

Sriram Maganti

12/13/2023

CS 326 Project Proposal

Goal: To create an application that can help college students with tasks and make sure they stay on track to complete them. This is important because there are lots of people around the world that could use this to stay on track why else would they go to college if they only wanted to fail? It would be designed somewhat like the reminder app but with a social aspect to it and you can also have your own private tasks as well.

Task Ahead: To create a fun and social app that friends can use to help keep each other motivated. On each other's profiles, they'll have their list of things to do and people can leave comments below to give them some healthy reminders that they have things to do. Can also create a home page based on people you follow so it would be like an Instagram sort of design and on this home page, they can post any achievements that they got due to completing previous tasks. The tasks they complete will be output in a tree hierarchical order so everyone can see the process they took to achieve the result. Users can also heart and comment on the post.

Requirements:

1. Front-End Development:

For my front-end development, I plan to use JS, HTML, and CSS. The user interface will be very responsive because, with the use of Bootstrap and my own CSS, I plan to make it very fast and not have any lag. Dynamically updating the application will allow for the user to have a seamless experience which must be implemented via eventHandlers.

2. User Interaction and CRUD Operations:

CRUD will be very important in this application because to manage tasks, it requires the use of all of them. Having interactive forms and including input fields will allow users to add, edit, and delete their tasks as well as update the server for everyone to see if they have it public. Dynamically updating the UI with real-time information regarding their task allows for smoother user interaction.

3. Local Storage:

To make sure that user data is always available, locally I will use the local storage feature within the browser. Will implement storing and retrieving the information and if possible my end goal would be to use an AWS cloud server because if the local storage becomes too full it would be better for the application to retrieve its data from a cloud service where there is lots more storage and speed to retrieve it.

4. Back-End Development:

Using Node.js and Express.js frameworks, I will be able to handle data storage and retrieval much easier. CRUD will be important here because I need to make it easier for users to access all the routes. In addition, for storage, I will use PostgreSQL and implement a solid database for the user information to be safe and secure. Adding in authentication for the login will create a token-based authentication based on queries in the database.

5. Database Integration:

I chose PostgreSQL because "PostgreSQL's main benefit is its high data consistency and integrity, but it also encapsulates four important features: Atomicity, Consistency, Isolation, Durability (known as ACID), which ensure the transactions remain correct and reliable in DBMS during the process of writing or updating data." Based on this information, I thought PostgreSQL would be a good choice because my application will have lots of data and it will be rapidly changing based on tasks completed.

6. Communication between Front-End and Back-End:

The front-end and back-end will communicate using the fetch API in JavaScript, enabling asynchronous requests for CRUD operations. I will ensure proper handling of responses to update the UI accordingly, creating a smooth and efficient interaction between the two components.

7. Error Handling and Validation:

This is very important because having errors on a task manager is very bad because it can lead to notifications not working properly which can make it so you don't complete your tasks. Another error handling will come up as I go and will implement fixes.

Additionally, by adding error messages, I can help users in case any issues come up allowing for them to understand what is going on.

8) Collaboration

This is something that I thought would be added as a “new” factor to a task manager app. It would be designed somewhat like a LinkedIn and Instagram combo where I create a homepage where you can share your story with friends and family and also add your steps on how you did it. Creates a much more visible story to your success and allows for others to see what you did and get ideas from it. All in all, allows for people to feel encouraged and make changes in their lives. Without constantly adapting your mind and body, it is very hard to keep up in this modern world.

10) My wireframe UI for the project

