# Cloud Computing Workshop with AWS

## Project Proposal Document

This document will describe the product in terms of usage and design. Includes the project description, expected components, and planned work (estimated length: 5-10 pages). The document will be written in English. The specification document must be submitted on GitHub for all workshops by **December 15, 2024**, along with a link to the GitHub repository and the project registration on the workshop’s website.

### Project Information

Project Name:  
PrePal

Student Names:  
Matan Moskovich, Niv Siman Tov, Lilach Kupherstein  
  
Project Track:  
[Select one: Applicative, Framework, Algorithmic/Research]

### 1. Background

### The grocery shopping experience has remained relatively unchanged for decades, requiring individuals to either visit a supermarket physically or manually search for and select items on online platforms. Both options can be time-consuming and inefficient. For individuals with disabilities, mobility challenges, or those with busy lifestyles, this process becomes even more daunting. Advances in AI and digital services now offer an opportunity to revolutionize grocery shopping by integrating intelligent conversational interfaces with seamless delivery mechanisms. Our project leverages these technologies to create an inclusive, user-friendly platform that simplifies the entire process, from meal planning to grocery delivery, ensuring convenience for all users.

### 2. Problem Statement

### Traditional grocery shopping and even online grocery platforms require users to manually select individual items, which can be tedious and time-consuming. Additionally, there is often no integration between meal planning and item selection, leaving users to calculate the ingredients needed for recipes on their own. For individuals with disabilities, the elderly, or those unfamiliar with online systems, these processes can be particularly difficult. Current solutions lack a streamlined, intuitive system that combines recipe planning, item selection, and grocery delivery in a single conversational interface.

### 3. Proposed Solution

Our proposed solution is a conversational, AI-driven grocery shopping platform. Users can engage in a simple chat to specify their meal preferences or recipe ideas, and the system will:

* Provide a tailored recipe based on the user's input.
* Generate a complete shopping list of required ingredients.
* Automatically select a nearby supermarket based on the user's location.
* Enable a seamless order process through an integrated delivery service like Wolt.

The platform combines AI (using the ChatGPT API) for natural language processing and inventory integration from multiple supermarkets to ensure availability and accuracy of items. This solution creates a more accessible, intuitive, and efficient way to shop for groceries.

### 4. Alternative Approaches & Market Research

### Existing grocery platforms primarily focus on traditional online shopping, where users must manually search for products and add them to their cart. Recipe platforms, on the other hand, provide suggestions but do not integrate with grocery delivery services. Some alternative approaches include:

* Platforms like Shufersal online, which allow online grocery shopping but lack recipe planning integration.
* Recipe-focused websites such as Foody, which provide recipe suggestions but lack the option for direct grocery ordering.

Our solution stands out by integrating these functionalities into a single, seamless conversational interface, specifically catering to accessibility needs and convenience.

### 5. Innovation

Our platform introduces several key innovations:

* **Conversational Shopping:** Users interact with the platform in natural language to generate recipes and place orders without manual browsing.
* **Accessibility:** Designed with user-friendly features to assist individuals with disabilities or limited tech knowledge.
* **Seamless Integration:** Combines meal planning, item selection, and grocery delivery into one streamlined process.

### 6. Target Audience

The primary users of the platform include:

* Individuals with disabilities who require a more accessible shopping experience.
* Busy families or professionals who seek a quick and efficient grocery solution.
* Cooking enthusiasts looking for inspiration and easy ingredient ordering.
* Elderly individuals who may find traditional shopping platforms overwhelming.

### 7. Features and User Flow

Main Features:

* **Conversation-Based Shopping List:** The system generates a shopping list based on the user's conversation. Whether the user requests a recipe, mentions specific ingredients, or asks for items like toiletries, the platform understands and builds a tailored shopping list.
* **Recipe Generator:** Users can request recipes through chat, and the system suggests options tailored to their input, seamlessly adding the required ingredients to the list.
* **Smart Shopping List:** Automatically compiles a comprehensive shopping list, whether based on a recipe or specific item requests, ensuring all user needs are covered.
* **Supermarket Selection:** Identifies the nearest supermarket with the required items in stock.
* **Integrated Ordering:** Enables direct order placement and secure payment through the platform.
* **Delivery Coordination:** Partners with delivery services like Wolt to handle logistics, ensuring fast and reliable delivery.
* **Vendor Portal for Supermarkets:** Supermarkets have their own portal where they receive incoming orders, verify product availability, and manage packaging and delivery coordination with Wolt.

**User Flow:**

1. **Customer Side:**
   * The user initiates a chat and describes their needs (e.g., "I want to bake a cake" or "I need laundry detergent and shampoo").
   * The system processes the request and either suggests recipes or generates a shopping list tailored to the user’s input.
   * The user reviews the list, makes adjustments if needed, and confirms the order.
   * The system selects the nearest supermarket and processes the payment.
   * The order is sent to the supermarket, and Wolt handles the delivery.
2. **Supermarket Side:**
   * Supermarkets access the platform through a dedicated vendor portal.
   * Incoming orders are displayed with items list.
   * The supermarket verifies product availability and prepares the order.
   * Once the order is packed, the supermarket marks it as ready for pickup.
   * Wolt receives a notification and collects the order for delivery to the customer.

This dual-flow system ensures a seamless shopping experience for the customer while providing supermarkets with a streamlined way to handle orders efficiently.

### 8. External Dependencies

* ChatGPT API: For natural language understanding and interaction.
* Wolt API: To manage delivery logistics and fulfillment.
* Payment Gateway: For secure transactions.

### 9. Deliverables

The tangible outputs of this project include:

* An interactive web platform with a conversational interface for grocery shopping.
* Backend integration with ChatGPT, supermarket APIs, and delivery services.

### Submission Details

GitHub Link:  
<https://github.com/lilachKup/PrePal.git>