BEE BALANCED
Design Review Presentation 2

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What is Bee Balanced?

A personalized healthy lifestyle coach web application designed to help adolescents improve their **physical, mental, and social well-being** through habit tracking, gamification, and health recommendations.

What is our goal?

Our goal is to create an **engaging** and **accessible** platform that helps users build lifelong **healthy habits** through **interactive tools, real-time feedback, and ways to improve backed by real data and science**.

What's the issue?

Without a fun and personalized way to build healthy habits, teens may struggle with **poor health, stress, and feeling disconnected from others**.

Current Flaws

- **Boring & Uninspiring** – Most health apps don't keep teens interested, so they stop using them.
- **One-Size-Fits-All** – Current apps don't adjust to each person, making them less helpful.
- **No Clear Progress** – Many tools don't show useful feedback or track real improvements.
- **Scattered Approach** – Mental, physical, and social health are connected, and they all affect each other.

SOLUTION OVERVIEW

Personalized Wellness Tracking

- Users complete daily surveys on General, Mental, and Physical health.
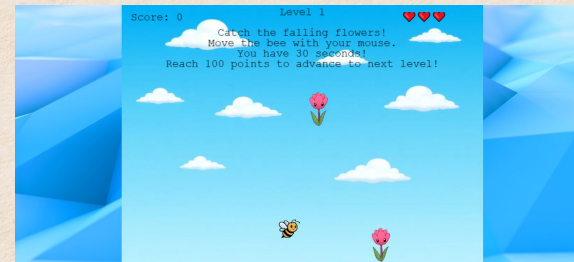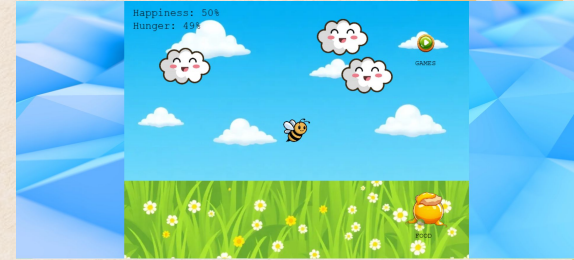
Flexible Survey Progression

- Users can choose between Mental and Physical sections after the General section.

Engaging User Experience

- Virtual pet or mini-games encourage participation and provide health advice.

Data-Driven Insights

- Visual reports for user reflection on health trends.

Implementation Overview

Tech Stack and Database

Built with Express.js and EJS templates for seamless backend/frontend integration. AWS database for secure storage and retrieval.

Survey Mechanics and Data Visualization

Sliding scale (1-10) with clear labels for accurate self-assessment. Charts will present survey results in an intuitive format through Plotly.js.

Notifications and Progress Flow

Notifications for user retention and effective progress through Knock. Conditional navigation ensures users complete at least one section per day.
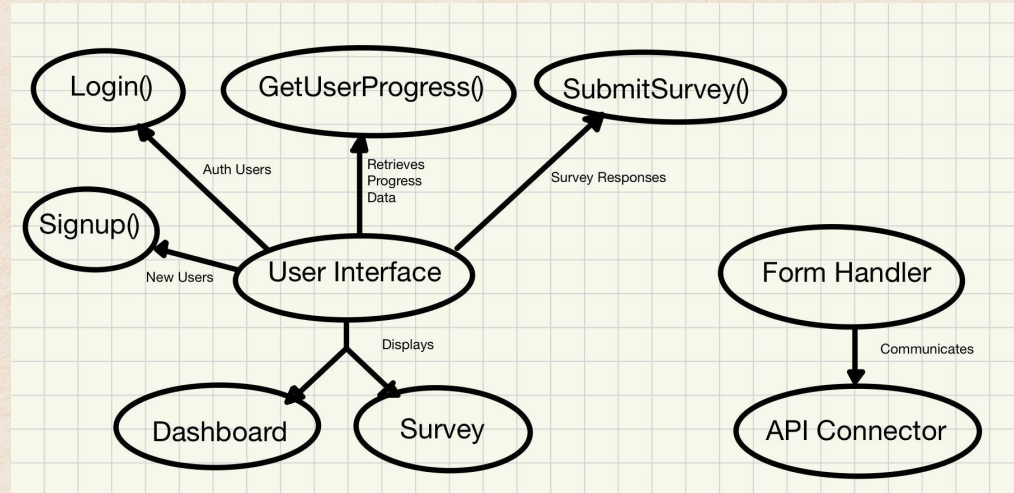
Interactive Elements

Virtual pet or mini-games made with C++.

Implementation Details

☀ Frontend

- **User Interface**
  - displays rewards, progress, and feedback
- **Survey Interface**
  - handles user inputs for daily surveys
- **Account Interface**
  - manages creating, storing, and updating account information

Framework: frontend is handled utilizing HTML and CSS

Implementation Details

Backend

- **Routes**
  - API endpoints
    - POST /login for authentication
    - GET /progress to retrieve progress
    - PUT /goals update the users health goals
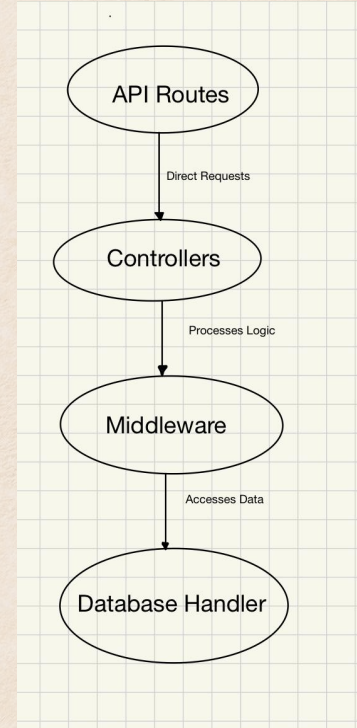- **Controllers**
  - execute business logic
- **Middleware**
  - account security and validation using MySQL
- **Database Handler**
  - manage data transactions of progress

Framework: backend is handled using Node.js with Express and plotly.js for progress tracking

Implementation Details

Database

- **MySQL**
  - Stores and retrieves relevant information for the user
  - Connected with Node.js
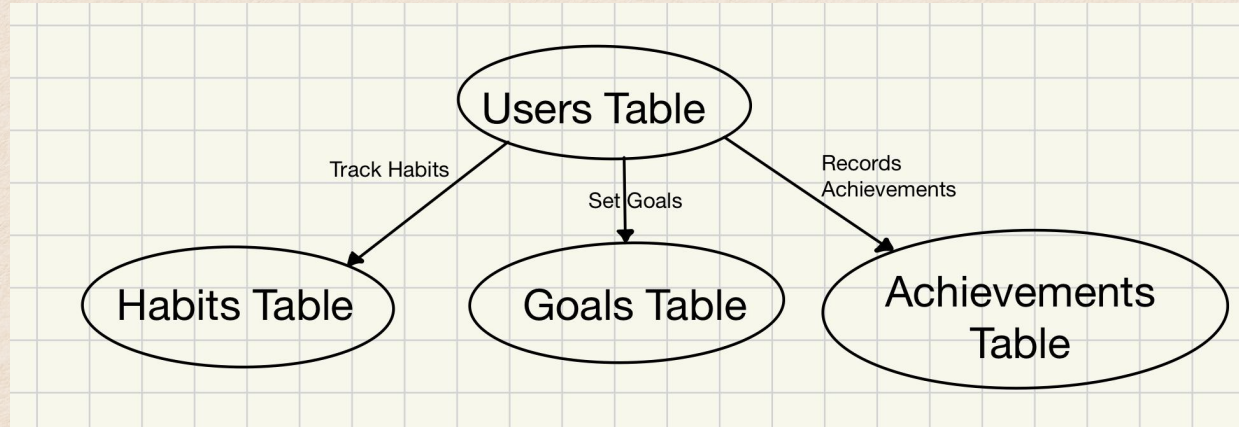- **AWS**
  - AWS instance to hold large amounts of user data

Tables:
Users: account information
Habits: tracks progress
Goals: holds goal information
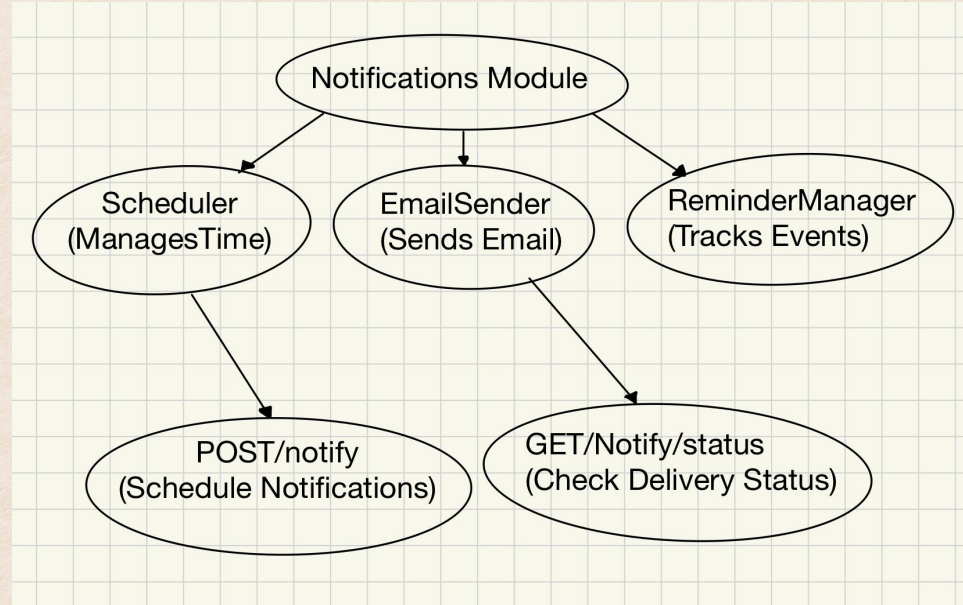Achievements: records goals met

Implementation Details

Notifications

- **Resend**
  - Uses a timer function to send an email to the specified user email once every three days
  - Includes a link to the webpage for easy access

Challenges and Resolutions

Challenges

- Development of the server with AWS
- Difficulty getting Express to work on the server
- Development of the survey randomization algorithm
- Development of the virtual pet with Unity program
- Using Chart.js with the server
- Issues with the old feedback system not working over AWS

Resolutions

- The virtual pet was redesigned as a web-based application by embedding the game script in an HTML view, ensuring better accessibility, compatibility, and deployment.
- Swapping Chart.js with Plotly.js
- The feedback system was removed since it was not functioning properly on AWS.
- A custom server was developed, where Express worked correctly, resolving the issue.

SCHEDULE
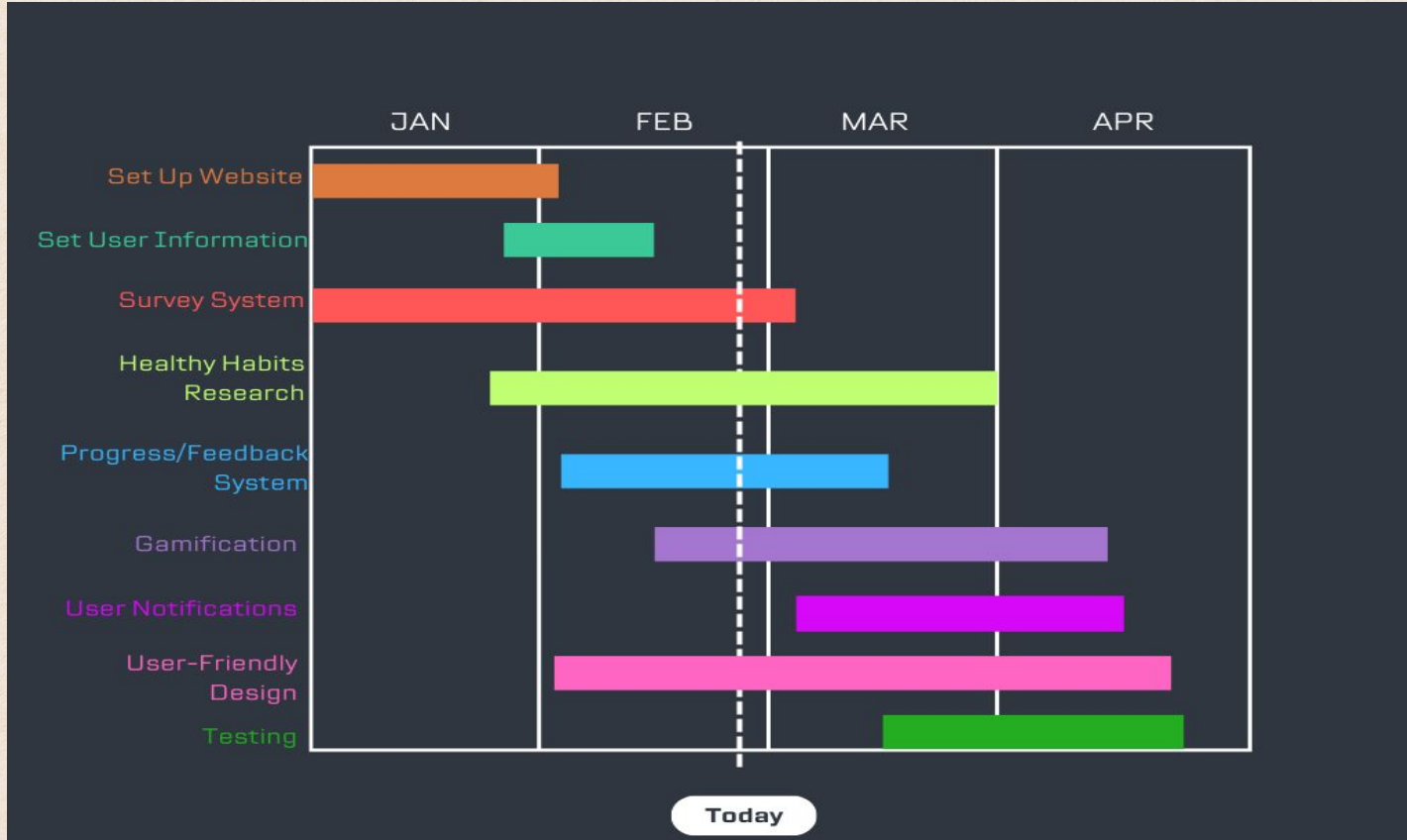
CONCLUSION

Bee Balanced successfully provides an **interactive, engaging, and science-backed** approach to helping teens develop **lifelong healthy habits.** By integrating habit tracking with gamification and tailored recommendations, the platform ensures user retention and meaningful progress in personal wellness.

THANK YOU!