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We are Cooking

Cooking & Cuisine Social Media

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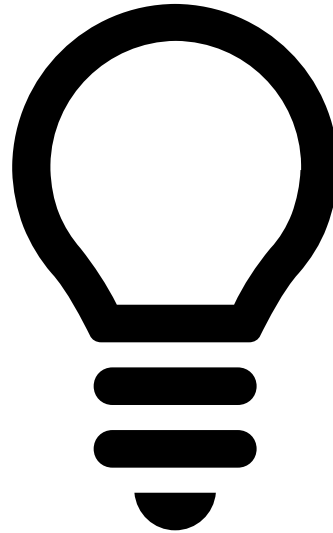
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The topic of the project

Smart Recipe Recommendation Systems: Leveraging AI
and User Behavior for Personalized Cooking Experiences



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Business justification

Why us?

Most of the people from targeted demographic groups do not have time to cook, this way they will be able to connect with others, but concentrate on the important part – cook.

The trends tell us that more people try to eat at home, as it is cheaper and healthier, also it can provide a bonding experience with family or friends.

Target demographic groups - Millennials, Gen-Z, Gen-Alpha



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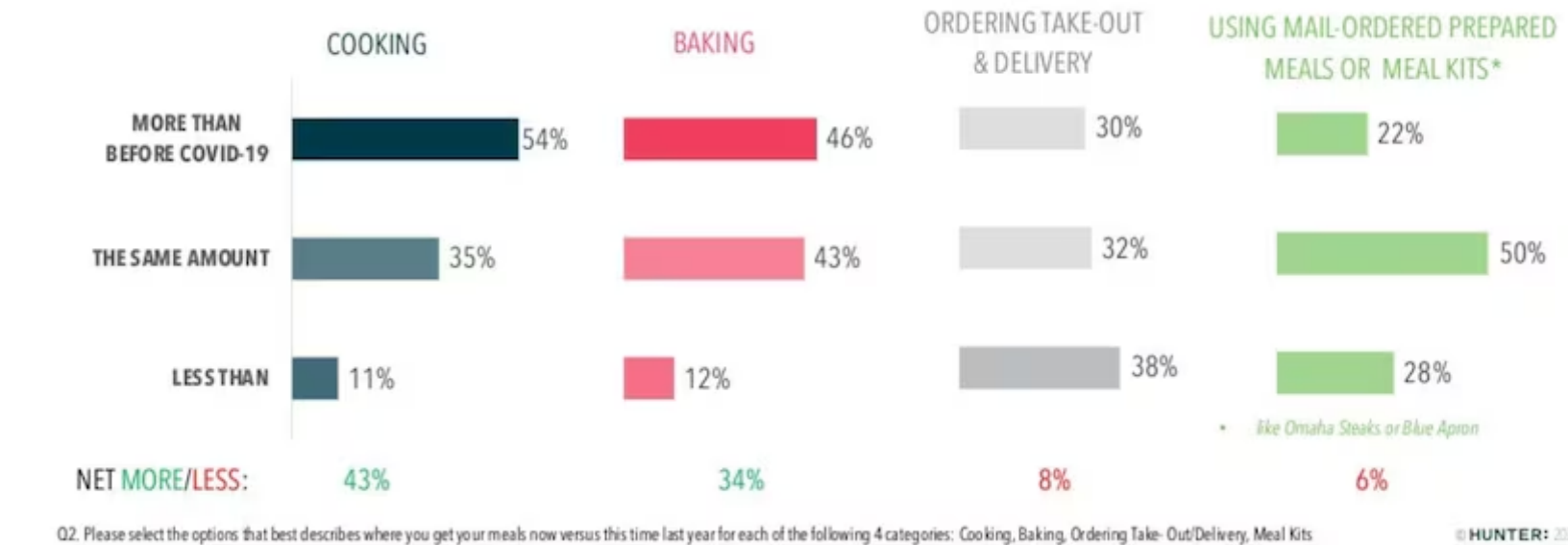


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Business justification

Home Cooking and Baking on the Rise

Over half of consumers are saying they are cooking more now (54%),
and almost as many are baking more (46%).



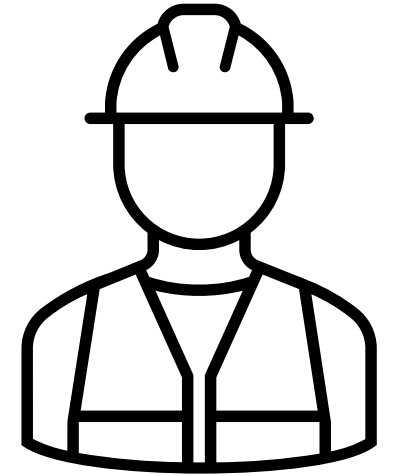
<https://www.foodnavigator-usa.com/Article/2020/04/15/Survey-Cooking-at-home-will-become-the-new-normal-post-pandemic/>
<https://www.firstinsight.com/press-coverage/survey-consumers-to-dine-out-less-cook-at-home-more-in-2025>



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Project scope

- Business research.
- Designing the system architecture.
- Web and mobile applications with user authentication.
- AI model for recipe recommendation system.
- Filtering/search engine implementation.
- Integration of the services.
- Testing the design for flaws.
- Deployment of the web services, mobile and web applications.



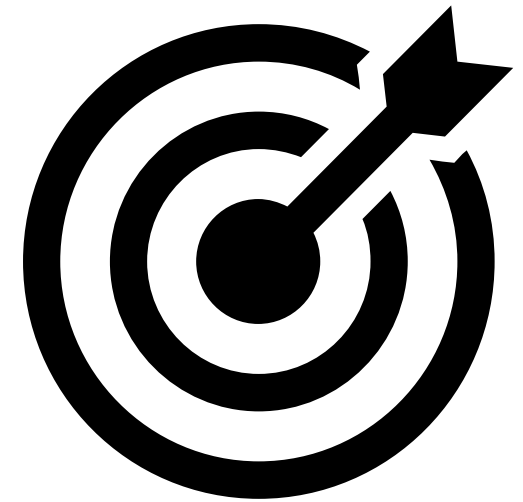


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Goal of the project

The goal of this project is to develop an engaging and fully functional social media app tailored specifically for the world of cuisine and cooking.

The aim is to provide a platform for people that want to bond over cooking experiences and for people that love cooking.





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Primary features to be implemented

- User Accounts and Authentication
- Recipe Discovery (browsing and searching)
- Smart Recommendation System (based on user preferences, behavior, and ratings)
- Search Filters (dietary preferences, categories, etc.)
- Interactive Public Profiles (view and follow users)
- Recipe Submission and Sharing (upload recipes with ingredients, instructions, images)
- Recipe Rating and Review System
- User Preferences Customization (dietary restrictions, cuisine types)
- Recipe Collections/Lists (recipe lists)

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Secondary features to be implemented

- In-App Shopping List (add ingredients to shopping list)
- Social Media Integration (share recipes/profiles)
- Fridge recipes (add ingredients from fridge, show recipes)
- Nutritional Information for Recipes
- Push Notifications (recipe updates, comments, new followers) Advanced Search Options (seasonal ingredients, allergens)
- Recipe Instructions with Step-by-Step Videos or Photos
- Community Challenges or Events (cooking challenges, themed events)
- Collaborative Recipe Creation (real-time editing)

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State of art: Competitor Analysis

1. Yummly

- AI-powered smart recipe recommendations based on user preferences.
- Grocery delivery and shopping list features.
- Integration with smart kitchen appliances.

2. Tasty (BuzzFeed)

- Short-form recipe videos for visual learners.
- Basic personalization and filtering.
- Focus on quick and trendy meals, especially for younger audiences.

3. Allrecipes

- Large community and recipe database.
- User-submitted recipes with detailed reviews.
- Basic personalization and meal planning tools.



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State of art: Competitor Analysis

4. Whisk

- Recipe saving and clipping from any website.
- Meal planning and smart shopping list.
- Community features like groups and shared lists.

5. Cookpad

- Focus on home cooks sharing original recipes.
- Strong community interaction, commenting, and “Cook Snap” feature.
- Minimal smart recommendation or personalized discovery.

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State of Art: USP

- Smart Recommendation System
 - Personalized suggestions based on user preferences, interactions, and reviews.
 - Learns over time for smarter, more accurate recommendations.
- Collaborative Recipe Creation (Real-Time Editing)
 - Users can co-create and edit recipes together in real time, similar to Google Docs.
 - Ideal for families, friends, and cooking groups.
- Community Challenges and Events
 - Themed cooking challenges, seasonal events, and leaderboards.
 - Encourages engagement, competition, and repeat app visits.
- Advanced Search Options
 - Filters for seasonal ingredients, allergens, and dietary restrictions.
 - Enables hyper-personalized recipe discovery beyond basic search.
- Fridge-Based Recipe Suggestions
 - Users input available ingredients; the app suggests recipes accordingly.
 - Integrates smart pantry management with recipe generation.

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Techniques & Technologies to be used

Flutter: Frontend

Docker compose

- Containerization and deployment of entire system
- Easy migration and platform independence
- Brings up/down all services with a single command

Keycloak (IAM - Identity & Access Management)

- Provides authentication & authorization, OAuth2 with OIDC with minimal setup
- Perfect solution for microservice architecture

Spring Cloud Gateway with Spring Security, OAuth2 + OIDC (API Gateway)

- Securing services by making them accessible only through gateway
- Information filtering on gateway for services not implementing OAuth2 or OIDC

PostgreSQL: The best DB for nearly every task

Liquibase

- Changelog and configuration based method of implementing changes for databases
- Easyness of working with already populated DBs and new ones

Other Small Frameworks (Based on Microservice Language)

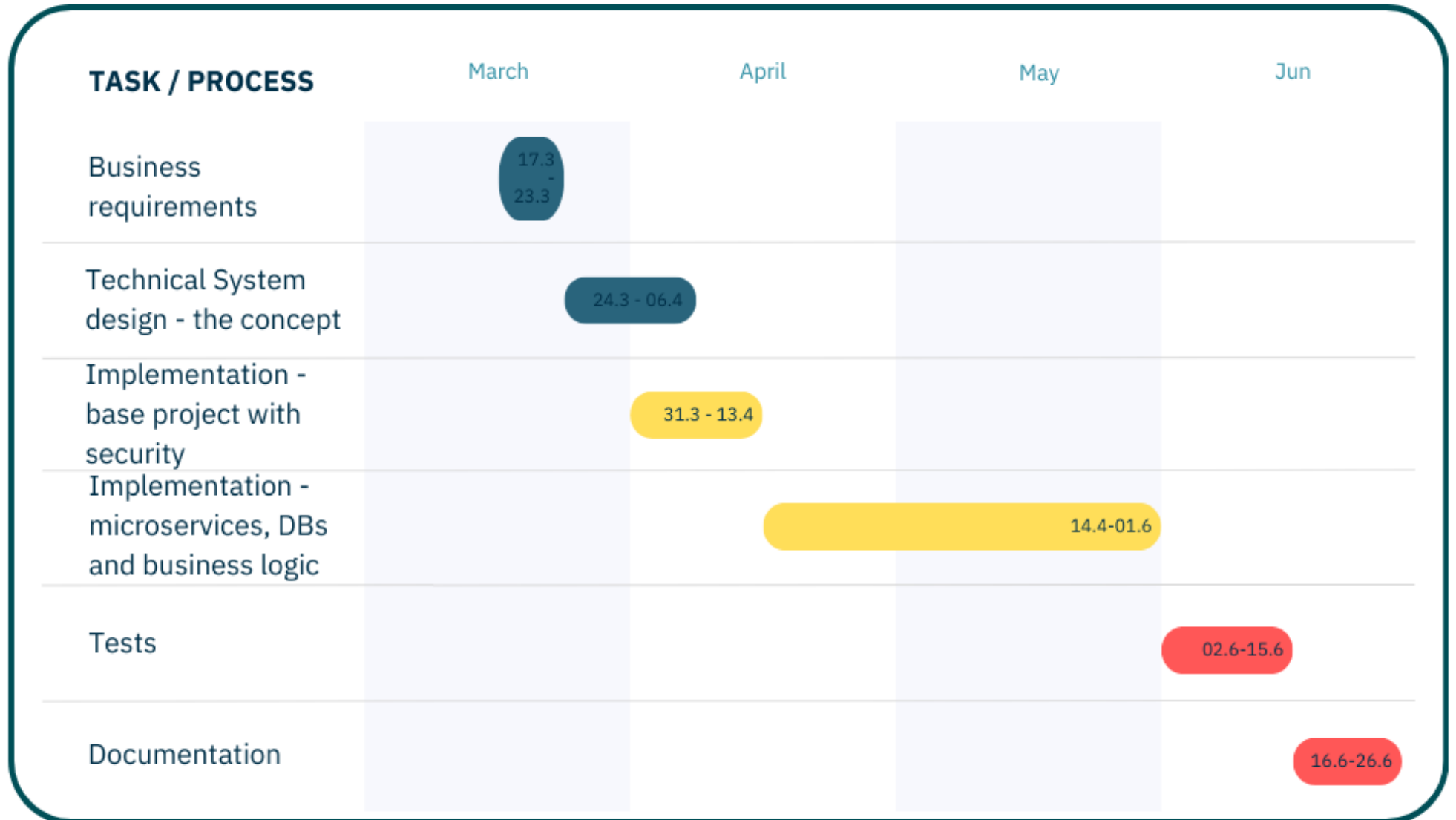
Python: Recommendation system





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Project plan with milestones



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Cost estimation

Payment $60 \text{ h} \times 5 \text{ people} \times 60 \text{ PLN} = 18\,000 \text{ PLN}$

Social security and insurance (19.64%) = 3 535 PLN

Total direct costs = 21 535 PLN

Indirect costs (estimated ~10%) = 2 154 PLN

Total cost = 23 689 PLN

Profit = 0 PLN

VAT Tax (23%) = 5 448 PLN

Product cost = 29 137 PLN

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