

# Review-4 on ZeroWasteChef



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# Overview

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# Introduction



- A sustainable cooking platform called "Waste Chef" focused on reducing food waste
- Innovative recipe recommendation system based on available ingredients
- Smart ingredient matching to prevent food waste
- User-friendly interface with modern design principles
- Real-time recipe suggestions and customization options

# Objectives of the Project



- Primary Objective:
  - Develop a web platform that reduces household food waste by suggesting recipes based on available ingredients
- Secondary Objectives:
  - Create an intuitive ingredient search and matching system
  - Implement user authentication for personalized recipe tracking
  - Design a responsive and accessible interface
  - Establish a scalable architecture for future enhancements

# Proposed Methodology/Architecture/Algorithm/Technique/etc



## Client Layer:

- React Frontend
- TypeScript
- TailwindCSS UI

## API Layer:

- RESTful APIs
- JWT Authentication
- Request/Response handling

## Server Layer:

- Node.js/Express Backend
- Business Logic
- Recipe Matching Algorithm

## Data Layer:

- PostgreSQL Database
- Prisma ORM
- Data Models

# Implementation Details



- Frontend Implementation:
  - React 18+ with TypeScript
  - Component-based architecture
  - Responsive design with TailwindCSS
  - State management with Context API
- Backend Implementation:
  - Node.js/Express server
  - RESTful API endpoints
  - Prisma for database operations
  - JWT-based authentication
- Key Features Implemented:
  - User authentication system
  - Recipe search functionality
  - Ingredient matching algorithm
  - Profile management
- Development Tools:
  - Version Control: Git
  - IDE: VS Code
  - Full Stack Deployment: Render
    - Frontend static hosting
    - Backend service
    - PostgreSQL database

# Results



The homepage of ZeroWasteChef. It features a banner with the text "Cook Smart with What You Have" and "Transform your available ingredients into delicious meals. Smart cooking starts here." Below the banner are two statistics: "200+ Ready Recipes" and "5kg Avg. Waste Eliminated". There are two buttons: "Find Recipes" and "See How It Works". The background shows various dishes.

A dark-themed mobile-style interface for searching recipes based on available ingredients. It asks "What ingredients do you have?" and shows "0/10 ingredients selected". A "New Ingredients" button is available. Below is a section for "Popular ingredients" with cards for Tomatoes, Rice, Potatoes, Onion, Chicken, and Spinach. A "Find Recipes" button is at the bottom.

A dark-themed interface for creating a new recipe. It includes fields for "Recipe Title" (set to "pizza"), "Ingredients" (with a "Add" button), "Cooking Steps" (with three steps listed), "Add Step", "Cooking Time (estimated)" (set to 30), "Budget Range" (set to "Budget friendly (under ₹100)", "Tags" (with "Quick &amp; Easy" checked), "Budget Image" (set to "₹5. Cheap Image"), and "Save to Draft" and "Publish Recipe" buttons.

A dark-themed interface for discovering recipes. It includes a "Discover Recipes" header, a "Quick Search" bar, and a "Craft Your Perfect Recipe Search" section. The search section has dropdowns for "Ingredients", "Dietary", "Cuisine", and "Health", and sliders for "Meal Type", "Servings", "Max Cooking Time", and "Difficulty Level". It also includes a "Preference" button. Below is a "Weather-based Suggestions" section showing four dishes: "Baked Vegetable Italian Style", "Fresh Chicken Mexican Style", "Stir-fried Chicken Mexican Style", and "Baked Beef Chinese Style". Each suggestion has a "View Recipe" button. At the bottom are filters for "All Recipes" and a summary of user stats: "Total Recipes: 1", "Total Views: 156", "Total Likes: 45", and "Most Popular Recipe: Homemade Pizza".

A dark-themed interface for crafting a perfect recipe search. It has a "Craft Your Perfect Recipe Search" header and a "Customize your culinary journey with ingredients and preferences" message. It includes a "Ingredients" dropdown, "Dietary" dropdown, "Cuisine" dropdown, and "Health" dropdown. The "Cooking Preferences" section contains "Meal Type" (radio buttons for "Any meal type" and "Dinner"), "Servings" (set to 2 people), "Max Cooking Time" (set to 30 minutes), and "Difficulty Level" (radio buttons for "Easy", "Medium", and "Hard"). A "Preference" button is also present. At the bottom are "Clear All" and "Find Perfect Recipe" buttons.

A dark-themed dashboard titled "Kitchen Explorer". It features a "Total Recipes: 1", "Total Views: 156", and "Total Likes: 45" summary. Below is a "Quick Analytics" section with "Average Cooking Time", "Recipe Completion Rate", and "Engagement Rate". The "Views" section shows "156 Total views". The "Completion Rate" section shows "Completion Rate: 100% (Last 30 days)". The "Engagement" section shows "Engagement: 5 (Comments received)". At the bottom are sections for "Your Achievements" (with icons for "Waste Monitor" and "Water Saver") and "Recent Activity" (with icons for "Completed" and "Upcoming").

# References

- React Official Documentation  
<https://react.dev/>
- Tailwind CSS Documentation  
<https://tailwindcss.com/docs>
- Node.js Documentation  
<https://nodejs.org/docs/>
- Prisma Documentation  
<https://www.prisma.io/docs>
- PostgreSQL Documentation  
<https://www.postgresql.org/docs>
- Render Deployment Documentation  
<https://render.com/docs>
- TypeScript Documentation  
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Thank you and Any Queries