

Habit Tracker

Team 11

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Project Overview

1.1 Description of Database Application

Our team will be creating a Habit Tracker web application. A habit tracker is commonly used in bullet journals. *Habit tracking* is a general term used to describe the task of keeping yourself accountable for tasks or goals each day throughout the week or month. These tasks and goals are completely personal to your overall goals and priorities. Figure 1 shows an example of a habit tracker from a bullet journal.



Fig 1: Bullet journal habit tracker example

For our web application, we will have basic tasks ready for the user to select such as “meditate, exercise, 7-9 hours of sleep, study, ” along with personalized ones that a user can set themselves. There will also be another space for a user to type how many hours they slept, what time they went to sleep, what time they woke up, how long they studied that day, and possibly more. Each day the user can click on a square (see figure 1) corresponding to the task they fulfilled and the app will fill in the square for them. An important part of our web application is that each day, the user has to specify what their mood was (i.e. happy, sad, neutral, stressed).

At the end of each week and/or day, the app will generate a report based on their habits and mood and find patterns. For example, if the user’s mood was stressed and they also weren’t getting enough sleep, the report will display this and suggest that the user improves their sleep habits, along with a resource for better sleep hygiene.

1.2 Stakeholders

The stakeholders of the app could be anyone. This app is for anyone who wants to keep themselves accountable for tasks or goals each day. It is especially helpful for college students with busy schedules who could also be having trouble with motivation.

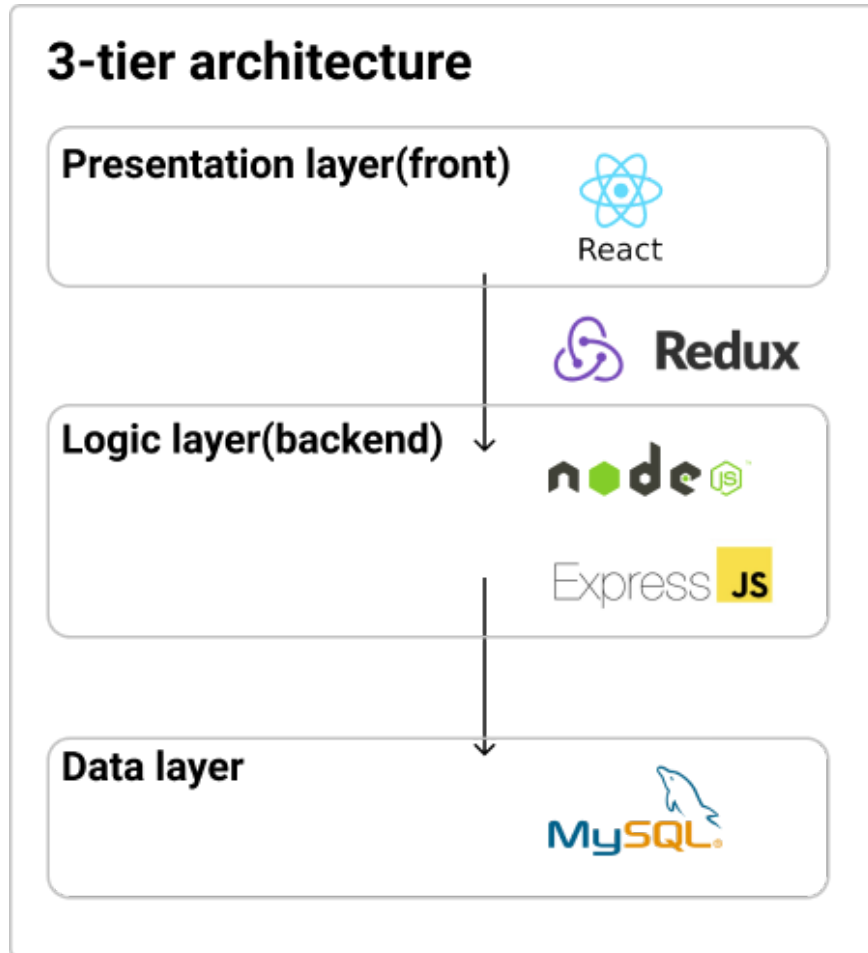
1.3 Importance

This app is important because it helps the user identify patterns in their life. For example, the app can correlate productivity with the user's sleep patterns. Or another example could be that over a few months, the user will be able to get an average of how many days they exercised each week, which can help explain weight gain, loss, or lack of. Many correlations can be made which can help the user with self development. Our habit tracker web application is more useful than creating a habit tracker in a bullet journal because the app generates a report of the patterns for the user. This saves time rather than people identifying patterns on their own. The app is also important because tracking habits on a daily basis gives people a sense of accomplishment. Users will likely start to have more motivation to keep them going the next day and so forth.

System Environment

2.1 A Structure Diagram of the System

The following Diagram shows the technology we mainly used for 3-tier architecture:



2.2 Software Tools used

- VSCode (a source-code editor)
- Github
- Git
- React (Javascript framework for building user interfaces)
- Redux (JavaScript framework for managing application state)
- Node.js (JavaScript environment for building a server)
- Express.js (Node.js framework for creating API)
- npm / yarn (package manager)

2.3 RDBMS used

- MySQL

2.4 Programming Languages used

- HTML
- CSS
- JavaScript
- SQL

Functional Requirements

3.1 Users and User Access

The users of this web application includes a wide range of individuals that want to focus on their self-development by tracking and learning from their habitual patterns, both good and bad. Since this application can be used by people of all ages and from all backgrounds, the interface will be both clear and easy to follow.

To access the system, the user must create a personal account on the website and then initiate a new Habit Tracker. After that, a screen will appear with the following list of suggested categories that the user can select:

1. Health & Fitness
2. Productivity
3. Money
4. Education & Goals
5. Chores
6. Relationships

Each of these categories will suggest specific options that the user can add to their personalized habit tracker. For example, in the Health & Fitness category, there will be a list of options such as Meditation, Exercise, Drink Water, Sleep, Flossing, No Junk Food, etc. The user can select these options and add descriptions to each hour, such as how much water or sleep they want to complete every day.

The only category that gets automatically added to every new habit tracker is the Mood row, which allows the user to input their mood every single day based on a list of emotions. Our habit tracker will analyze the daily moods compared to other categories, ranked both positive and negative, to help deduce patterns in the user's daily life. Additionally, users can create their own habits not listed above to make this habit tracker as personal and effective as possible.

After this selection process, the app will generate a habit tracker for the month, and users will be able to indicate that they have completed the task by pressing the square corresponding to the habit row and day of the month. If they pressed a square by mistake, the user can undo by clicking the same square again.

3.2 Features, Functionality, and I/O

The major features of this web application include:

1. Generating a graphical habit tracker for the month based on user selections

2. User can choose design of tracker based on color
3. “Create Your Own” habits as well as many suggested options
4. Visual completion of tasks with easy-to-use interface
5. Weekly report comparing daily mood to tracked habits

Feature 5 is the most important functional process of this web application, as the user will receive direct analysis on their habits compared to their daily mood. This report will include some affirmations and words of encouragement, as well as tips to help the user complete the habits that they are missing. In this way, the application will be able to significantly improve the user’s lifestyle.

There are two different I/O processes included in this application. Firstly, the user will input the specific habits that they would like to track over the course of the month and a design choice, outputting a new habit tracker. Secondly, once the user starts filling out the daily habits and moods, the application will publish a report at the end of the week analyzing the user’s behavior.

Non-functional Issues

4.1 Graphical User Interface (GUI)

To build the interface, we plan on using JavaScript with the React framework, as well as HTML for structuring and CSS for styling. This interface will include typing text, when creating or describing habits, as well as maneuverability with the mouse to track those habits.

4.2 Security and Access Control

To ensure that the user’s information is protected, the user will make a personal account with an encrypted password. Authentication of the user will be determined by sending an email confirmation to the user’s given address.