



## Capstone Project Phase B

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# AI-Driven Web App For Dietary Restricted Individuals

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[Project's Git Repository](#)

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## **Abstract**

In the digital era, managing dietary restrictions presents unique challenges and opportunities, particularly for individuals with specific dietary needs due to health conditions or personal choices. The "AI-Driven Web App for Dietary Restricted Individuals" addresses these challenges by utilizing the OpenAI 'GPT-4' API to enhance dietary management. This project aims to develop a web application that provides personalized recipe solutions and crucial information about ingredient suitability. Distinguished by its ability to cater to complex dietary restrictions, the application offers features for managing recipe collections and sharing recipes across social platforms. By harnessing the capabilities of the 'GPT-4' API, this web application simplifies meal preparation and educates users on safe dietary practices, thereby improving quality of life and promoting informed food choices. The intended users include individuals with allergies or dietary restrictions, caregivers, and professionals in the food and health industries. This project demonstrates the transformative potential of utilizing advanced language models in dietary management and underscores the need for innovative digital tools in nutrition and health.

## 1. Introduction

In the evolving landscape of nutrition and culinary arts, the digital era presents unique challenges and opportunities, especially for those managing dietary restrictions. Our project, "AI-Driven Web App for Dietary Restricted Individuals," is designed to tackle two prevalent issues that stand as significant barriers to achieving dietary health and wellness.

The first challenge is the difficulty in finding recipes that are specifically tailored to meet diverse dietary needs. This problem extends beyond individual concerns, impacting entire households where there is a need to balance dietary restrictions with the varied taste preferences and nutritional requirements of each family member. The scarcity of resources offering adaptable and inclusive culinary solutions creates a significant gap, making daily meal preparation a complex task for those juggling multiple dietary considerations.

Equally crucial is the challenge of understanding and identifying restricted or unrecommended ingredients, particularly for individuals with specific health conditions or dietary limitations. The gap in knowledge about which ingredients should be avoided can lead to unintentional health risks. This lack of information is a widespread issue, affecting not only individuals with diagnosed conditions but also those who might be unaware of their dietary sensitivities or the effects certain foods have on their overall health.

In the contemporary digital environment, applications such as MyFitnessPal and Yummly represent significant strides in dietary management. MyFitnessPal offers features including diet tracking and categorization of recipes under specific dietary labels. However, its capabilities are not yet sufficiently advanced to address the intricate needs of individuals with multiple, overlapping dietary restrictions. Similarly, Yummly, while lauded for its recipe recommendations, occasionally exhibits algorithmic inconsistencies, failing to consistently filter out allergens, even when dietary preferences are explicitly stated. This highlights the need for more sophisticated, AI-driven platforms that can adeptly navigate the complexities inherent in multifaceted dietary restrictions. Extending beyond applications, the broader digital landscape, while offering forums like the r/glutenfree subreddit for specific dietary discussions, falls short in addressing the broader spectrum of dietary restrictions. This limitation extends to social media groups, where knowledge is often anecdotal, based on personal experiences rather than expert guidance. Additionally, these platforms suffer from suboptimal search functionalities and delayed interactions, as responses to recipe requests depend on user availability and group moderation. The inadequacy of existing culinary websites in implementing intelligent search functionalities further compounds this challenge. Current platforms often fail to accurately interpret and filter search queries tailored to specific dietary exclusions. Collectively, these issues underscore the critical need for sophisticated digital tools that can adeptly navigate the complexities of dietary restrictions, providing precise, reliable, and timely solutions for diverse dietary requirements.

Our project seeks to address these challenges by leveraging the power of artificial intelligence. The goal is to develop a web application that not only provides personalized recipe solutions but also imparts essential knowledge about ingredient suitability. This initiative aims to transform dietary

management from a daunting task into an informed, manageable aspect of daily life, empowering individuals and families to make better, healthier food choices. In addition to providing recipes, our project offers enhanced functionality for users to manage their recipe collections. Users have the ability to save recipes to their personal profile, and they can also edit or delete these selections as needed. Another significant feature of our app is the capability to share recipes across social platforms, such as WhatsApp and Telegram. This functionality not only enriches the user experience but also fosters the sharing of dietary knowledge and within a broader social context. In response to the identified gaps within current digital solutions, our project introduces the "AI-Driven Web App for Dietary Restricted Individuals." This innovative platform is designed to transcend the limitations of existing applications and forums, with its core strength residing in sophisticated AI algorithms. These algorithms are adept at processing complex dietary needs and preferences, setting our solution apart in its capability and efficiency. Unlike conventional digital tools, our web application will offer a dynamic, user-centric approach, capable of generating personalized recipes that cater to multiple, overlapping dietary restrictions. By harnessing the power of AI, the application aims to provide accurate nutritional solutions. This approach not only addresses the need for precise dietary management but also elevates the standard of digital resources available to individuals with dietary restrictions, paving the way for a more inclusive and informed dietary landscape.

The potential stakeholders of our app are mainly individuals with allergies or dietary restrictions, parents of children with these health issues and health-conscious individuals who might benefit from the recipes offered by the app that align with their nutritional needs and goals. Another significant share of our users are caregivers and social hosts who are responsible for cooking for individuals with dietary restrictions in social gatherings or educational settings, ensuring everyone's dietary needs are respectfully accommodated. In addition to personal users, professional users might also benefit from our platform such as food industry product developers, who can leverage the app for insights into recipe innovation for allergy-sensitive markets. Also culinary professionals like pastry chefs, bakery owners, and chefs will find the app a valuable resource in allergy-friendly menu development, as well as clinical nutritionists working with patients who have allergies or dietary restrictions who can provide customized nutritional advice using our platform.

The project document is arranged as follows:

Section 2 expands on the description of our solution and its architecture, Section 3 describes and explains the development process of our website, including tools and technologies we used, integration with clients and decisions taken during this period. Section 4 expands on the challenges we faced during the development process, as well as the solutions we have used to mitigate these challenges. In section 5 the testing process of our system is presented, as well as the actual results of our tests after development. Section 6 expands on the user guide of our solution, and presents a usage guide of each part of our application. Section 7 presents the maintenance guide of our system for further development of our system, and section 8 expands on the outcomes and conclusions of our projects, including a description of our achievements, lessons learned during the development time and how we measured success after the project is done.

## 2. Related Work

## **2.1. Food Allergies**

A food allergy is characterized as an adverse immunological reaction to food proteins, a condition that prevalently affects approximately 5% of children and 3-4% of adults in Western nations. [4] “Food allergies are common, result in both acute and chronic disease, might be increasing in prevalence, affect quality of life, and can be severe and potentially fatal.” [4] These allergic responses are classified into two types: IgE-mediated and non-IgE mediated. IgE-mediated allergies manifest as immediate reactions upon exposure to the allergen, which might be life threatening, whereas non-IgE mediated allergies are typically associated with gastrointestinal disorders. Effective management of food allergies necessitates the avoidance of known allergens and preparedness for emergent reactions. It is imperative that patients carefully examine food labels, be aware of the potential cross-contamination with allergens during food preparation, and always carry emergency medications, such as epinephrine auto-injectors.

## **2.2. Dietary Restricted Individuals**

Individuals adhering to dietary restrictions, such as vegans, vegetarians, diabetics, and ketogenic dieters, face challenges in finding recipes that align with their nutritional needs. Vegans and vegetarians require alternatives that meet their protein and vitamin requirements, while diabetics and those on ketogenic diets need meals that adhere to specific carbohydrate and fat guidelines. The difficulty in locating suitable recipes is compounded by the widespread presence of incompatible ingredients in mainstream food products and the limited availability of tailored options in conventional culinary resources. Importantly, individuals having allergies, as well as dietary limitations, are dealing with greater difficulties when finding suitable recipes since their permitted ingredient list is limited. This scarcity necessitates a vigilant approach to dietary planning, increasing the time and effort required for meal preparation and underscoring the need for more comprehensive, accessible culinary solutions for these populations.

## **2.3. Nutritional Solutions And AI**

Artificial intelligence is anticipated to revolutionize diet planning through the automated and efficient application of professional nutritional knowledge. [3] Research has demonstrated that AI can surpass human nutritionists in devising diet plans that are superior in nutritional adequacy. [3] Consequently, AI could play a pivotal role in developing dietary solutions for individuals with food allergies or nutritional limitations. Populations subjected to dietary restrictions often suffer from inadequate nutrition, as the elimination of critical food items can result in deficiencies in essential nutrients, such as protein, vitamins, and minerals, as well as their overall energy levels. [5]

## **2.4. Technologies**

### **2.4.1. Artificial intelligence API**

An "AI API" or "Artificial Intelligence Application Programming Interface" provides a set of protocols, rules, and tools that allow developers to integrate artificial intelligence functionalities into their software without building AI algorithms from scratch. These APIs facilitate the inclusion of advanced data processing and machine learning capabilities, speeding up development and reducing costs. By using AI APIs, developers can access pre-built AI models, making it easier to implement complex AI

systems.

[2]

ChatGPT is an advanced language generation model developed by OpenAI, based on the Generative Pre-trained Transformer (GPT) architecture. The ChatGPT API allows developers to seamlessly incorporate this language model into their applications, thereby enhancing conversational AI capabilities. This API enables applications to provide interactive user experiences and dynamic content creation, effectively leveraging the power of sophisticated conversational AI.

OpenAI's 'GPT-4' API provided us with access to the latest Generative Pre-trained Transformer model, GPT-4, which excels in generating human-like text based on provided inputs. This advanced language model is designed for complex text synthesis and natural language understanding, making it ideal for creating recipes based on user input and preferences. By leveraging this API, we avoided the need to develop an AI model for recipes ourselves. However, effectively using the API requires precise prompt engineering. With the right inputs, the model can reliably generate accurate and safe recipes that align with individual dietary needs, demonstrating the importance of crafting well-defined prompts when utilizing AI for such applications.

#### **2.4.2. DataBase**

In the rapidly evolving digital ecosystem, the exponential growth of the Internet and the proliferation of data sources have substantially challenged traditional data management paradigms, particularly impacting storage capacity and data usability. Traditional Relational Database Management Systems (RDBMS) struggle with the volume and complexity of modern data, which has led to the rise of NoSQL systems, or "Key-Value Store" systems.[1] These are designed for massive scalability and flexible data models that support quick application development and deployment.

NoSQL databases like MongoDB replace traditional table-based structures with document-oriented or key-value pair models. This adaptation better handles semi-structured data and improves the performance and scalability of web applications across distributed networks. They provide essential "on-demand" scalability for managing large datasets and fluctuating workloads.

Moreover, NoSQL systems streamline application rollouts by simplifying schema and database management in a rapidly changing data environment. This efficiency is why many modern enterprises increasingly adopt NoSQL solutions. As we incorporated a database into our project, it's crucial to leverage NoSQL's capabilities to manage large volumes of semi-structured data efficiently. This shift towards NoSQL is not just a trend but a necessary evolution to meet the demands of today's data management challenges [1].

MongoDB is a leading NoSQL database that uses JSON-like documents with dynamic schemas instead of traditional tables. We chose MongoDB for its flexibility, scalability, performance, and ease of deployment that makes it ideal for handling large volumes of data and complex structures, commonly required in big data and

real-time applications. As a cloud-based service, MongoDB offers the advantage of being accessible from anywhere, which is crucial for modern web applications. Additionally, its popularity has led to the development of libraries like Mongoose, which we used alongside Node.js to enforce schema validation, preventing the addition of documents that don't align with the database structure. This convenient feature ensured consistency in our data. We used MongoDB to manage various aspects of our application, including user profiles, recipes, family members, patients, and menus.

#### **2.4.3. Web Development**

In our project, we utilized a set of well-established web development tools to create a scalable and efficient web application. React was chosen for its robust single-page application (SPA) architecture, which allows for dynamic rendering and efficient updates of individual components, ensuring a smooth user experience. For styling, we incorporated Tailwind CSS, a utility-first framework that simplifies the design process by enabling rapid development of custom user interfaces without extensive CSS coding. On the server side, we implemented Node.js, which allows for consistent use of JavaScript across both the client and server. This uniformity simplifies development and enhances productivity. Node.js is also known for its ability to handle real-time data and high-traffic environments efficiently, making it ideal for our application's needs. For development, we used Visual Studio Code (VS Code), a popular code editor with a wide range of extensions and debugging tools that helped streamline our workflow and improve collaboration among team members. Together, these tools provided a solid foundation for building a performant and scalable web application.

### **3. Solution Description**

In continuation of phase A of our capstone project "AI-Driven Web App for Dietary Restricted Individuals," we have developed a comprehensive solution named "EatExact." This web application addresses the critical challenges identified in our initial research by providing a personalized platform for users with specific dietary needs. EatExact leverages advanced artificial intelligence to generate customized recipes that cater to individual dietary restrictions, preferences, and health conditions. The application is designed to be user-friendly and intuitive, offering a seamless experience for various user roles, including individuals managing their own diets, professional chefs seeking to create inclusive menus, and dietitians tailoring meal plans for their patients.

EatExact's core functionality allows users to input their dietary restrictions, allergens to avoid, preferred ingredients, and lifestyle choices. The AI then generates recipes that are not only compliant with these requirements but also nutritious and appealing. For individuals and families, the app simplifies meal planning by accommodating multiple dietary considerations simultaneously. Professional chefs can use the platform to innovate and expand their menus, ensuring they meet the needs of a diverse clientele. Dietitians benefit from the app's ability to personalize recipes based on detailed patient information, including medical conditions and nutritional goals. EatExact notably enhances social connectivity allowing users to save, edit, and

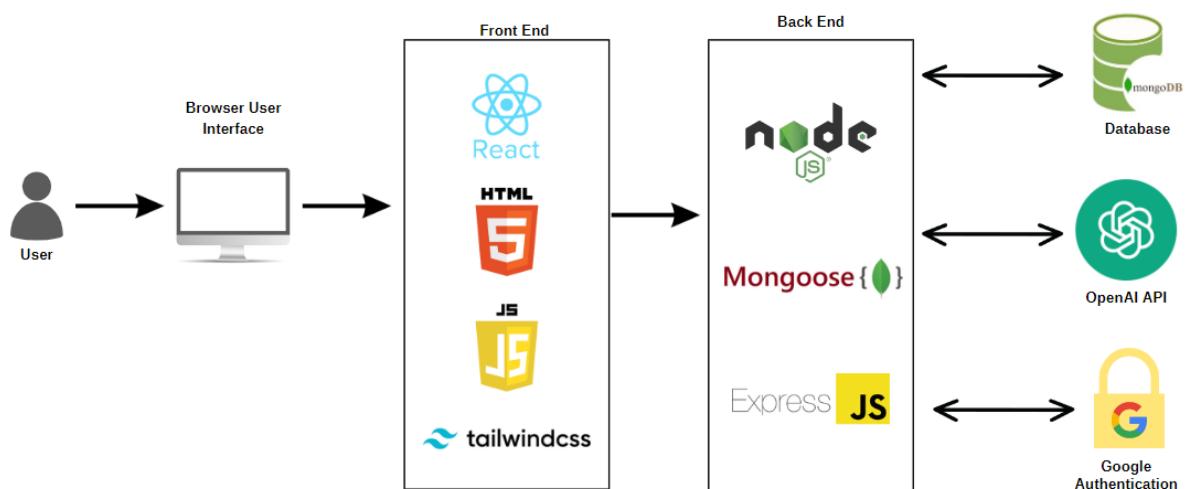
share recipes across various platforms, thereby fostering a community around shared dietary experiences and knowledge.

By integrating artificial intelligence with an accessible web interface, EatExact transforms the complexities of dietary management into a manageable and informed process. The application stands out by its ability to handle complex and overlapping dietary restrictions, a gap not adequately addressed by existing solutions. It empowers users to make better food choices, promotes healthful eating habits, and supports professionals in the food and health industries in delivering personalized services. EatExact exemplifies the potential of advanced technology in enhancing quality of life for individuals with dietary restrictions, offering a practical and innovative tool that aligns with the goals outlined in the initial phase of our project.

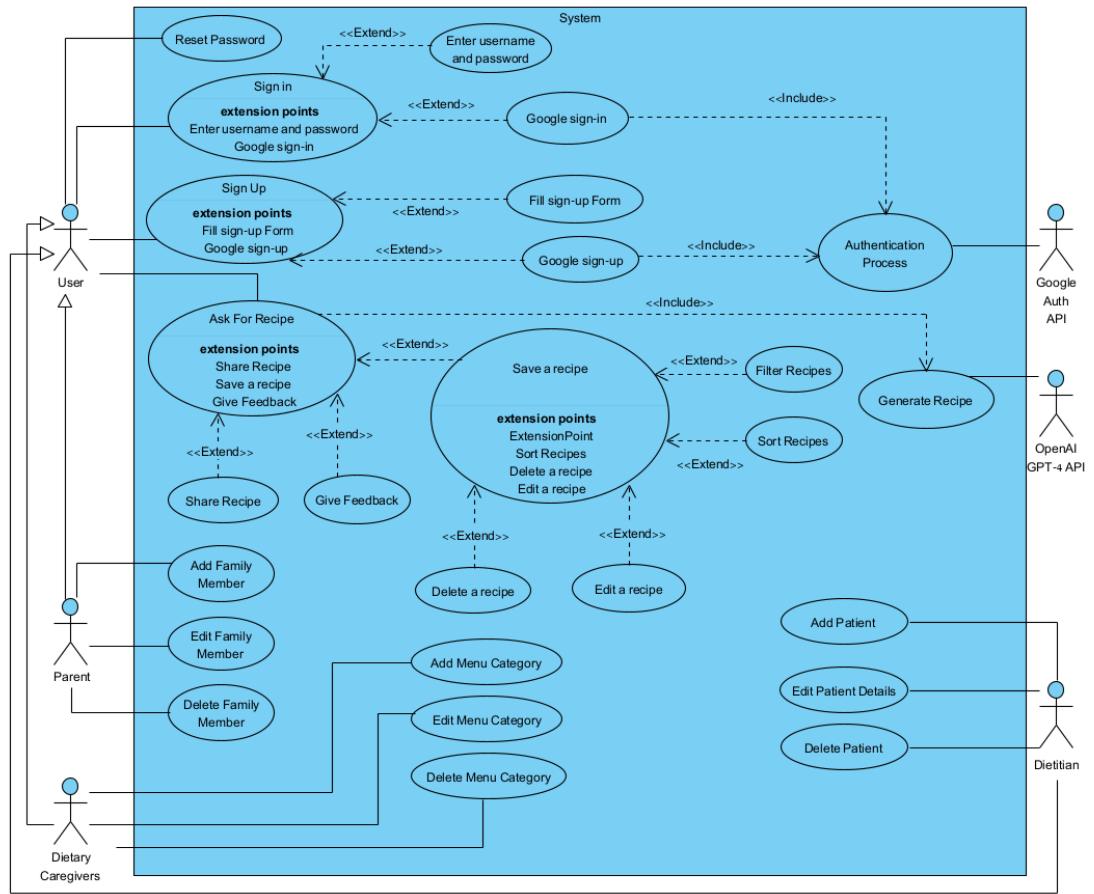
### 3.1. System Architecture Diagram

We implemented a client-server architecture where the front-end and back-end are distinct but work seamlessly together to deliver a responsive and scalable web application. On the front-end, React powers the dynamic single-page application (SPA), ensuring a smooth user experience by updating only necessary components. HTML and JavaScript provide the structure and functionality of the user interface, while Tailwind CSS accelerates the design process with minimal coding for custom styles.

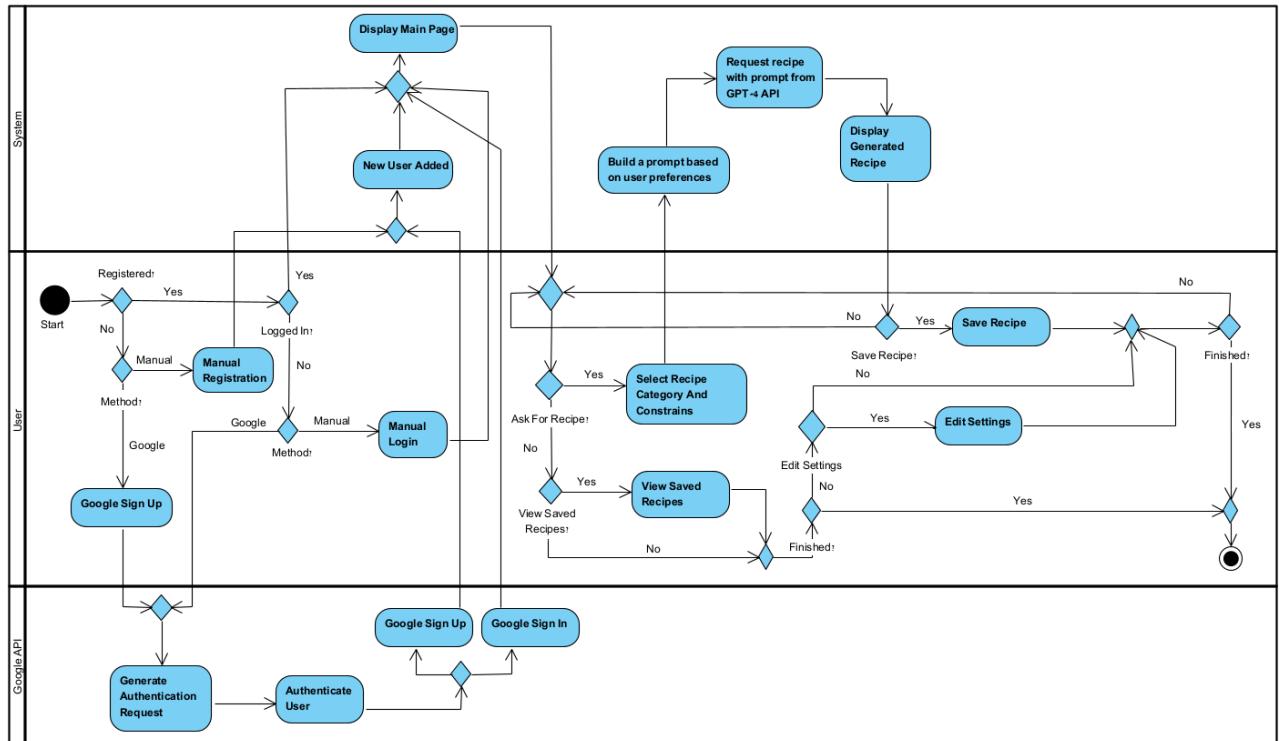
On the back-end, Node.js serves as the runtime environment, handling server-side logic and efficiently processing incoming client requests. Express.js operates as a lightweight web framework that manages routing and HTTP requests between the client and server. Mongoose is used to interface with MongoDB, a flexible NoSQL database that stores user data, recipes, and other relevant information, ensuring data validation and consistency. The OpenAI API is integrated to process user inputs and generate tailored recipes based on dietary restrictions. These technologies were selected for their compatibility and contribution to overall system performance, allowing data to flow seamlessly between the client and server, ensuring fast and reliable interactions for users with complex dietary needs.



### 3.2. Use-Case Diagram



### 3.3. Activity Diagram



## **4. Development Process**

During the development process of "EatExact," we leveraged the research and foundational groundwork laid out in phase A of our project. Having already selected our technological stack, which includes Node.js for server-side operations, React for the client-side interface, and MongoDB for database management, we were well-prepared to commence building the solution. The predefined functional and non-functional requirements from Phase A served as a roadmap, clearly outlining the features that needed to be developed and guiding our priorities throughout the process.

Embracing the Agile methodology, our development process was iterative and flexible, allowing us to adapt to feedback and evolving project needs efficiently. We collaborated closely with our supervisor, who acted as our client, to ensure that the application met the desired objectives and user expectations. Regular feedback sessions were integral to our workflow, providing valuable insights that shaped subsequent development cycles.

We strategically focused on specific user roles sequentially to manage complexity and ensure a high-quality outcome. We began by developing the individual user role, which is divided into three sub-types: 'Just Me', where an individual manages their own diet; 'Family', where one manages both their own and their family's dietary preferences; and 'Just Kids', which focuses solely on managing children's nutrition within the app. These subtypes were developed in parallel to maintain consistency and ensure seamless integration among the individual user functionalities. After completing the individual user functionalities, we turned our attention to developing the professional user role, followed by the dietitian user role. Throughout the whole development process, we simultaneously focused on building an intuitive user interface and ensuring that our design was responsive across various devices. We implemented best practices in React to fetch data from the backend efficiently, which enhanced the performance and reliability of our application. Additionally, we invested time in learning how to integrate the ChatGPT API by following guides, allowing us to effectively implement AI-driven features. At each stage of development, we incorporated feedback from our supervisor to refine and polish the product before moving on to the next phase.

Throughout the development process, we remained adaptable to changing circumstances and constraints. Recognizing time limitations, we made the decision to modify certain initial requirements to allocate resources more effectively and focus on implementing core features that would provide the greatest benefit to our users. For instance, while we implemented registration and login functionalities using email and password, we decided to exclude the Google authentication feature. This choice allowed us to ensure secure access to the application without the additional complexity of integrating third-party authentication services. Similarly, we postponed the implementation of a sorting feature for saved recipes, which would have allowed users to organize them by various criteria. Instead, we concentrated on essential functionalities and provided filtering by categories for saved recipes. These decisions enabled us to deliver a functional product within our timeline while still offering users effective ways to manage their accounts and saved recipes.

Several important decisions were made during the development process to enhance the user experience and optimize our workflow. Initially, we planned to have the edit button on the generated response page, enabling users to edit any recipe immediately after generation. However, we realized that users might edit a response they did not intend to save, leading to potential confusion. To address this, we moved the edit functionality exclusively to the saved recipes page, ensuring that only saved recipes could be edited. This adjustment streamlined the user interaction and maintained data integrity.

When designing the main page, we initially followed the prototype from Phase A. However, we encountered challenges in making this user interface responsive across all devices. To ensure a consistent and comfortable experience on various screen sizes, we decided to redesign the layout. In the process, we refactored the code to be more efficient by implementing a reusable React component. This approach made the code much more efficient, modular, and shorter, enhancing maintainability and scalability. This change allowed us to create a more adaptable interface that meets the needs of all users, regardless of their device.

Our initial requirements specified that users would type their own prompts to request recipes with various constraints. We realized that this approach could lead to poor-quality responses due to ineffective or unclear prompts from users. To enhance the quality and consistency of the generated recipes, we shifted to providing users with predefined categories, ingredients and allergens to avoid, and lifestyle considerations. This structured input method ensures that users receive high-quality, tailored recipes without the need for advanced prompt crafting skills. After making this decision, we displayed the prompt used to generate the recipe on the response page in the early stages. Upon further consideration, we decided to replace this with a general sentence to maintain the privacy of our prompt engineering strategies. By keeping the specific prompts confidential, we protect the unique value proposition of our application, which relies on carefully crafted prompts to generate high-quality recipes.

Furthermore, we initially planned for users to set their account type within the settings page. During development, we recognized that it would be more intuitive for users to define their type immediately after registration through a profile setup page. To simplify the user experience, we decided that the account type could not be changed after this initial setup. Additionally, we refined the user classifications for clarity and simplicity, consolidating them from "Dietary Restricted Individual," "Parent," "Dietary Caregiver," and "Dietitian" to "Individual," "Professional," and "Dietitian."

Lastly, in our original requirements, we specified that dietitians could filter patients by age, gender, and dietary restrictions. Upon reflection, we realized that implementing a search functionality would be more beneficial, especially when managing a large number of patients. This change allows dietitians to quickly find and access patient information, enhancing the usability and efficiency of the app for nutritionists using the app.

By making strategic decisions throughout the development process, we were able to adapt to challenges, optimize our resources, and focus on delivering a high-quality, user-friendly application. The combination of well-defined requirements, a robust technological foundation, iterative development, and continuous client engagement enabled us to develop a comprehensive and scalable solution. These choices ensured that "EatExact" effectively meets the core needs of our target audience while staying within our project constraints. Ultimately, "EatExact" stands as a testament to our concerted efforts, addressing the intricate needs of individuals with dietary restrictions and fulfilling the objectives outlined in our project's initial phase.

## 5. Challenges

During Phase B of our project, we encountered several challenges that required thoughtful solutions to enhance the quality and functionality of "EatExact." One significant challenge was refining the AI-generated recipes to ensure they were appropriate and met user expectations. Initially, our prompts to the AI sometimes resulted in unreasonable recipes—for example, when a user's favorite ingredient was banana and they requested a soup recipe, the AI generated a banana soup, which is not a common or appealing dish. To address this, we improved our prompt by adding the clause: "If relevant and suitable for the recipe type, include some of the favorite ingredients. If these ingredients are not appropriate for the recipe, please omit them." This adjustment led to more sensible and high-quality recipe suggestions.

Another challenge involved the formatting of the AI's responses. Initially, the recipes included special formatting like asterisks for titles, which did not render well in our application's user interface. To resolve this, we modified the prompt to instruct the AI to format the recipes using proper HTML tags, specifying the use of `<h1>`, `<h2>`, `<ul>`, and `<ol>` tags, and to avoid unnecessary HTML elements. This change allowed us to display the recipes clearly and consistently across different devices.

We also faced difficulties in generating appropriate recipes for each user role—individual, professional, and dietitian. We realized that each role required a tailored prompt to include specific information relevant to the user's context. For instance, for individual users, especially when generating recipes for children, we included phrases like "The recipe should be nutritious, delicious, easy to prepare, and age-appropriate." For dietitians, we added a request to "Include nutritional information per serving (calories, protein, fat, carbohydrates)." By customizing the prompts for each user type, we improved the relevance and usefulness of the AI-generated recipes.

Throughout this process, we iteratively refined our prompts, as evidenced by the multiple versions we developed for the individual user role. Each iteration incorporated feedback and testing results, leading to a final prompt that effectively communicated our requirements to the AI. These challenges and their solutions significantly contributed to the overall quality and success of "EatExact," ensuring that the application meets the diverse needs of its users.

We also encountered challenges in implementing real-time updates in our React application to ensure that user interactions were immediately reflected on the screen. In React, state updates are asynchronous, and changes to state variables cause the component to re-render. Initially, we faced

issues where selecting recipe categories, ingredients to avoid, and lifestyle choices did not update the UI instantly upon user interaction. To solve this problem, we learned to effectively use React's useState hook for managing component state and the useEffect hook for handling side effects and synchronizing state updates with UI rendering. By utilizing these hooks, we ensured that user selections were captured and displayed in real time, significantly enhancing the responsiveness and overall user experience of our application.

Another challenge we had was dealing with repetitive code within our application. We aimed to provide a consistent and uniform user interface to enhance the user experience, but it often resulted in similar design patterns being implemented across various parts of the app, which led to a significant amount of code duplication, making the codebase less readable and more cumbersome to manage. To address this problem, we leveraged React's component-based architecture to create reusable components for the repeating elements. For example, we abstracted the selection sections on the dashboard page—such as the category selection, ingredients to avoid selection, and lifestyle selection—into reusable components. We also standardized the buttons used in each section, which are utilized on the saved recipes page as well. By encapsulating these common elements into modular components, we significantly reduced code duplication, enhanced readability, and improved maintainability of our codebase. This approach not only streamlined the development process but also ensured consistency across the application, making it easier to implement updates and new features in the future.

## 6. Testing Process

Login			
#	Test Subject	Expected Result	Actual Result
1	Username is empty	“Enter username” message on the screen	“please fill out this field” pop-up message on the email field
2	Empty password for username	“Wrong password” message on the screen	“please fill out this field” pop-up message on the password field
3	incorrect password for username	“Wrong password” message on the screen	“Incorrect password” message on the screen
4	Username does not exist	“Username does not exist in the system” message on the screen	“Incorrect email” message on the screen
5	Google sign-in	Display main page	N/A - Not implemented

Registration			
#	Test Subject	Expected Result	Actual Result
1	Firstname, last name, email or password fields are empty	“Mandatory field” message on the screen	“please fill out this field” pop-up message on each field
2	Enter email address with no “@” to email field	“Include ‘@’ to email” message on the screen	“Please include an ‘@’ in the email address. ‘testgmail.com’ is missing an ‘@’.” pop-up message on email field
3	Enter email address that is already in use by another user	“Email already in use” message on the screen	“Email already in use” message on the screen
4	Enter weak password to password field	“Password is not strong enough” message on the screen	“Password not strong enough” message on the screen
5	Google sign-up	Display main page	N/A - Not implemented

Recipe Response			
#	Test Subject	Expected Result	Actual Result
1	Click on “Generate Recipe” button on the main page without selecting recipe category	“Please choose recipe category” message on the screen	“Forgot to Choose Something?” message below the “Generate Recipe” button
2	Click on heart icon near the generated recipe	Heart icon is colored and recipe is added to “Saved Recipes” page	Heart icon is filled in red and recipe is added to “Saved Recipes” page
3	Second click on heart icon near the generated recipe	Color of heart icon is removed and recipe is removed from “Saved Recipes” page	Color of heart icon is removed and it is outlined and recipe is removed from “Saved Recipes” page
4	Click on “WhatsApp Share” icon near the generated recipe	A new web tab is opened with WhatsApp page	a new WhatsApp web tab is opened, user allows sharing with WhatsApp web, user selects contact person to share recipe.
5	Click on “Telegram Share” icon near the generated recipe	A new web tab is opened with Telegram page	a new Telegram web tab is opened, user allows sharing with Telegram web, user

			selects contact person to share recipe.
6	Click on pencil icon near a saved recipe on the “Saved Recipes” page	The edited recipe is updated	After editing and clicking “Save Changes” The edited recipe is updated.

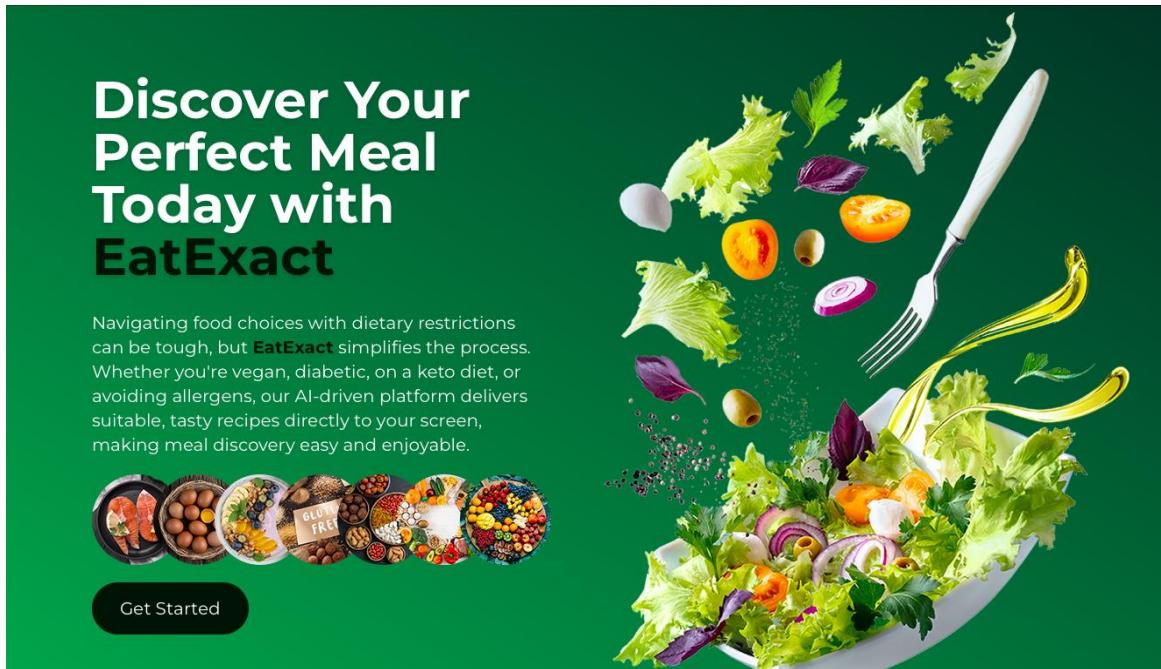
User Preferences & Settings				
#	Assumption	Test Subject	Expected Result	Actual Result
1	Logged in as “Individual”	Click on “Add Family Member”, type its name and details and then press enter	The typed in name is added to list of children	The typed in name and details are added to list of children
2		Click on “Edit Family Member”, change its name, age, dietary restrictions, liked ingredients or unliked ingredients and press enter	The child’s name is updated	The family member is updated with the new details inserted.
3		Click on “Delete Family Member”	The child’s name is removed	Family member’s saved recipes are deleted and then the family member is removed
4	Logged in as “Professional”	Click on “Add Menu”, type menu name and press enter	The typed in menu category is added to list of categories	The added menu is added to the list of menus
5		Click on “Edit Menu”, change its name and press enter	The menu category’s name is updated	recipes saved under this menu are deleted and then the menu is removed
6		Click on “Delete Menu”	The menu category’s name is removed	menu’s saved recipes are deleted and then the menu is removed
7	Logged in as “Dietitian”	Click on “Add Patient”, type patient’s name and details and press enter	The typed in name is added to list of patients	The typed in name and details are added to list of patients

8		Click on “Edit Patient Details”, change any detail and press enter	The patient’s details are updated	The family member is updated with the new details inserted.
9		Click on “Delete Patient”	The patient’s name is removed	patient’s saved recipes are deleted and then the patient is removed

## 7. User Guide

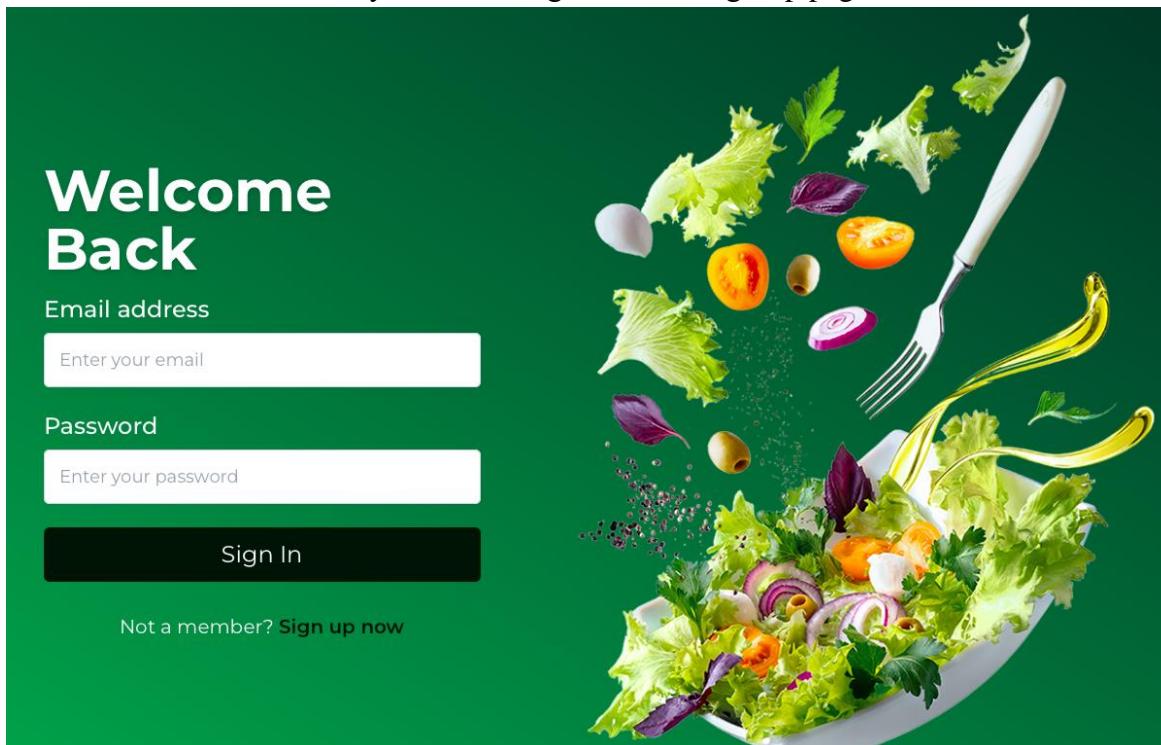
### 7.1. Landing page

This is the main page displayed when entering the website when a user is not logged in yet. When clicking the “Get Started” button you’ll be navigated to the login page.



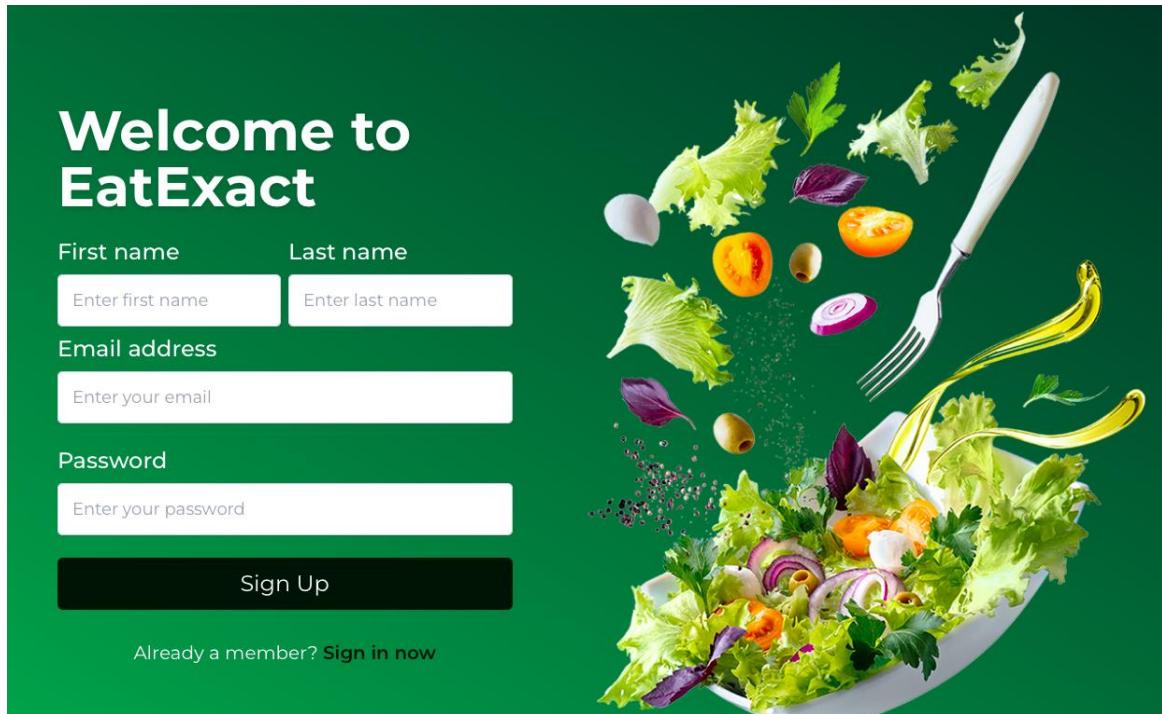
### 7.2. Login page

Enter a registered email and password and click “Sign in” and you’ll get logged in, and then redirected to the homepage. If you haven’t signed-up yet, click “Sign up now” and you’ll be navigated to the sign-up page.



### 7.3. Sign-up page

Enter your first name, last name, email address and a desired password on the input fields. make sure the password has at least 8 characters, a lowercase, an uppercase, a number and a special character. click “**Sign up**” and you’ll be registered to the website and redirected to the profile setting page.



## 7.4. Profile Setup

On this page a user can select which account type to set.

Account Type	Description	Action
Individual Use	Ideal for individuals who want to manage their own and their family's dietary restrictions, discovering delicious, AI-generated recipes tailored to their unique needs.	Select Individual Use
Professional Use	Perfect for culinary professionals seeking to create innovative recipes and manage diverse menus, such as vegan or gluten-free, to cater to clients with specific dietary requirements.	Select Professional Use
Dietitian	Tailored for dietitians focused on creating personalized meal plans that accommodate diverse dietary restrictions and effectively manage their patients' unique dietary needs.	Select Dietitian

### 7.4.1. Selecting “Individual Use”

Once clicking on “**Select Individual Use**”, the following page is displayed and there’s a selection between 3 paths:

**Tailored Just for You**

Manage your own dietary preferences and needs with ease. Create personalized recipes that cater to your taste and dietary restrictions, ensuring every meal is just the way you like it.

**Care for Yourself and Your Family**

Balance your own tastes while managing your children's dietary needs. Add their favorite ingredients and avoid allergens to create recipes the whole family will enjoy.

**Focused on Your Kids**

Create healthy, fun, and allergen-free meals tailored specifically to your children's preferences. Focus only on what matters most: keeping your kids happy and healthy.

**7.4.1.1. Selecting “Tailored Just for You”**

On this path, a user can manage its own recipes and dietary restrictions as an individual having difficulties managing its diet. Enter your age, dietary restrictions, preferred ingredients and ingredients to avoid, and then click “Let’s get started!” and you’ll be navigated to the home dashboard.

**Let's Personalize Your Experience!**

To ensure that every recipe is tailored exactly to your needs, please provide us with a few key details. These will be saved in your profile, so you won’t need to re-enter them every time you generate new recipes:

Age

Dietary Restrictions

Preferred Ingredients

Avoid These Ingredients

**Let's get started!****7.4.1.2. Selecting “Care for Yourself and Your Family”**

On this path, a user can manage its own recipes and dietary restrictions as well as its family member’s nutritional needs. First, enter details about yourself: your age, dietary restrictions, preferred ingredients and

ingredients to avoid, and then a “plus” button will appear. Click the “plus” button, and a new form is displayed. Enter details about the family member: name, age, dietary restrictions, preferred ingredients and ingredients to avoid. Each family member can be removed from the list of family members if needed by clicking the red “trash” button. To add more family members, click the “plus” button and fill out the form again until you reach the desirable amount of family members to manage in the system. When you’re finished adding family members, click “**Let’s get started!**” and you’ll be navigated to the home dashboard.

EatExact

Generate Recipe Saved Recipes Settings Log out

**Tell Us About Your Family's Preferences**

To help us generate the best recipes for you and your family, please provide details about each family member.

We'll consider their age, dietary restrictions, favorite ingredients, and ingredients they'd prefer to avoid.

With this information, every recipe suggestion will be tailored to meet the unique needs and tastes of each person, making mealtime easier and more enjoyable!

Didi Harari

Name

Age

67

Dietary Restrictions

nut allergy

Preferred Ingredients

pistachio

Avoid These Ingredients

banana

+

Didi Harari

Name

Noya

Age

15

Dietary Restrictions

nuts allergy

Preferred Ingredients

vanila

Avoid These Ingredients

garlic

+ ✖

**Let's get started!**

#### 7.4.1.3. Selecting “Focused on Your Kids”

On this path, a user can manage only its family member’s nutritional needs, without the need to keep information about itself. First, click on the “plus” button. Enter details about the first family member: name, age, dietary restrictions, preferred ingredients and ingredients to avoid. Each family member can be removed from the list of family members if needed by clicking the red “trash” button. To add more family members, click the “plus” button and fill out the form again until you reach the desirable amount of family members to manage in the system. When you’re finished adding family members, click “Let’s get started!” and you’ll be navigated to the home dashboard

The screenshot shows the 'Tell Us About Your Kids' Preferences' page. At the top, there's a green header bar with the EatExact logo and navigation links: Generate Recipe, Saved Recipes, Settings, and Log out. Below the header, there's a back arrow icon. The main title is 'Tell Us About Your Kids' Preferences'. A descriptive text explains that the app will generate personalized recipes tailored to each child's needs. There are five input fields for 'Family member 1': 'Name' (with a placeholder box), 'Age' (with a dropdown menu), 'Dietary Restrictions' (with a placeholder box), 'Preferred Ingredients' (with a placeholder box), and 'Avoid These Ingredients' (with a placeholder box). Below these fields are two circular buttons: a green one with a white plus sign and a red one with a white trash bin symbol. At the bottom is a green 'Let's get started!' button.

EatExact

Generate Recipe Saved Recipes Settings Log out

Tell Us About Your Kids' Preferences

To make mealtime easier and more enjoyable for your children, we'll help you generate personalized recipes tailored just for them! Please provide us with some important details about each of your kids, such as their age, any dietary restrictions, favorite ingredients, and ingredients they don't like. With this information, you'll never have to re-enter their preferences again — every recipe will be automatically customized to fit their needs and tastes.

+ ✖

Family member 1

Name

Age

Dietary Restrictions

Preferred Ingredients

Avoid These Ingredients

Let's get started!

#### 7.4.2. Selecting “Professional Use”

Once clicking on “Select Professional Use”, you can manage menus that have special dietary restrictions. Click the “plus” button in order to add a new menu. In the displayed form, enter the menu name. Each menu can be removed from the list of menus if needed by clicking the red “trash” button. To add more menus, click the “plus” button and fill out the form again until you reach the

desirable amount of menus to manage in the system. When you're finished adding menus, click “**Let's get started!**” and you'll be navigated to the home dashboard

The screenshot shows a software interface with a green header bar. On the left is the 'EatExact' logo. On the right are four buttons: 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below the header is a back arrow icon. The main content area has a title 'Create Personalized Menus for Your Customers' in bold green text. Below the title is a paragraph of text: 'As a professional chef, you know that one size doesn't fit all when it comes to dining. By simply selecting the types of menus you want to offer—whether it's gluten-free, dairy-free, or other dietary options—we'll help you craft personalized dishes that meet your guests' specific needs.' Another paragraph follows: 'This streamlined approach ensures that your restaurant provides delicious and inclusive options, giving every guest a memorable dining experience, no matter their dietary requirements.' At the bottom of the page is a large green circular button with a white plus sign inside.

This screenshot is similar to the previous one but includes a new section at the bottom. It features a form with two input fields: 'Menu 1' and 'Menu Name', both containing placeholder text 'Enter menu name...'. Below the form is a large empty rectangular area. At the top of this area are two small circular icons: a green one with a white plus sign and a red one with a white trash can symbol. To the right of these icons is a green button with the text 'Let's get started!' in white. The rest of the interface is identical to the first screenshot, including the header and the explanatory text above the button.

#### 7.4.3. Selecting “Dietitian Use”

Once clicking on “**Select Dietitian**”, your account is set to dietitian, and on the next meeting with a patient, you'll be able to add new patients as displayed on the dashboard page once the profile has been set. You can read more about adding patients on chapter 7.9.5.

It looks like you haven't added any patients yet!

Start managing your clients' dietary needs and preferences by adding your first patient now.

Navigate to Settings to add patients and begin creating personalized meal plans today!

Add Patients in Settings

## 7.5. Generating Recipes & Dashboard Page

The dashboard is the main page of the application. It has a slight difference in appearance on each account type, but similar functionality.

### 7.5.1. Generating a recipe for 'Just Me' account type

Select a recipe category from the suggested categories listed under "**Let's pick a category!**" section. alternatively, you can type the recipe category on the input field on the bottom part of the section. *This field is mandatory.* Next, select which allergens and ingredients to avoid from the suggested allergens and ingredients listed under "**Allergens and ingredients to avoid**" section. If not listed, you can also type the allergen or ingredient name on the input field on the bottom part of the section. Lastly, you can pick any lifestyle you're holding by selecting a lifestyle from the suggested lifestyles listed under "**Specific lifestyle?**" section. If not listed, you can also type the lifestyle name on the input field on the bottom part of the section. Finally, click "**Generate Recipe**" in order to get the desired recipe according to your likings. Please note that all preferences mentioned are taken into consideration.

EatExact
 Generate Recipe   Saved Recipes   Settings   Log out

**Let's pick a category!**

Appetizers	Salads	Main Courses	Side dishes	Stir-Fry	Pasta
Snacks	Soups	Breakfast	Lunch	Dinner	Breads
Sandwiches	Cookies	Cakes	Desserts	Smoothies	Grilling
Casseroles	Pizza	Wraps & Rolls	One-Pot Meals	Comfort Food	Seafood

It's not listed, let me just type it...

**Allergens and ingredients to avoid?**

Gluten	Dairy	Eggs
Nuts	Sesame	Soy Beans
Fish	Seafood	Avocado
Eggplant	Garlic	Parsley

Anything Else?...

**Specific Lifestyle?**

Vegan	Vegetarian
Diabetic	Paleo
Ketogenic	High-Protein
Eating Healthy	Low-fat

Anything Else?...

Generate Recipe

### 7.5.2. Generating a recipe for ‘Family’ account type

Select a family member from family members listed under “**Who’s hungry?**” section. You can select either one of your children, or yourself. *This field is mandatory.* Next, select a recipe category from the suggested categories listed under “**Let’s pick a category!**” section. alternatively, you can type the recipe category on the input field on the bottom part of the section. *This field is mandatory.* Next, select which allergens and ingredients to avoid from the suggested allergens and ingredients listed under “**Allergens and ingredients to avoid**” section. If not listed, you can also type the allergen or ingredient name on the input field on the bottom part of the section. Lastly, you can pick any lifestyle the selected family member is holding by selecting a lifestyle from the suggested lifestyles listed under “**Specific lifestyle?**” section. If not listed, you can also type the lifestyle name on the input field on the bottom part of the section. Finally, click “**Generate Recipe**” in order to get the desired recipe according to the family member’s likings. Please note that all preferences mentioned are taken into consideration.

EatExact

Generate Recipe Saved Recipes Settings Log out

**Who's Hungry?**

Jhonna

Leonardo

Bruno

**Let's pick a category!**

Appetizers	Salads	Main Courses	Side dishes	Stir-Fry	Pasta
Snacks	Soups	Breakfast	Lunch	Dinner	Breads
Sandwiches	Cookies	Cakes	Desserts	Smoothies	Grilling
Casseroles	Pizza	Wraps & Rolls	One-Pot Meals	Comfort Food	Seafood

It's not listed, let me just type it...

**Allergens and ingredients to avoid?**

Gluten	Dairy	Eggs
Nuts	Sesame	Soy Beans
Fish	Seafood	Avocado
Eggplant	Garlic	Parsley

Anything Else?...

**Specific Lifestyle?**

Vegan	Vegetarian
Diabetic	Paleo
Ketogenic	High-Protein
Eating Healthy	Low-fat

Anything Else?...

**Generate Recipe**

EatExact

Generate Recipe Saved Recipes Settings Log out

**Who's Hungry?**

Jhonna

Leonardo

Bruno

**Let's pick a category!**

Appetizers	Salads	Main Courses	Side dishes	Stir-Fry	Pasta
Snacks	Soups	Breakfast	Lunch	Dinner	Breads
Sandwiches	Cookies	Cakes	Desserts	Smoothies	Grilling
Casseroles	Pizza	Wraps & Rolls	One-Pot Meals	Comfort Food	Seafood

It's not listed, let me just type it...

**Allergens and ingredients to avoid?**

Gluten	Dairy	Eggs
Nuts	Sesame	Soy Beans
Fish	Seafood	Avocado
Eggplant	Garlic	Parsley

Anything Else?...

**Specific Lifestyle?**

Vegan	Vegetarian
Diabetic	Paleo
Ketogenic	High-Protein
Eating Healthy	Low-fat

Anything Else?...

**Generate Recipe**

### 7.5.3. Generating a recipe for ‘Just Kids’ account type

Select a family member from family members listed under “Who’s hungry?” section. You can select one of your children. *This field is mandatory*. Next, select a recipe category from the suggested categories listed under “Let’s pick a category!” section. alternatively, you can type the recipe category on the input field on the bottom part of the section. *This field is mandatory*. Next, select which allergens and ingredients to avoid from the suggested allergens and ingredients listed under “Allergens and ingredients to avoid” section. If not listed, you can also type the allergen or ingredient name on the input field

on the bottom part of the section. Lastly, you can pick any lifestyle the selected family member is holding by selecting a lifestyle from the suggested lifestyles listed under “**Specific lifestyle?**” section. If not listed, you can also type the lifestyle name on the input field on the bottom part of the section. Finally, click “**Generate Recipe**” in order to get the desired recipe according to the family member’s likings. Please note that all preferences mentioned are taken into consideration.

EatExact
 Generate Recipe   Saved Recipes   Settings   Log out

**Who's Hungry?**

Dani

**Let's pick a category!**

<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Appetizers</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Salads</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Main Courses</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Side dishes</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Stir-Fry</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Pasta</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Snacks</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Soups</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Breakfast</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Lunch</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Dinner</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Breads</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Sandwiches</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Cookies</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Cakes</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Desserts</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Smoothies</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Grilling</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Casseroles</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Pizza</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Wraps &amp; Rolls</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">One-Pot Meals</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Comfort Food</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Seafood</span>

It's not listed, let me just type it...

<b>Allergens and ingredients to avoid?</b>	<b>Specific Lifestyle?</b>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Gluten</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Dairy</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eggs</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Vegan</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Vegetarian</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Nuts</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Sesame</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Soy Beans</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Diabetic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Paleo</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Fish</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Seafood</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Avocado</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Ketogenic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">High-Protein</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eggplant</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Garlic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Parsley</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eating Healthy</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Low-fat</span>

Anything Else?...

**Generate Recipe**

EatExact
 Generate Recipe   Saved Recipes   Settings   Log out

**Who's Hungry?**

Dani

**Let's pick a category!**

<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Appetizers</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Salads</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Main Courses</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Side dishes</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Stir-Fry</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Pasta</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Snacks</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Soups</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Breakfast</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Lunch</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Dinner</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Breads</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Sandwiches</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Cookies</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Cakes</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Desserts</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Smoothies</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Grilling</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Casseroles</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Pizza</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Wraps &amp; Rolls</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">One-Pot Meals</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Comfort Food</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Seafood</span>

It's not listed, let me just type it...

<b>Allergens and ingredients to avoid?</b>	<b>Specific Lifestyle?</b>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Gluten</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Dairy</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eggs</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Vegan</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Vegetarian</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Nuts</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Sesame</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Soy Beans</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Diabetic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Paleo</span>
<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Fish</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Seafood</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Avocado</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Ketogenic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">High-Protein</span>	<span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eggplant</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Garlic</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Parsley</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Eating Healthy</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; display: inline-block;">Low-fat</span>

Anything Else?...

**Generate Recipe**

#### 7.5.4. Generating a recipe for ‘Professional’ account type

Select a menu from menus listed under the “**Which Menu?**” section. *This field is mandatory.* Next, select a recipe category from the suggested categories listed under “**Let’s pick a category!**” section. alternatively, you can type the recipe category on the input field on the bottom part of the section. *This field is mandatory.* Next, select which allergens and ingredients to avoid from the suggested allergens and ingredients listed under “**Allergens and ingredients to avoid**” section. If not listed, you can also type the allergen or ingredient name on the input field on the bottom part of the section. Lastly, you can pick any lifestyle you’d like to incorporate in the recipe by selecting a lifestyle from the suggested lifestyles listed under “**Specific lifestyle?**” section. If not listed, you can also type the lifestyle name on the input field on the bottom part of the section. Finally, click “**Generate Recipe**” in order to get the desired recipe according to the menu type and input restrictions.

The screenshot shows the EatExact software interface for generating a recipe. At the top, there is a green header bar with the text "EatExact" on the left and "Generate Recipe", "Saved Recipes", "Settings", and "Log out" on the right. Below the header, there is a section titled "Which menu?" with four buttons: "Vegan", "Fish Free", "Lactose Free" (which is highlighted in green), and "Gluten Free". Underneath this, there is a section titled "Let's pick a category!" with a grid of 18 buttons arranged in three rows of six. The buttons are: Appetizers, Salads, Main Courses, Side dishes, Stir-Fry, Pasta; Snacks, Soups, Breakfast, Lunch, Dinner, Breads; Sandwiches, Cookies, Cakes, Desserts, Smoothies, Grilling; Casseroles, Pizza, Wraps & Rolls, One-Pot Meals, Comfort Food, Seafood. Below the category grid, there is a text input field with the placeholder "It's not listed, let me just type it...". Further down, there are two sections: "Allergens and ingredients to avoid?" and "Specific Lifestyle?". The "Allergens and ingredients to avoid?" section contains a 4x3 grid of buttons: Gluten, Dairy, Eggs; Nuts, Sesame, Soy Beans; Fish, Seafood, Avocado; Eggplant, Garlic, Parsley. Below this grid is a text input field with the placeholder "Anything Else?...". The "Specific Lifestyle?" section contains a 4x2 grid of buttons: Vegan, Vegetarian; Diabetic, Paleo; Ketogenic, High-Protein; Eating Healthy, Low-fat. Below this grid is another text input field with the placeholder "Anything Else?...". At the bottom center of the form is a large green button labeled "Generate Recipe".

#### 7.5.5. Generating a recipe for ‘Dietitian’ account type

Select a patient by selecting the patient from the dropdown, or by typing its first name, last name, id or part of each of them on the search bar, and then pick the patient from the dropdown. *This field is mandatory.* Next, select a recipe category from the suggested categories listed under “**Let’s pick a category!**” section. alternatively, you can type the recipe category on the input field on the bottom part of the section. *This field is mandatory.* Next, select which allergens and ingredients to avoid from the suggested allergens and ingredients listed under “**Allergens and ingredients to avoid**” section. If not listed, you can also type the allergen or ingredient name on the input field on the bottom part of the section. Lastly, you can pick any lifestyle the selected patient is holding by selecting a lifestyle from the suggested lifestyles listed under “**Specific lifestyle?**” section. If not listed, you can also type the lifestyle

name on the input field on the bottom part of the section. Finally, click “**Generate Recipe**” in order to get the desired recipe according to the patient’s likings. Please note that all preferences mentioned are taken into consideration.

EatExact

Generate Recipe My Patients Settings Log out

Search by name, ID, or other attributes Select a patient

**Let's pick a category!**

Appetizers	Salads	Main Courses	Side dishes	Stir-Fry	Pasta
Snacks	Soups	Breakfast	Lunch	Dinner	Breads
Sandwiches	Cookies	Cakes	Desserts	Smoothies	Grilling
Casseroles	Pizza	Wraps & Rolls	One-Pot Meals	Comfort Food	Seafood

It's not listed, let me just type it...

**Allergens and ingredients to avoid?**

Gluten	Dairy	Eggs
Nuts	Sesame	Soy Beans
Fish	Seafood	Avocado
Eggplant	Garlic	Parsley

Anything Else?...

**Specific Lifestyle?**

Vegan	Vegetarian
Diabetic	Paleo
Ketogenic	High-Protein
Eating Healthy	Low-fat

Anything Else?...

Generate Recipe

EatExact

Generate Recipe My Patients Settings Log out

Search by name, ID, or other attributes Select a patient

**Let's pick a category!**

Appetizers	Salads	Main Courses
Snacks	Soups	Breakfast
Sandwiches	Cookies	Cakes
Casseroles	Pizza	Wraps & Rolls

It's not listed, let me just type it...

**Allergens and ingredients to avoid?**

Gluten	Dairy	Eggs
Nuts	Sesame	Soy Beans
Fish	Seafood	Avocado
Eggplant	Garlic	Parsley

Anything Else?...

**Specific Lifestyle?**

Vegan	Vegetarian
Diabetic	Paleo
Ketogenic	High-Protein
Eating Healthy	Low-fat

Anything Else?...

Generate Recipe

The screenshot shows the EatExact API interface. At the top, there's a navigation bar with 'Generate Recipe', 'My Patients', 'Settings', and 'Log out'. Below that is a search bar with placeholder text 'Search by name, ID, or other attributes' and a dropdown menu showing '123456780 noy biton'. A large grid of buttons labeled 'Let's pick a category!' includes categories like Appetizers, Salads, Main Courses, Side dishes, Stir-Fry, Pasta, Snacks, Soups, Breakfast, Lunch, Dinner, Breads, Sandwiches, Cookies, Cakes, Desserts, Smoothies, Grilling, Casseroles, Pizza, Wraps & Rolls, One-Pot Meals, Comfort Food, and Seafood. Below this is a text input field with placeholder 'It's not listed, let me just type it...'. Under 'Allergens and ingredients to avoid?', there are checkboxes for Gluten, Dairy, Eggs, Nuts, Sesame, Soy Beans, Fish, Seafood, Avocado, Eggplant, Garlic, and Parsley. The 'Parsley' checkbox is selected. There's also a text input field containing '|onion, mushroom'. To the right, under 'Specific Lifestyle?', are checkboxes for Vegan, Vegetarian, Diabetic, Paleo, Ketogenic (which is selected), High-Protein, Eating Healthy, and Low-fat. Below these is a text input field with placeholder 'Anything Else?...'. At the bottom is a green 'Generate Recipe' button.

## 7.6. API Response Page

After generating a recipe according to your account type detailed on chapter 7.5, you're redirected to the following response page, here you can view the saved recipe, save it and share it via WhatsApp or Telegram.

The screenshot shows the API response page. At the top, there's a navigation bar with 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below that is a green message bubble saying 'Bruno, Here's the Wraps & Rolls recipe you've asked for, considering all of your dietary restrictions and personal taste:'. The main content area has a title 'High-Protein Gluten-Free Veggie Wraps for Kids'. It includes sections for 'Ingredients' (a bulleted list of 11 items including tortillas, cottage cheese, carrots, cucumber, avocado, chicken, spinach, olive oil, salt, and pepper) and 'Instructions' (a numbered list of 5 steps for preparing the wraps). There's also a 'Variations and Tips' section with three bullet points about flavor, crunch, and dipping. At the bottom are social sharing icons for heart, WhatsApp, and Telegram.

### 7.6.1. Save a Recipe

On the bottom part of the response, you can click on the “heart” icon and save the recipe to the entity the recipe has generated for. After clicking the “heart” icon, it turns solid red, which indicates the recipe is currently saved.

## Variations and Tips

- For Extra Flavor: Add a sprinkle of mild, kid-friendly spices like a dash of cinnamon or a tiny bit of cumin to the cottage cheese mixture.
- For Added Crunch: Include some finely chopped bell peppers or a few sweet corn kernels.
- For Dipping: Serve with a side of yogurt-based dip or hummus for an extra nutritional boost.



### 7.6.2. Undo Save a Recipe

If you've changed your mind and you wish to undo the saving of the recipe on the response page, you can click the “heart” icon again and it'll turn to outlined red. now the recipe is no longer saved for the entity the recipe has generated for.

## Variations and Tips

- For Extra Flavor: Add a sprinkle of mild, kid-friendly spices like a dash of cinnamon or a tiny bit of cumin to the cottage cheese mixture.
- For Added Crunch: Include some finely chopped bell peppers or a few sweet corn kernels.
- For Dipping: Serve with a side of yogurt-based dip or hummus for an extra nutritional boost.



### 7.6.3. Share a Recipe via WhatsApp

On the bottom part of the response, you can click on the “WhatsApp” icon and share the recipe via WhatsApp web. After clicking the “WhatsApp” icon, a new tab is opened asking the user to open WhatsApp web in order to share the recipe.

## Variations and Tips

- For Extra Flavor: Add a sprinkle of mild, kid-friendly spices like a dash of cinnamon or a tiny bit of cumin to the cottage cheese mixture.
- For Added Crunch: Include some finely chopped bell peppers or a few sweet corn kernels.
- For Dipping: Serve with a side of yogurt-based dip or hummus for an extra nutritional boost.



הוּא

הוּא WhatsApp Web מומקם בולג מרכז העזרה פרטיים פיצ'רים

WhatsApp

שליחת הטקסט הבא ב-WhatsApp

פתחת הצעדים

Kid-Friendly Keto Tomato Pizza Ingredients: 2 large eggs 1 cup almond flour 1/2 teaspoon baking powder 1/4 teaspoon salt 1/2 teaspoon dried oregano 1/4 teaspoon garlic powder 1/2 cup tomato sauce (no sugar added) 1/2 cup shredded lactose-free mozzarella cheese 1 small tomato, thinly sliced 1 tablespoon olive oil Instructions: Preheat the oven to 375°F (190°C). Line a baking sheet with parchment paper. In a medium bowl, beat the eggs. Add the almond flour, baking powder, salt, dried oregano, and garlic powder. Mix until a dough forms. Place the dough onto the prepared baking sheet. Flatten and shape it into a small pizza crust, about 1/4 inch thick. Bake the crust for 12-15 minutes, or until it is slightly golden brown. Remove the crust from the oven and spread the tomato sauce evenly over the crust. Sprinkle the shredded lactose-free mozzarella cheese over the sauce. Arrange the tomato slices on top of the cheese. Drizzle the olive oil over the toppings. Return the pizza to the oven and bake for an additional 10-12 minutes, or until the cheese is melted and bubbly. Allow the pizza to cool slightly before slicing and serving. Variations and Tips: Calories: 320 Protein: 16g Fat: 25g Carbohydrates: 8g

#### 7.6.4. Share a Recipe via Telegram

On the bottom part of the response, you can click on the “Telegram” icon and share the recipe via Telegram web. After clicking the “Telegram” icon, a new tab is opened asking the user to open Telegram web in order to share the recipe.

##### Variations and Tips

- For Extra Flavor: Add a sprinkle of **mild**, **kid-friendly** spices like a dash of cinnamon or a tiny bit of **cumin** to the cottage cheese mixture.
- For Added Crunch: Include some finely chopped bell peppers or a few sweet corn kernels.
- For Dipping: Serve with a side of yogurt-based dip or hummus for an extra nutritional boost.



A screenshot of a mobile device displaying a recipe card. The card has a white background with a central white box containing the recipe details. At the top of this box is a small blue circular icon with a white arrow. Below it is the title "Kid-Friendly Keto Tomato Pizza" and the ingredients: "2 large eggs 1 cup almond flour 1/2 teaspoon baking powder 1/4...". At the bottom of the box is a blue "SHARE" button. The background of the card features a repeating pattern of various food items like pizza, bread, and vegetables. In the top left corner of the screen, there is a small "Telegram" icon. In the top right corner, there is a blue button labeled "DOWNLOAD FOR MAC".

#### 7.7. Saved Recipes Page

When Clicking “Saved Recipes” on the top navigation bar, the “Saved Recipes” page is displayed. Click the family member you’d like to view its saved recipes on the “Family” or “Just Kids” account types, or click the menu you’d like to view its saved recipes on the “Professional” account type.

A screenshot of a web browser showing the "Saved Recipes" page for a "Family" account. The top navigation bar is green with the EatExact logo, "Generate Recipe", "Saved Recipes", "Settings", and "Log out". The main content area has a white background. At the top, it says "Saved Recipes" and provides a brief description: "Browse through a collection of recipes personalized for your family. Each recipe is crafted to suit the unique tastes and dietary preferences of your loved ones, ensuring mealtime is both enjoyable and easy. Select a name to explore their saved recipes." Below this, there is a list of names in a table: Jhanny, Leonardo, and Bruno. Each name is in its own row with a thin green border around the cell.

A screenshot of a web browser showing the "Saved Recipes" page for a "Professional" account. The top navigation bar is green with the EatExact logo, "Generate Recipe", "Saved Recipes", "Settings", and "Log out". The main content area has a white background. At the top, it says "Saved Recipes" and provides a brief description: "Welcome to your saved menus! This is a collection of recipes crafted to meet specific dietary restrictions for your restaurant. Browse through the menu categories you've created, and revisit your tailored menus that cater to your guests' needs." Below this, there is a grid of four buttons: Vegan, Fish Free, Lactose Free, and Gluten Free. Each button is in its own cell within a 2x2 grid with a thin green border around each cell.

### 7.7.1. View a Recipe

After selecting a family member or a menu according to the account type, you'll be navigated to the “**Recipe Collection**” page. You can sort by recipe categories on the top caruselle. Click on a recipe name in order to view it.

The screenshot shows the EatExact Recipe Collection page. At the top, there are navigation links: Generate Recipe, Saved Recipes, Settings, and Log out. Below this is a header bar with the title "Recipe Collection" and a caruselle of category buttons: All, Pasta, Cakes, and Salads. The main content area displays a grid of recipe cards. The first card, "Gluten-Free and Dairy-Free Creamy Vegan Pasta", is shown with edit and delete icons. The second card, "Gluten-Free Vegan Chocolate Banana Cake", is also shown with edit and delete icons. The third card, "Ketogenic Gluten-Free Zucchini Noodles with Tomato Basil Sauce", is shown with edit and delete icons. The fourth card, "Vegan and Gluten-Free Chocolate Banana Cake", is shown with edit and delete icons. The fifth card, "Gluten-Free Vegan Pasta Primavera", is highlighted with a green background and is shown with edit and delete icons. The sixth card, "Quinoa and Avocado Salad", is shown with edit and delete icons. The seventh card, "Quinoa and Chickpea Salad", is shown with edit and delete icons. On the right side of the page, there is a sidebar with additional recipe cards: "Zucchini Noodles with Basil Sauce" and "Avocado Salad".

The screenshot shows a detailed view of the "Gluten-Free Vegan Pasta Primavera" recipe. At the top, there are navigation links: Generate Recipe, Saved Recipes, Settings, and Log out. Below this is a header bar with the title "Recipe Collection" and a caruselle of category buttons: All, Pasta, Cakes, and Salads. To the left of the main content area, there is a sidebar with three recipe cards: "Gluten-Free and Dairy-Free Creamy Vegan Pasta", "Vegan and Gluten-Free Chocolate Banana Cake", and "Quinoa and Chickpea Salad", each with edit and delete icons. The main content area shows the "Gluten-Free Vegan Pasta Primavera" recipe with a close button (X). The recipe details include:

**Ingredients**

- 200g gluten-free pasta (e.g., brown rice or quinoa pasta)
- 2 tablespoons olive oil
- 1 medium red bell pepper, sliced
- 1 medium yellow bell pepper, sliced
- 1 small zucchini, sliced
- 1 small red onion, sliced
- 2 cloves garlic, minced
- 1 cup cherry tomatoes, halved
- 1 cup fresh spinach
- 1/4 cup fresh basil, chopped
- 2 tablespoons nutritional yeast (optional for a cheesy flavor)
- Salt and pepper to taste
- Juice of 1 lemon

**Instructions**

1. Cook the gluten-free pasta according to package instructions. Drain and set aside.
2. In a large skillet, heat the olive oil over medium heat.
3. Add the red bell pepper, yellow bell pepper, zucchini, and red onion. Sauté for about 5-7 minutes, or until the vegetables are tender.
4. Add the minced garlic and cherry tomatoes. Cook for an additional 3 minutes, stirring occasionally.
5. Stir in the fresh spinach and cook until wilted, about 2 minutes.
6. Add the cooked pasta to the skillet and toss to combine with the vegetables.
7. Sprinkle the chopped basil and nutritional yeast (if using) over the pasta. Season with salt and pepper to taste.
8. Drizzle the lemon juice over the pasta and toss to combine.
9. Serve hot and enjoy!

### 7.7.2. Edit a Recipe

Click the “**pencil**” button on a specific recipe component in order to edit it. a pop-up screen will be displayed. You can edit the name of the recipe, its ingredients, instructions and the tips given by the AI. When you're done editing, click the “**Save Changes**” button on the bottom of the pop-up .

**Gluten-Free Vegan Pasta Primavera**

**Edit your recipe**

Update the title, ingredients, instructions, and tips as needed to perfect your dish. Once you're done, click the 'Save Changes' button to keep your changes. If you notice an ingredient you don't like, feel free to update your preferences in the **Settings** section to ensure future recipes match your taste.

**Recipe Title**  
Gluten-Free Vegan Pasta Primavera

**Ingredients**

- 200g gluten-free pasta (e.g., brown rice or quinoa pasta)
- 2 tablespoons olive oil
- 1 medium red bell pepper, sliced
- 1 medium yellow bell pepper, sliced
- 1 small zucchini, sliced
- 1 small red onion, sliced
- 2 cloves garlic, minced
- 1 cup cherry tomatoes, halved
- 1 cup fresh spinach
- 1/4 cup fresh basil, chopped

**Instructions**

Cook the gluten-free pasta according to package instructions. Drain and set aside. In a large skillet, heat the olive oil over medium heat. Add the red bell pepper, yellow bell pepper, zucchini, and red onion. Sauté for about 5-7 minutes, or until the vegetables are tender. Add the minced garlic and cherry tomatoes. Cook for an additional 3 minutes, stirring occasionally. Stir in the fresh spinach and cook until wilted, about 2 minutes. Add the cooked pasta to the skillet and toss to combine with the vegetables. Sprinkle the chopped basil and nutritional yeast (if using) over the pasta. Season with salt and pepper to taste.

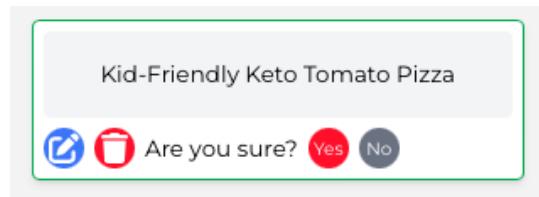
**Tips**

- Protein Boost: Add some cooked chickpeas or baked tofu for extra protein.
- Herb Swap: Substitute fresh parsley or cilantro for the basil for a different flavor profile.
- Creamy Option: Blend soaked cashews with water and nutritional yeast to create a creamy, dairy-free sauce to mix in with the pasta.
- Meal Prep: This dish can be made in advance and stored in an airtight container in the

**Save Changes**

### 7.7.3. Delete a Recipe

Click the “trash” button on a specific recipe component in order to delete it. A message will be displayed on the component asking “**Are you sure?**” If you click “**Yes**”, the recipe will be deleted from that user’s saved recipes. If you click “**No**”, the message will be discarded. Deleting all the recipes from a certain category will remove the category from the upper caruselle filtering recipes by category. Once you save another recipe from the same category it will appear again.



## 7.8. My Patients Page for “Dietitian” account type

On the “**My Patients**” page you can see a table with all the information about your patients: ID number, first name, last name, age, dietary restrictions, preferred ingredients and which ingredients the patient would like to avoid.

Above the table there’s a search bar, where you can write down any information about the patient on the table, and the relevant patients will remain on the table. In order to get to the saved recipes of a patient, click on the relevant row on the table with the patient’s details. By clicking on a patient, you will be taken to the saved recipes page of this patient, where all the saved recipes are displayed and arranged by categories.

EatExact																																									
					Generate Recipe	My Patients	Settings	Log out																																	
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <b>Search Patients</b>  <input type="text" value="Search by name, ID, or other attributes"/> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ID</th><th>First Name</th><th>Last Name</th><th>Age</th><th>Dietary Restrictions</th><th>Preferred Ingredients</th><th>Avoid These Ingredients</th></tr> </thead> <tbody> <tr> <td>2121212144</td><td>nona</td><td>noni</td><td>34</td><td>gluten intolerance</td><td>banana</td><td>parsley</td></tr> <tr> <td>123456780</td><td>noy</td><td>biton</td><td>4</td><td>lactose intolerance</td><td>tomato</td><td>parsley</td></tr> <tr> <td>208657320</td><td>Ilanit</td><td>Azran</td><td>27</td><td>non</td><td>avocado</td><td>non</td></tr> <tr> <td>123456789</td><td>Hodaya</td><td>Sharon</td><td>36</td><td>Gluten Intolerance, Lactose Intolerance</td><td>beef, chicken</td><td>broccoli</td></tr> </tbody> </table>							ID	First Name	Last Name	Age	Dietary Restrictions	Preferred Ingredients	Avoid These Ingredients	2121212144	nona	noni	34	gluten intolerance	banana	parsley	123456780	noy	biton	4	lactose intolerance	tomato	parsley	208657320	Ilanit	Azran	27	non	avocado	non	123456789	Hodaya	Sharon	36	Gluten Intolerance, Lactose Intolerance	beef, chicken	broccoli
ID	First Name	Last Name	Age	Dietary Restrictions	Preferred Ingredients	Avoid These Ingredients																																			
2121212144	nona	noni	34	gluten intolerance	banana	parsley																																			
123456780	noy	biton	4	lactose intolerance	tomato	parsley																																			
208657320	Ilanit	Azran	27	non	avocado	non																																			
123456789	Hodaya	Sharon	36	Gluten Intolerance, Lactose Intolerance	beef, chicken	broccoli																																			

EatExact								
					Generate Recipe	My Patients	Settings	Log out
<b>Recipe Collection</b>								
<span>All</span> <span>Pizza</span>	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <b>Kid-Friendly Keto Tomato Pizza</b>  </div>							

## 7.9. Settings Page

On the Settings page you can manage preferences differently for each account type. You can access this page by clicking “Settings” on the top nav bar.

### 7.9.1. Managing Preferences for ‘Just Me’ account type

Click “**Edit your Personal Details**” On the “Just Me” account type settings page. Update any user information needed: first name, last name, age, dietary restrictions, preferred ingredients or ingredients to avoid. After updating, click on the “**Update Details**” button below to save the changes.

The screenshot shows the 'Edit your Personal Details' form. It includes fields for First Name (Noy), Last Name (Blanka), Age (30), Dietary Restrictions (gluten intolerance), Preferred Ingredients (onion, tomato), and Avoid These Ingredients (Parsley, coriander). A green 'Update Details' button is at the bottom.

First Name	Last Name
Noy	Blanka
Age	30
Dietary Restrictions	gluten intolerance
Preferred Ingredients	onion, tomato
Avoid These Ingredients	Parsley, coriander

**Update Details**

### 7.9.2. Managing Preferences for ‘Family’ account type

Click “**Edit your Personal Details**” or “**Edit your Children Details**” on the “Family” account type settings page. Update any user information needed: first name, last name, age, dietary restrictions, preferred ingredients or ingredients to avoid. After updating, click on the “**Update Details**” button below to save the changes.

The screenshot shows the 'Edit your Personal Details' form. It includes fields for First Name (Bruno), Last Name (Mars), Age (45), Dietary Restrictions (Gluten Intolerance, Lactose Intolerance), Preferred Ingredients (Cottage cheese), and Avoid These Ingredients (Orange). A green 'Update Details' button is at the bottom. Below it, there is a link to 'Edit your Children Details'.

First Name	Last Name
Bruno	Mars
Age	45
Dietary Restrictions	Gluten Intolerance, Lactose Intolerance
Preferred Ingredients	Cottage cheese
Avoid These Ingredients	Orange

**Update Details**

Edit your Children Details

EatExact

Generate Recipe Saved Recipes Settings Log out

Settings

Edit your Personal Details

Edit your Children Details

Jhonny

Leonardo

[+ Add Another Family Member](#)

In order to delete a family member, click on the relevant name of the family member you wish to delete, and click on the "**Delete family member**" button. In order to add a new family member click the "**Add another family member**" button and enter details about the new family member and click on the "**plus**" button to add it. If you changed your mind before adding, and you wish to discard this family member, click on the "**trash**" button, and the form is removed.

EatExact

Generate Recipe Saved Recipes Settings Log out

Settings

Edit your Personal Details

Edit your Children Details

Jhonny

Name

Age

Dietary Restrictions

Preferred Ingredients

Avoid These Ingredients

[Update Details](#) [Delete Family Member](#)

Leonardo

[+ Add Another Family Member](#)

Edit your Children Details

Jhony

Leonardo

Daniel

Name

Age

Dietary Restrictions

Preferred Ingredients

Avoid These Ingredients

+ Delete

+ Add Another Family Member

### 7.9.3. Managing Preferences for ‘Just Kids’ account type

Click “Edit your Children Details” on the “Just Kids” account type settings page. Update any children information needed: first name, last name, age, dietary restrictions, preferred ingredients or ingredients to avoid. After updating, click on the “Update Details” button below to save the changes. In order to delete a family member, click on the relevant name of the family member you wish to delete, and click on the “Delete family member” button. In order to add a new family member click the “Add another family member” button and enter details about the new family member and click on the “plus” button to add it. If you changed your mind before adding, and you wish to discard this family member, click on the “trash” button, and the form is removed.

EatExact

Generate Recipe   Saved Recipes   Settings   Log out

**Settings**

Edit your Children's Details

Dani

Name

Age

Dietary Restrictions

Preferred Ingredients

Avoid These Ingredients

Update Details Delete Family Member

+ Add Another Family Member

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below this, the title 'Edit your Children's Details' is displayed. A single child record is shown with the name 'Dani'. A green button labeled '+ Add Another Family Member' is located at the bottom left.

#### 7.9.4. Managing Preferences for 'Professional' account type

Click “Edit your Personal Details” or “Edit your Menus Details” on the “Professional” account type settings page. Update any information needed: first name and last name for personal details, and menu name for menus details. After updating, click on the “Update Details” button below to save the changes. In order to delete a menu, click on the relevant name of the menu you wish to delete, and click on the “Delete menu” button. In order to add a new menu click the “Add another menu” button enter its name and click on the “plus” button to add it. If you changed your mind before adding, and you wish to discard this menu, click on the “trash” button, and the form is removed.

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below this, the title 'Edit your Personal Details' is displayed. There are fields for 'First Name' (Naomi) and 'Last Name' (Levi). A green 'Update Details' button is located at the bottom left.

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below this, the title 'Edit your Menus Details' is displayed. There are dropdown menus for 'Vegan', 'Fish Free', 'Lactose Free', and 'Gluten Free'. A green button labeled '+ Add Another Menu' is located at the bottom left.

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below this, the title 'Edit your Personal Details' is displayed. There are fields for 'First Name' (Naomi) and 'Last Name' (Levi). A green 'Update Details' button is located at the bottom left.

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'Saved Recipes', 'Settings', and 'Log out'. Below these, under 'Edit your Personal Details', there are fields for 'Vegan', 'Fish Free', 'Lactose Free', and 'Name' (containing 'Lactose Free'). There are also 'Rename Menu' and 'Delete Menu' buttons. Under 'Edit your Menus Details', there is a field for 'Gluten Free' and a green button labeled '+ Add Another Menu'.

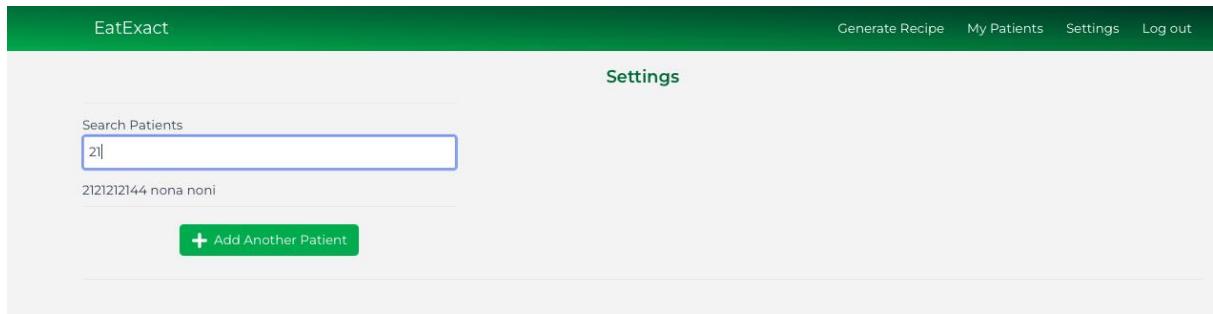
### 7.9.5. Managing Preferences for ‘Dietitian’ account type

On the “dietitian” account type settings page, we can only update the patients’ details: first name, last name, ID number, age, dietary restrictions, preferred ingredients and ingredients to avoid. After making the desired change, click on the “**Update Details**” button.

You can search for patients on the search bar on the top left of the page by one of the patient’s identification marks.

In order to delete a patient, click on the relevant name of the patient you wish to delete, and click on the “**Delete patient**” button. In order to add a new patient click the ”**Add another patient**” button, enter its details and click on the “**plus**” button to add it. If you changed your mind before adding, and you wish to discard this patient, click on the “**trash**” button, and the form is removed.

The screenshot shows the 'Settings' section of the EatExact application. At the top, there are links for 'Generate Recipe', 'My Patients', 'Settings', and 'Log out'. Below these, there is a 'Search Patients' field with placeholder text 'Search by name, ID, or other attributes'. A patient record for 'nona noni' (ID: 2121212144, Age: 34, Dietary Restrictions: gluten intolerance, Preferred Ingredients: banana, Avoid These Ingredients: parsley) is displayed. There are 'Update Details' and 'Delete Patient' buttons at the bottom.



## 7.10. Logout Process

In order to log out of the system you must click on the "logout" button which is at the top of the page on the right side.



# 8. Maintenance Guide

## 8.1. Instructions for Cloning and Running the Project Locally

### 8.1.1. Clone the Github repository

git clone <https://github.com/ilanithanooko/EatExact.git>

### 8.1.2. Add .env file to the backend folder

**PORT**=4000

**MONGO\_URI**=mongodb+srv://dbadmin:IlanitNoy2024!@cluster1.lxqndsd.mongodb.net/

SECRET=kdcnkjdnvkjdsvcjkdkjckjsdijnjhbcreferfr

**OPENAI\_API\_KEY**=sk-proj-9HZakoAvb6w9SzSLYeg0FEnaZUT0RnQ-Y2z1HrlrepkUjRbZk0pE5SNgZIT3BlbkFJQZ3bNKBtsk1OWl6kleMasrhJP hMPDYrqhWlU9Fig96vRFAi8FOSssVZ-4A

### 8.1.3. Add .env file to the frontend folder

**REACT\_APP\_API\_URL**=http://localhost:4000

### 8.1.4. Open 2 separate terminal windows to start the server and run the frontend

**First Terminal:**

cd frontend

npm start

**Second Terminal:**

cd backend

npm run dev

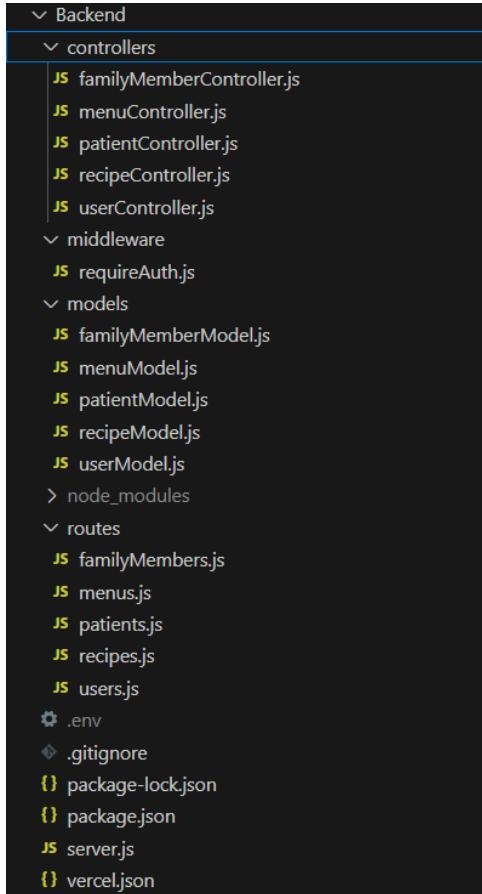
### 8.1.5. The website will open for us in the browser and the server will wait for calls to it.

## 8.2. Project Structure

The project is built using a full-stack JavaScript approach, incorporating both front-end and back-end components to deliver a seamless and scalable web application.

This organized structure promotes maintainability and scalability, allowing developers to easily modify, extend, and debug the application.

### 8.2.1. Backend Structure



#### 8.2.1.1. Server.js

The server.js file is the main entry point of the backend for the application. It sets up an Express.js server that connects to a MongoDB database using Mongoose and defines middleware to handle JSON requests and logging. It also sets up routes for handling different aspects of the application, such as recipes, users, family members, patients, and menus, mapping these routes to the corresponding API endpoints. Once connected to the database, the server listens on a specified port, making it ready to process incoming requests.

##### 8.2.1.1.1. CORS Functionality

CORS (Cross-Origin Resource Sharing) is configured in the server.js file to control which domains can access the API. The application allows requests from specific origins, including the deployed frontend and server, as well as a local development server. This is important for preventing unauthorized access from other domains. The middleware checks the origin of each request and either grants or denies access based on the allowed origins, with exceptions for mobile apps and tools like Postman that don't send an origin header.

#### **8.2.1.1.2. Connecting to the ChatGPT API**

The server also connects to OpenAI's GPT-4 API via an Express route. When a POST request is made to the /api/chat route, the server sends a prompt to the ChatGPT API, which responds with a generated recipe or dietary advice based on the input. The server makes this request using the axios library, including the API key from environment variables in the headers for authentication. The response is returned to the client after being processed, with error handling in place to manage any issues with the API call.

#### **8.2.1.2. Controllers Folder**

Contains the business logic for different parts of the application. Each controller is responsible for handling incoming requests, interacting with models, and sending responses back to the client.

**familyMemberController.js:** Manages family member-related CRUD operations, including getting, adding, updating, or deleting family members.

**menuController.js:** Manages menu-related CRUD operations, including getting, adding, updating, or deleting menus.

**patientController.js:** Manages patient-related CRUD operations, including getting, adding, updating, or deleting patients.

**recipeController.js:** Manages recipe-related CRUD operations, including getting, adding, updating, or deleting recipes.

**userController.js:** Manages user-related operations such as registration, login, getting a user and updating user information.

#### **8.2.1.3. Middleware Folder**

This folder contains a middleware function that adds an extra layer of logic between the request and response cycle.

**requireAuth.js:** Ensures that only authenticated users can access certain routes, by verifying authentication tokens using JWT.

#### **8.2.1.4. Models Folder**

Contains the schema definitions and models for interacting with the MongoDB database. Each model corresponds to a collection in the database, defining how data is structured.

**familyMemberModel.js:** Defines the schema and structure for storing family members' information.

**menuModel.js:** Defines the schema and structure for storing menus' information.

**patientModel.js:** Defines the schema and structure for storing patients' information, used for dietitian patient management.

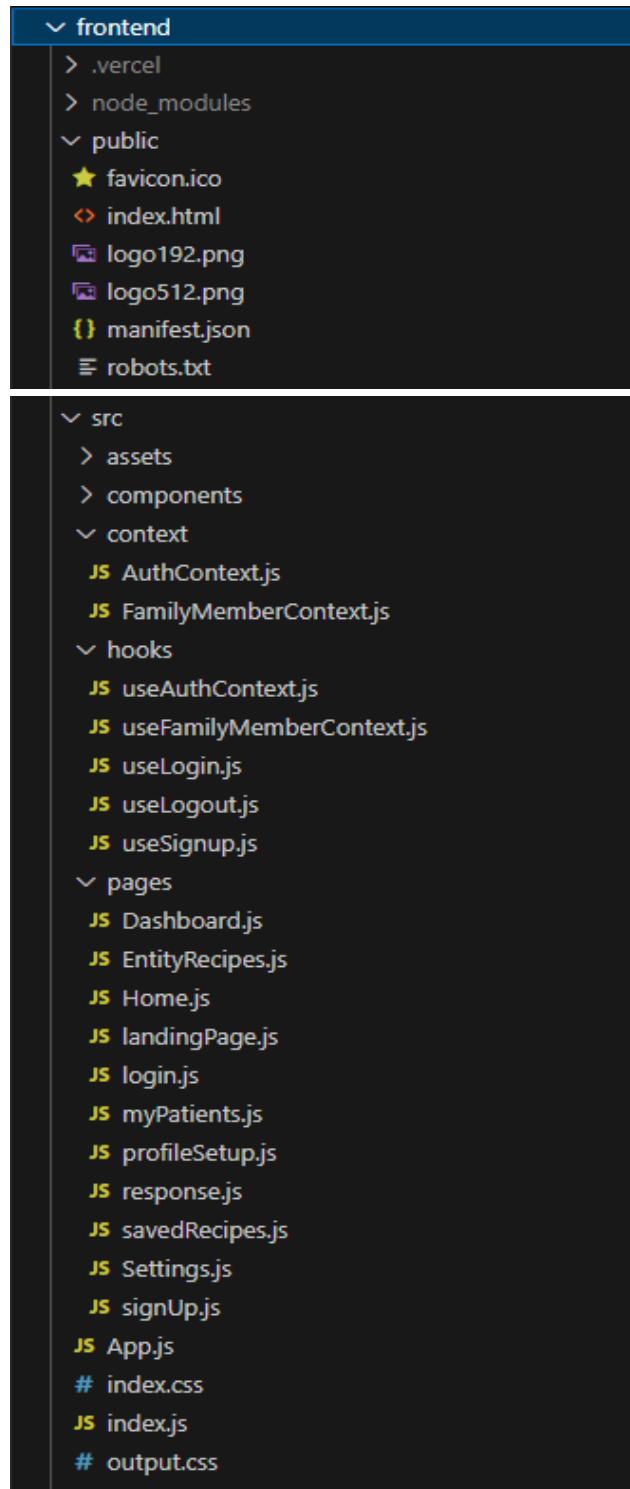
**recipeModel.js:** Defines the schema and structure for storing recipes' information.

**userModel.js**: Defines the schema for user accounts, including fields for user authentication like email and hashed password and user preferences.

#### 8.2.1.5. Routes Folder

Each file in this folder specifies the API routes that map to specific controller actions and configures the API endpoints used by the front-end to interact with the backend.

#### 8.2.2. Frontend Structure



### **8.2.2.1. App.js**

This file serves as the core of the React application, managing routing and rendering different pages based on the URL using React Router. It leverages the BrowserRouter, Routes, and Route components to define navigation across various pages of the application such as the dashboard, login, signup, and profile setup. In addition to basic routing, the App.js file also integrates authentication logic by checking if a user is logged in and whether user data, such as their role, has been fetched. It ensures that unauthenticated users are redirected to the login or signup page, while authenticated users are directed to relevant routes like the dashboard or profile setup. The file also conditionally renders components based on the user's authentication state and data, providing personalized navigation experiences. The App.js file further includes two useEffect hooks to handle the asynchronous fetching of user data from the backend, updating the userData state based on the logged-in user's information. This dynamic handling of user roles and data ensures that the correct routes and pages are served depending on the state of the user and their role within the app.

### **8.2.2.2. index.html**

Located in the “public” folder. The main HTML file for the React application, where the root div is located, which React will render into.

### **8.2.2.3. Assets Folder**

This folder contains static assets such as images and media files used in the project.

### **8.2.2.4. Context Folder**

This folder manages global state for the application using React's Context API to provide shared data and functionality to components throughout the app.

**AuthContext.js:** Manages the authentication state (such as the logged-in user) using a reducer to handle login and logout actions. It also checks for existing user data in local storage upon initial load and provides the authentication state and dispatch functions to the entire app.

**FamilyMemberContext.js:** Handles the state related to managing family members' data, including actions for setting, creating, updating, and deleting family members. It provides this state and its associated dispatch actions to any component that needs access to family member data.

### **8.2.2.5. Hooks Folder**

This folder contains custom React hooks to encapsulate reusable logic across the application, making state management and other operations more modular and easier to maintain.

**useAuthContext.js:** A custom hook that provides access to the authentication context, ensuring the component using it is wrapped inside an **AuthProvider**.

**useFamilyMemberContext.js:** A custom hook that provides access to the family member context, ensuring the component using it is wrapped inside a **FamilyMemberContextProvider**.

**useLogin.js:** A custom hook that handles user login functionality, managing the API call, updating authentication state, and storing user data in local storage.

**useLogout.js:** A custom hook that handles user logout functionality by removing user data from local storage and updating the authentication context.

**useSignup.js:** A custom hook that handles user signup functionality, making an API call to register the user, updating the authentication state, and storing user data in local storage.

#### 8.2.2.6. Components Folder

The components folder contains reusable UI components that are shared across different pages of the app. These components encapsulate common logic or user interface elements, such as forms, buttons, or modals, and are designed to make the code more modular and maintainable. In addition to UI consistency, many components handle form submissions, data fetching, and page navigation in specific cases where React Router (handled by App.js) does not manage routing. Additionally, the components are responsible for performing CRUD operations in particular scenarios, ensuring a more streamlined and centralized approach to managing user interactions and data manipulation throughout the application.

#### 8.2.2.7. Pages Folder

This folder contains React components representing different views or "pages" of the application. These components correspond to different routes on our application.

**Dashboard.js:** Displays the main user's dashboard, where they can generate recipes based on user input, allowing interaction with the recipe generation functionality.

**EntityRecipes.js:** Handles the display of recipes related to specific entities, such as family members, individuals, menus and patients.

**LandingPage.js:** The landing page of the app, which is the first page visitors see before logging in.

**login.js:** Manages the user authentication process, allowing users to enter their credentials and log in to access the application.

**myPatients.js:** Displays information for dietitians regarding patients, including dietary restrictions and taste preferences.

**profileSetup.js:** Allows users to set up their profile after signing up.

**response.js:** Presents the recipe generated by the AI API from the backend, along with options in the UI for saving and sharing the recipe.

**savedRecipes.js:** Displays buttons for each entity (such as users or family members), and when clicked, redirects to EntityRecipes.js to view the saved recipes for the selected entity.

**Settings.js:** A settings page where users can adjust various user preferences like dietary restrictions and taste preferences.

**signUp.js:** Manages the user registration process, enabling new users to create an account by providing required information such as name, email, and password.

### 8.3. Setting Up the ChatGPT API

To integrate the ChatGPT API into the application, an OpenAI account needs to be set up in order to obtain an API key from the OpenAI platform. This API key is used to authenticate requests when generating recipes using the GPT-4 model. The API key is securely stored in the environment variables (.env file) to avoid exposing sensitive information. OpenAI's API operates on a pay-as-you-go model, meaning each request to the API has a cost based on the amount of data processed. Once the API key is set, recipe generation is possible through the server.js file on the backend folder. [6]

## 9. Conclusions & Outcomes

To conclude, many of the expected achievements outlined in Phase A have been successfully realized. Through our development process, we overcame several challenges and ultimately met the majority of our project goals.

One of our key goals was to create an intuitively designed, user-friendly website that is accessible across all devices, by making the application accessible to users on both mobile and desktop. We successfully achieved this through the use of Tailwind CSS media breakpoints, ensuring a responsive design that adapts seamlessly to various screen sizes. In terms of enhancing user experience, we focused on allowing extensive customization of the generated recipes according to user preferences. We accomplished this by enabling users to set their favorite and least favorite ingredients through the settings page. This information is stored in the database and is automatically considered each time a recipe is generated, improving the user experience by eliminating the need to re-enter preferences repeatedly.

Another major goal was to integrate and utilize AI effectively in our app. We were able to channel the capabilities of artificial intelligence into the project by successfully integrating the ChatGPT API, enabling complex natural language processing that tailors recipes to individual preferences and dietary restrictions. This is a major milestone in the project, as it forms the core functionality of "EatExact." In addition to successfully integrating the ChatGPT API, we also achieved our goal of providing custom recipe generation with a swift response time of no more than 10 seconds. By utilizing OpenAI's ChatGPT model, the most advanced AI model available nowadays, we ensured that the app delivers high-quality, personalized recipes while maintaining fast response times. The

robust infrastructure of OpenAI allowed us to meet this target, ensuring minimal delays for users as they interact with the application.

We also managed to adhere to our project schedule, delivering the final product on time. Throughout the development process, we made key decisions like adjusting our scope to prioritize core features, which allowed us to stay on track and meet our deadlines, despite some challenges along the way, which are detailed in the challenges chapter on this book.

Regarding our primary objectives of enhancing the quality of life for individuals with dietary restrictions and raising awareness of unique dietary needs within different social groups, we have not yet gathered sufficient user data to conclusively measure our impact. However, the overall feedback from our supervisor has been positive, suggesting that we are on the right path to achieving these goals. We believe that with effective marketing and outreach strategies, "EatExact" has the potential to reach a broad audience and significantly contribute to increased awareness of diverse dietary requirements.

During the development process, we learned several valuable lessons about both our working methods and how we could improve in the future. Our work sessions were primarily conducted together via Zoom, where we wrote code collaboratively and brainstormed solutions to challenges as they arose. While we recognize that this close-knit, collaborative approach is not a common best practice in the industry, where individual contributions and asynchronous work are often encouraged, we found this method effective for our partnership. Given that both of us are relatively new to web development, working closely allowed us to support each other through the learning curve and tackle challenges together. In retrospect, this approach worked well for our specific dynamic, but we also recognize that more individual work could have allowed for faster progress in some areas. Another important lesson we learned is the value of receiving feedback from non-technical users, such as friends and family. While our supervisor provided valuable insights, their familiarity with web applications may not fully reflect the experience of the average user. In retrospect, we realize that we missed an opportunity by not involving non-technical users in testing the app earlier. This type of user feedback would have provided practical insights into user experience and accessibility, helping us fine-tune the app to be more intuitive and user-friendly. Moving forward, we recognize that integrating this kind of user testing earlier in the process would have contributed to a more seamless and accessible user experience.

The success of our project was measured against several criteria. One of our primary goals was to generate precise responses through AI technology, and we successfully achieved this by integrating OpenAI's ChatGPT API. The system is able to deliver accurate and tailored recipes based on user input, which is a key indicator of success. We also ensured that users requesting recipes without harmful ingredients received appropriate suggestions, thanks to well-crafted prompts guiding the AI to consider dietary restrictions and preferences. Additionally, we provided users with a rich variety of recipes by enabling them to generate and save multiple options in each category, offering a broad range of culinary choices to meet diverse needs.

In summary, the development of "EatExact" has largely met our expected outcomes, and we are confident that with further user engagement, we will continue to fulfill the objectives of the project. Our work has laid the foundation for a powerful tool that can enhance the lives of individuals with dietary restrictions, and we look forward to the future potential of the application.

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