CIS 435: Web Technology
Dr. John Baugh
Project 4
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Roles & Responsibilities

Emmalyn was primarily responsible for the front-end development of the application. This included implementing the HTML structure, making the CSS styling choices, and working with the responsive design and ensuring a user-friendly experience. She also worked together with Kenshin evenly on the documentation and tutorial for this assignment.

Kenshin was responsible for implementing the backend for this project. This included the setup and integration of MongoDB, verifying the Node.js server implementation, and handling the requests brought on from testing the database. He also worked together with Emmalyn evenly on the documentation and tutorial for this assignment.

Throughout this project, both team members collaborated and delivered a balanced effort in creating this application. Both members tested all features and worked together to debug the application. A shared GitHub repository was created to update the codebase in real time. Regular meetings were attended to ensure the deliverables would be completed promptly. Despite the challenges of managing this course while preparing for other classes, work responsibilities, and graduation, communication resolved the majority of issues that arose in this project.

Introduction

For our final web development project, we chose to design a full-stack web application called Recipost. Recipost unifies the online community of those interested in discovering new recipes, sharing updated interpretations of classic meals, and managing their own library of creations. The inspiration behind the concept came from past software engineering projects that were designed for an organization to manage everyday things such as medications and books. This application is designed specifically for maintaining an organized collection of recipes digitally and allowing users to share them with ease. This creates an intuitive and user-friendly interface for users of all technological backgrounds to share their culinary inspirations. The application was built in accordance with the project requirements and web technologies learned over the course of this semester. HTML5, CSS, and JavaScript were used for the front-end development, and Node.js and MongoDB were used for the backend development.

Key Features:

- Users are able to create new recipes and post them to the community board. They are able to include a recipe's ingredients, instructions, prep time, cook time, servings, and label the recipe as a category of meal.
- Users can search for recipes based on keywords or use a filter to find a recipe based on its category of meal category.
- Users are able to create recipes, update recipes, and delete recipes in accordance with the management of their library.
- MongoDB is able to perform database actions by saving all recipes between user sessions.
- The application was designed to be user-friendly, and that includes being responsive to different screen sizes.

Design Considerations

The application falls into a traditional architecture pattern with the front-end and back-end aspects of the application. JavaScript allowed for a simplistic interpretation of fundamental skills used to create a lightweight application within the framework**.** The HTML elements utilized traditional semantic structure for accessibility. The CSS provided a responsive layout and framework for a clean aesthetic.

Node.js was a key component of promoting a simplistic module capable of handling the functional requirements of the project. MongoDB was a learning curve, but in the end, it aligned well with the other tools we used throughout the project and allowed for easy modifications and schema validation.

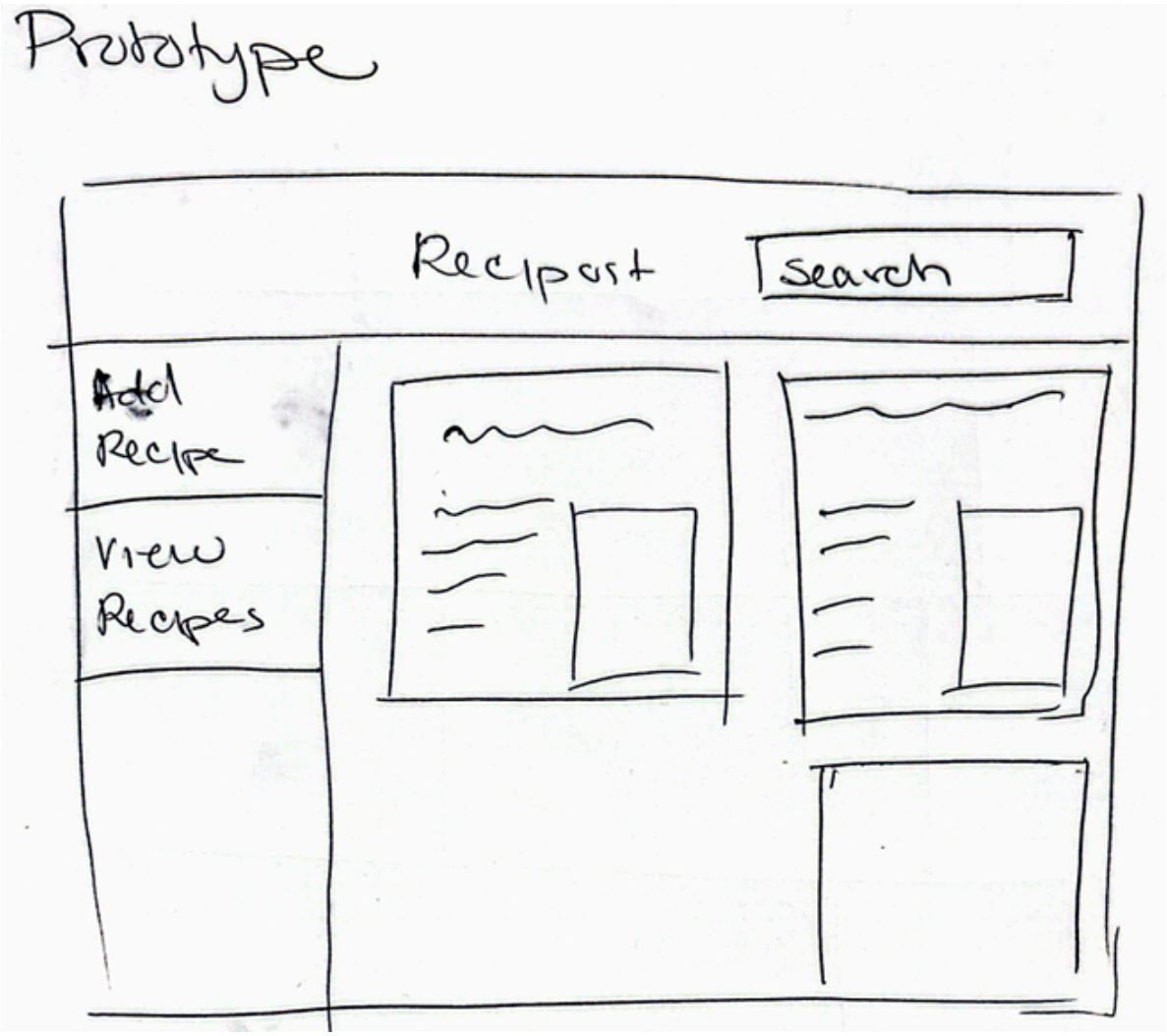
By following an iterative approach to the development process, we designed an application with an HTML structure, CSS styling and useful JavaScript elements paired with an integrated backend. The result was a scalable result that could be thoroughly tested to reduce the number of bugs within the program.

User Interface Design

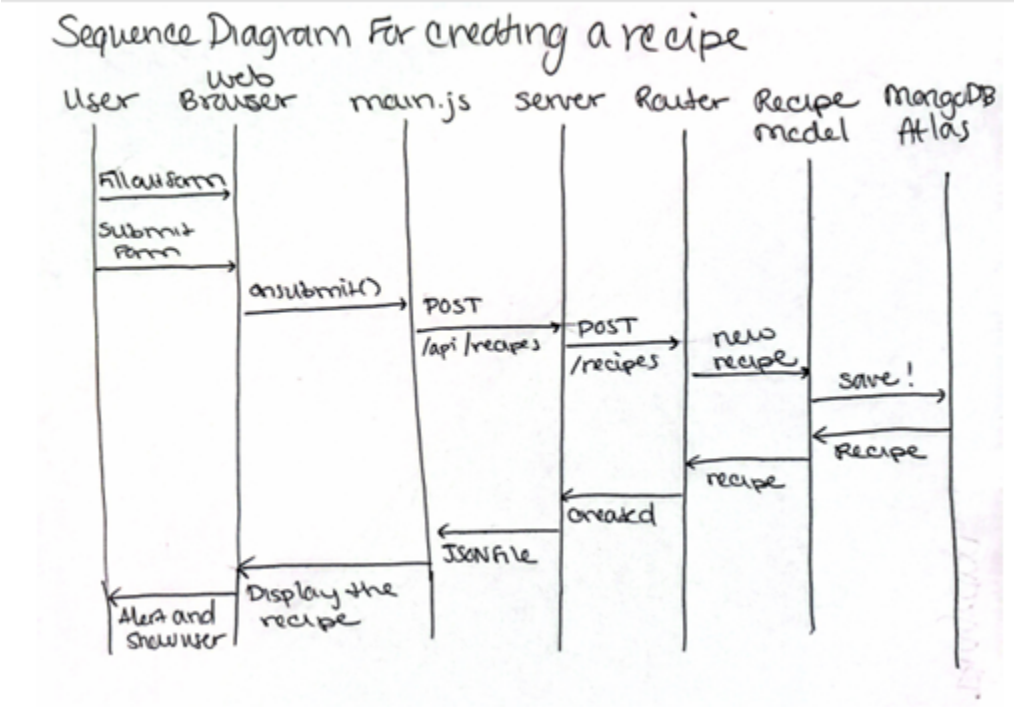
The user interface of the application was designed with users of all ages and backgrounds in mind. Simplicity and usability were the primary goals of achieving a clean and intuitive design. We understand the importance of understanding the points of view of the users interacting with this application. Home cooking is traditionally a hobby that involves physically writing things down. We wanted to create an environment to streamline that process.

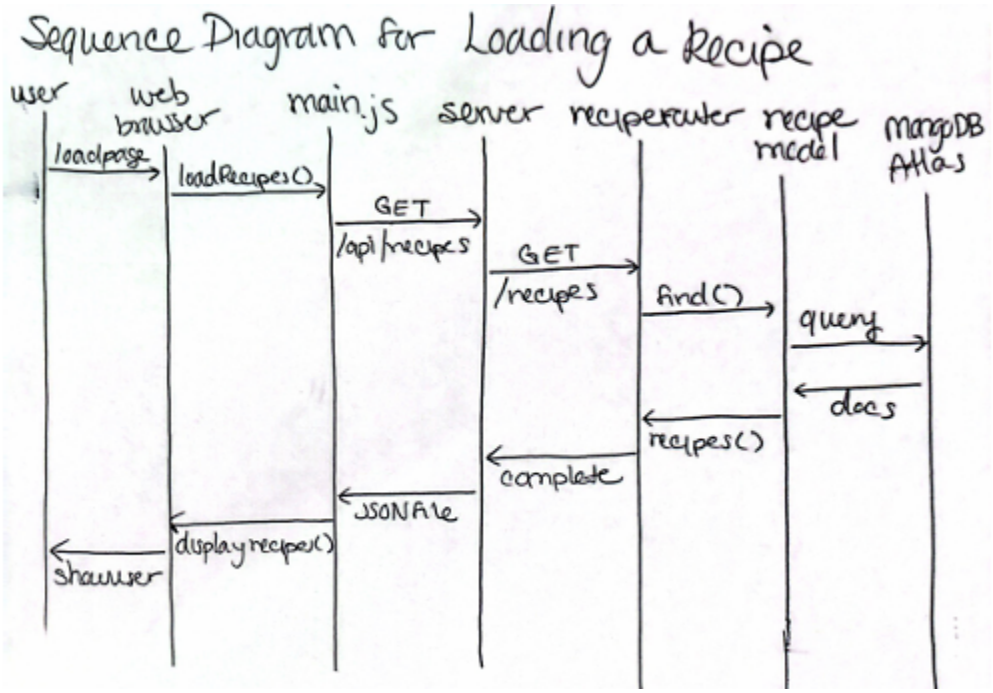
Our header section displays the title of the application with a clever tagline describing the purpose. The clean, simplistic styling creates a fresh environment that aesthetically matches the purpose. The intuitive color scheme emphasizes clarity of content and a user-friendly interface. The navigation bar allows users to easily navigate between adding recipes and viewing them. The body of the application shows a clean, organized form for the users to type in their information and include important steps and ingredients for their recipe. Helpful hints are labeled to assist users in successfully submitting the form. The layout is web responsive for all screens and does not compensate. The platform also provided interactive elements to help prompt the users and display messages as well. In the spirit of promoting accessibility, required fields were included as well as color contrast and proper labels to assist users who use tools to read web applications for them.

Prototype



System Components Summary





Conclusion

This project demonstrated our abilities to create a full-stack web application by designing, implementing, and deploying a functional version of Recipost that meets the project requirements. We applied concepts of modern web development technologies while following software engineering best practices.

We used prior knowledge from what we have learned throughout the semester to integrate the front-end and backend of the application while learning new tools for developing the database logic with MongoDB. The application was designed with a responsive design in mind, capable of handling errors and securing information from users.

Team collaboration was promoted throughout this project by dividing the work with regular meetings and daily communication. GitHub was used for codebase management and to assist with the collaborative process. In order to meet the requirements of the project, extensive documentation was created to better give context to future developers. Testing was performed to ensure a complete project that fulfilled the requirements promptly.

Overall, this project demonstrated the importance of planning, documenting, and creating something that is user-friendly and capable of handling complex tasks. When handling important and secure information, validation is essential in ensuring data is safe. Extensive testing and emphasis on error handling allow us to ensure we are delivering a user-friendly experience free of bugs.

Given more time would make way for feature enhancements such as uploading images, including ratings and comment sections, user authentication for security purposes, a recipe library, social media sharing, modifications to the search bar, and a way for users to print out their recipes.

This project demonstrated, in real time, the practical application of full-stack integration between database design and server logic. These skills provide a foundation of understanding for future web development in the professional world.

This project teaches the importance of balancing technical skills to demonstrate a creative solution. Throughout this project and this course, we learned how to better understand functionality, usability, and the feasibility of creating a web application. User security and experience remain at the forefront of delivering a complete, functional web application that can be maintained. As always, the web development process continued to reinforce the idea that building software is an iterative and agile process that builds on itself. Nothing goes perfectly on the first try, but with refactoring, debugging, and testing, a functional web application was the final result.

The skills learned in this course and our previous studies throughout university have proven to demonstrate our preparedness to take on software-related issues professionally in a career-driven world.