pricing or policies may result in higher expenses, which may affect the viability of the project.

Keeping backup plans or other suppliers for essential services on hand might lessen the effects of these interruptions. SLAs (service-level agreements) and contracts with suppliers can help guarantee dependable service and provide further protection.

5.5 Competition

The market for task management and wellness is competitive, and new services and apps are often coming up. Bee Balanced may lose customers or have to make quick adjustments if a competitor launches a more innovative or feature-rich product.

Bee Balanced may lose its unique attraction if a competitor's product better suits customer needs. Users may switch to other platforms, which could result in lower income and user engagement.

Bee Balanced can maintain user interest and competitiveness by constantly introducing features depending on market developments and user input. Bee Balanced's market position can be preserved by highlighting its unique proposition for value.

6 Project Plan

Website Framework

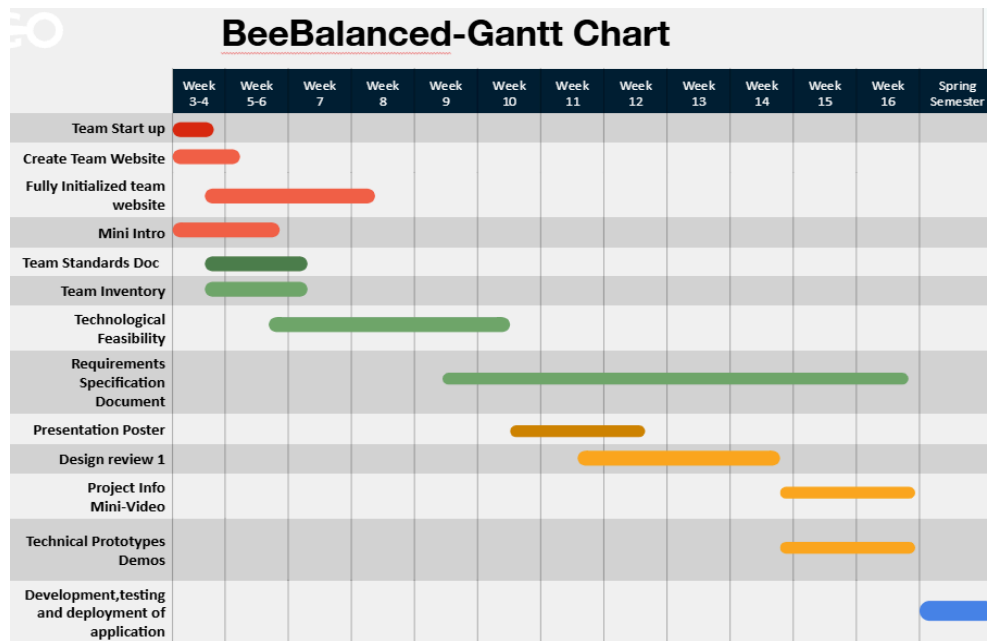
Our main priority is to have our website's framework solidified. This includes the specific tabs and placing where the gameplay and surveys are going to be. As our main audience are the youth, the interface must be as readable, understandable, and easy to navigate as possible.

Notification System

Our biggest tech problem is the notification system and how to teach the users. Our plan is to solidify what APIs we are using. We need to be able to successfully obtain user-contact information to notify them as frequently as they choose.

Survey Questions

Our most important feature is the survey questions. The survey questions act as our data analysis to keep track of the users' wellness and progress. The project will utilize a database in order to keep track of a users' answers.



7 Conclusion

Bee Balanced aims to be an engaging application that supports and encourages adolescents to create new positive habits and improve upon their well-being. Cultivating healthy habits for youth is imperative to bolster balanced lifestyles and set them on the correct path for adulthood. The main focus of Bee Balanced is around providing surveys concerning health and

interpreting individual survey results, giving advice and feedback based on those results. This may be an adequate system for informing users, but retaining the intended audience's attention and instilling long-term habits is required to maintain these changes. In order to motivate users and make the application a fun experience, the website will focus on implementing a gamification aspect, such as a rewards and badge system. Adding a visual display of progress for users and creating an interactive game system will incentivize younger audiences to stay consistent with their health improvement. Integrating an informational and supportive coaching application while making it entertaining and engaging will be the keys to making Bee Balanced unique and successful. With the team's established requirements, the team will be able to advance in executing the official prototype and demo process of Bee Balanced.