PARSHVANATH CHARITABLE TRUST'S
A. P. SHAH INSTITUTE OF TECHNOLOGY
Department of Information Technology
(NBA Accredited)

SmartPlate: ML Based Meal delivery System

Group members with Student Id

Shweta Bhutada 21104007

Manjiri Gole 21104006

Akshata Nalavade 21104003

Project Guide

Ms. Geetanjali Kalme

Contents

1. Introduction

- A user-friendly website for an online recipe box ordering service that enables customers to **easily browse, customize, and order recipe boxes with pre-portioned ingredients** and **step-by-step cooking instructions.**
- Problem Identified :

➢ **Busy lifestyle** mean less time for meal planning, grocery shopping, and cooking.

➢ People enjoy cooking but **lack time/resources** for ingredients.

➢ People cook the **same dishes** repeatedly due to routine.

- Solution Proposed :

➢ Caters to busy individuals and families, **streamlining meal planning**.

➢ Delivers **fresh ingredients and recipes** to your door, **saving time**.

2. Objectives

1. To **offer a convenient solution** for busy individuals.
2. To implement a user-friendly interface for **easy navigation and recipe selection.**
3. To provide a variety of recipes so users can explore **various cuisines and recommend recipes** to users based on their past shopping experience and feedbacks of other users.
4. To integrate a **dynamic ingredient selection** that adjusts ingredient quantities based on user preferences, minimizing waste and optimizing ingredient usage.

3. Scope

i. Can be the platform that **suggests and recommends recipes** to users based on feedback from other users. The platform can suggest recipes that align with individual tastes and dietary preferences.

ii. Can be the platform that customizes recipes to their **dietary requirements and ingredient preferences**, providing a tailored cooking experience.

iii. Can be the platform that incorporates a **chatbot feature** to address basic user queries effectively. Users can interact with the chatbot to receive instant assistance.

4. Literature Survey

Sr. No	Title of Paper	Year of Publication	Technology used	Drawbacks
1.	NLP and ML approaches for food categorization and nutrition quality prediction compared with traditional methods	2023	Natural Language Processing (NLP), Word Embeddings, Machine Learning (ML)	Inadequate feature selection can harm model performance. Deploying complex ML models often demands substantial computational resources.
2.	Food Demand Prediction using Statistical and Machine Learning Models	2022	multiple linear regression, lasso, ridge, Bayesian ridge regression, SVR, decision tree, random forest, and Gradient boosting regression models such as Gradient Boosting, XG-Boosting,	Inaccurate or incomplete data can lead to poor prediction performance. May suffer from overfitting, where the model captures noise in the training data instead of underlying patterns

Sr. No	Title of Paper	Year of Publication	Technology used	Drawbacks
3.	Raspberry Pi based Nutritional Health Kits for Diabetic Patients	2022	Raspberry Pi, Sensors, Web Development, Data Analysis Tools	While Raspberry Pi is generally considered affordable, the cost of additional components. Personal health information, may raise concerns about privacy and security.

5. Feature /Functionality

1. Explore **categorized recipes** with detailed pages, images, and nutritional info. Includes **user login for personalized experience.**

2. Recommendation System

Based on the user input and user preferences our system can recommend recipes that user may like.

3. Chatbot

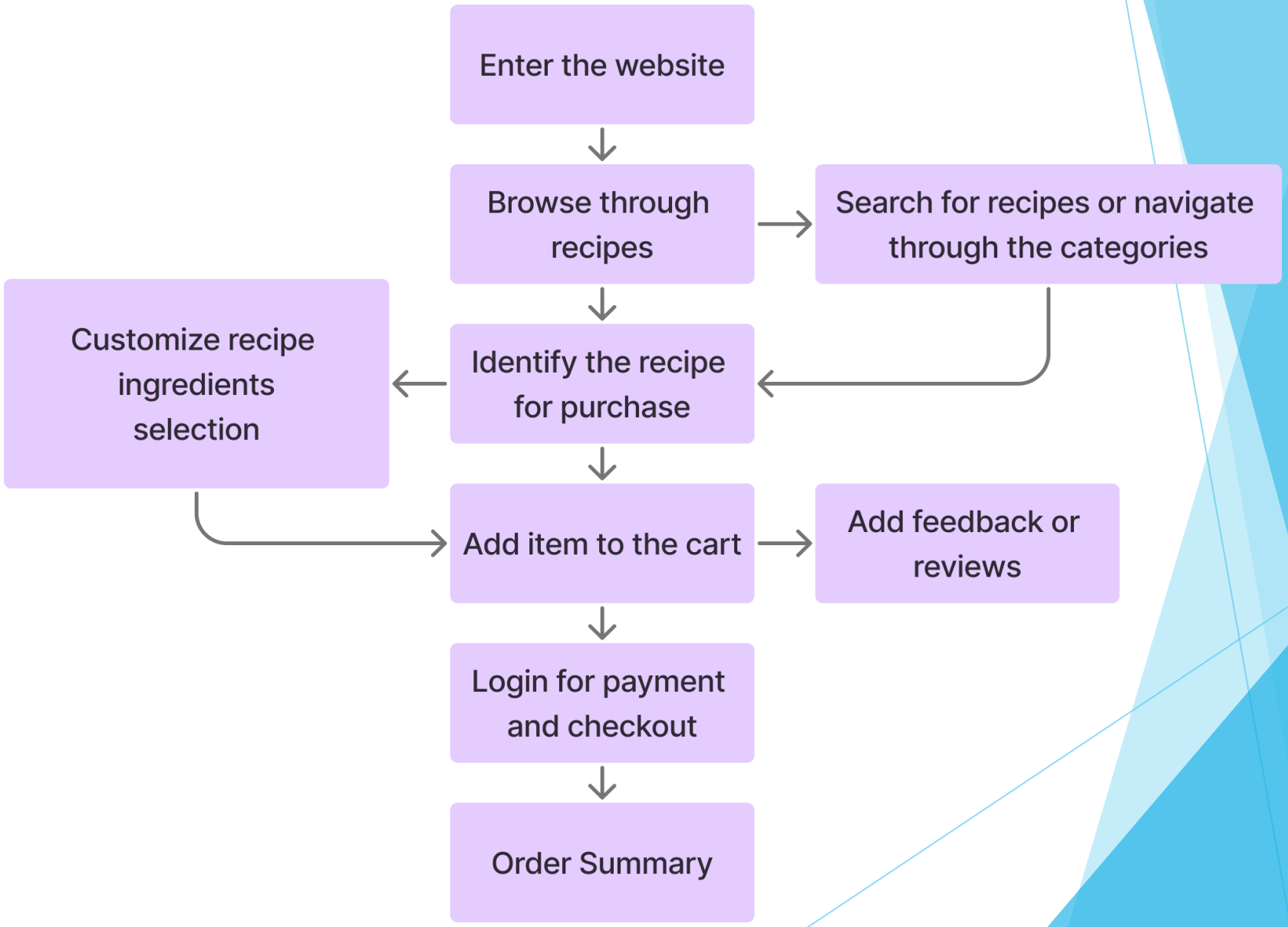
If the users have any frequently asked questions or any query regarding something they can use the Chat-bot to solve their query.

6. Technology Stack

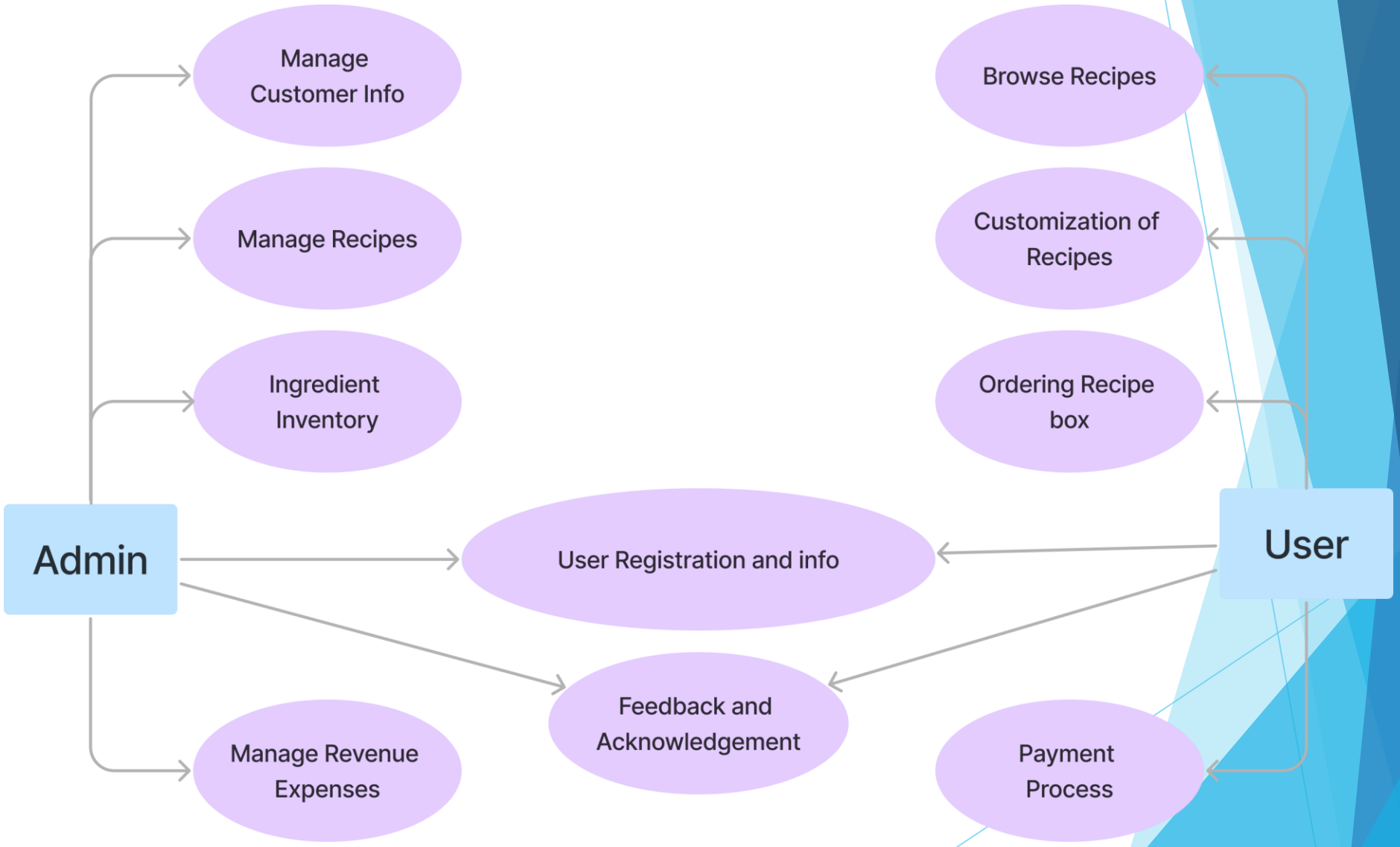
Write what you have planned to develop front end (GUI) & Backend (Database if applicable)

1. --HTML & CSS
2. - JavaScript
3. - Python
4. - Database - MongoDB

7. Block Diagram



8. Use Case/Data Flow Diagram



9. Suggestions in Review-1

1. Complete Checkout page.
2. The project should start from the Home page rather than the login page.
3. Implement review and ratings in terms of stars or smilies.

Result and Discussion

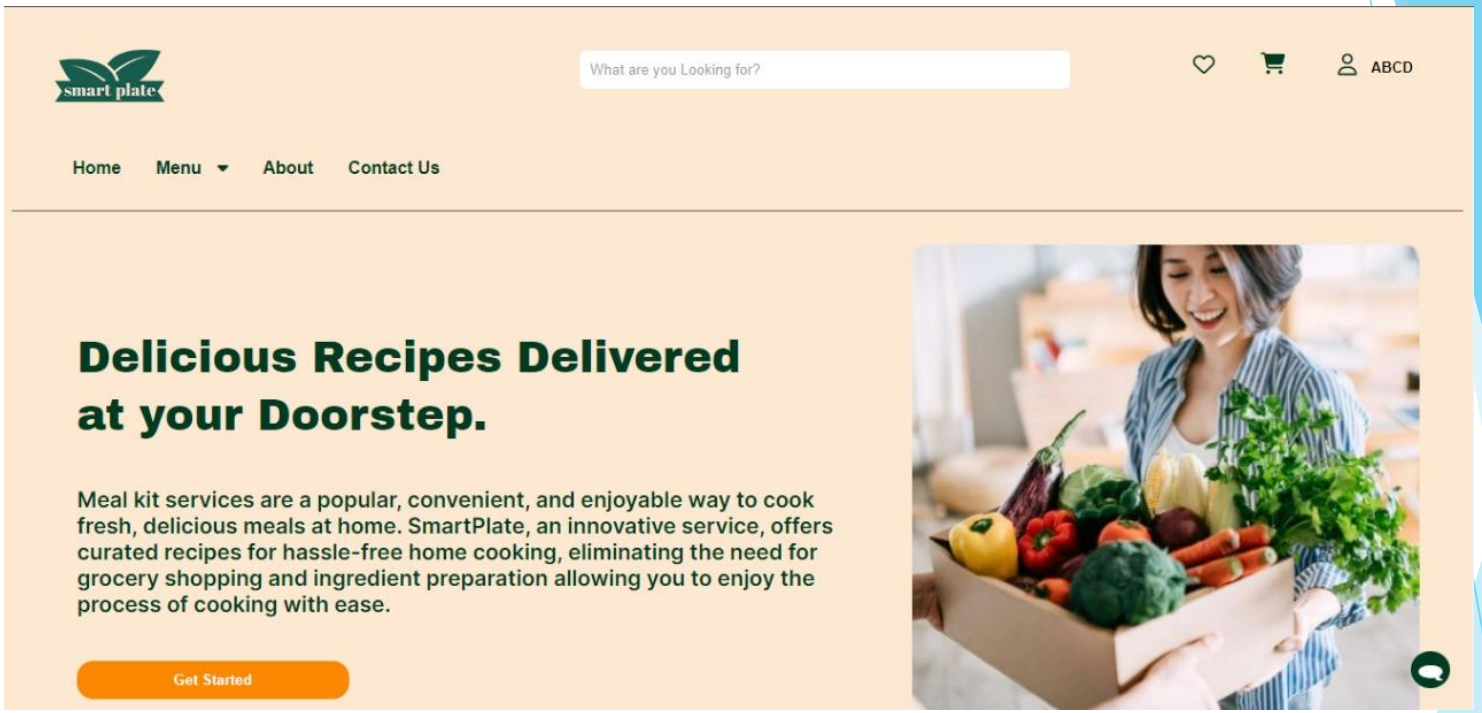


Fig.1. Home Page

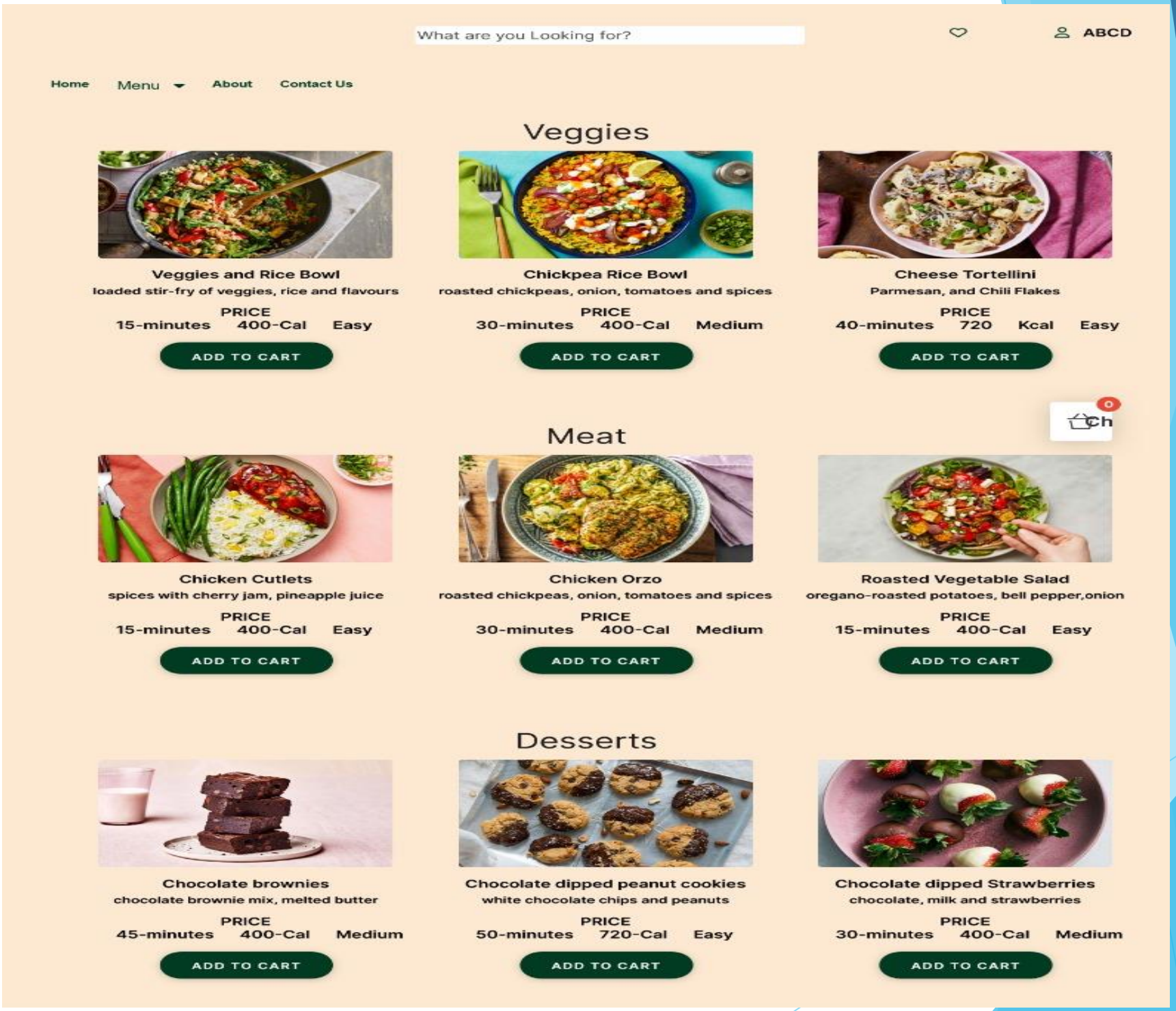


Fig. 2. Categories page

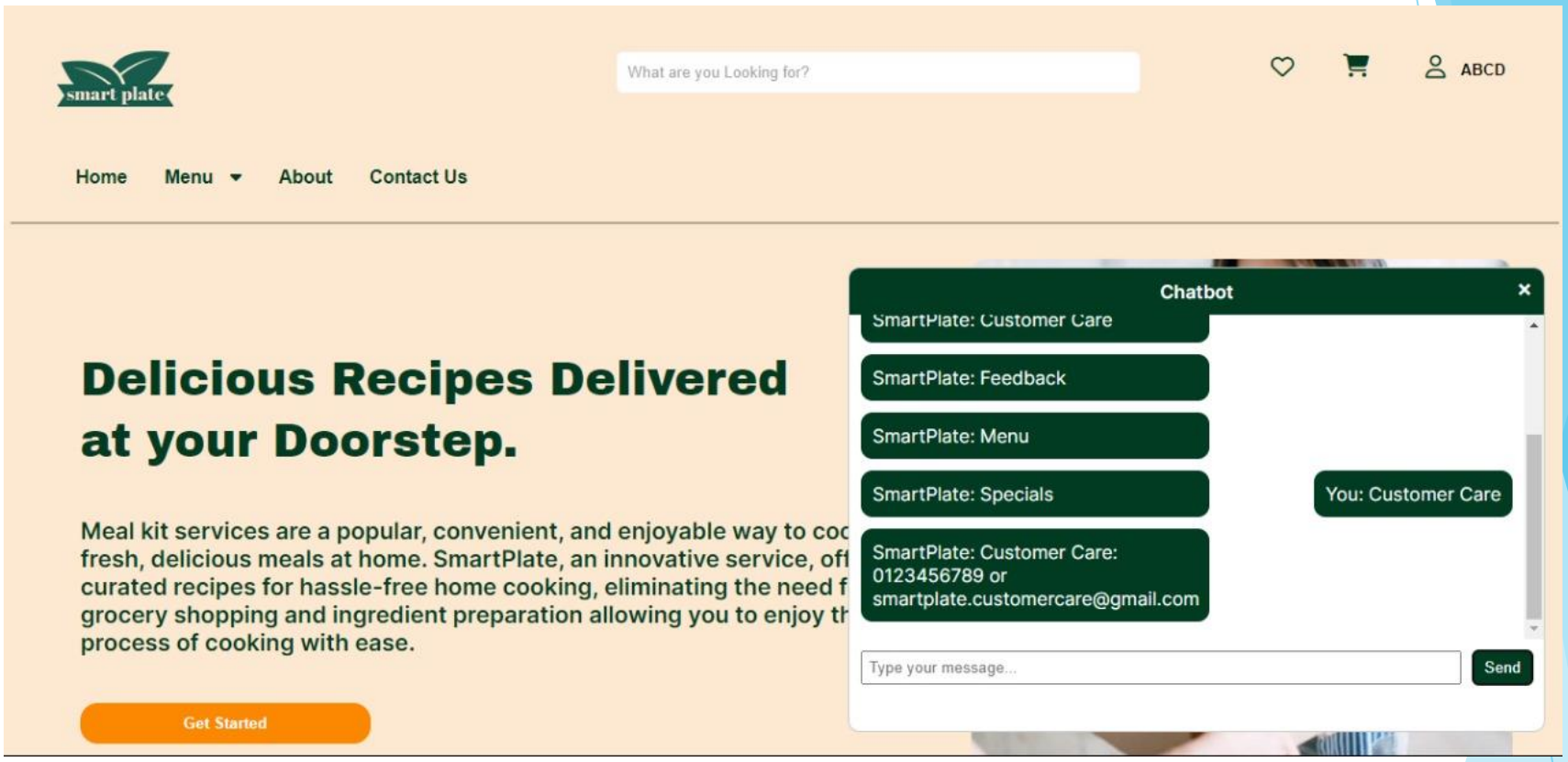


Fig. 3. Chatbot

Conclusion

i. Extensive research and thoughtful implementations have led to the development of a recipe website.

ii. The journey started with understanding the challenges of busy individuals passionate about cooking.

iii. Features are user-centric, shaped by feedback and preferences, creating a dynamic environment.

iv. The visually appealing design is continually refined for intuitiveness and accessibility.

v. Users can navigate diverse recipes easily and enjoy a seamless ordering process.

Future Scope

i. **Enable Delivery Tracking:** Implement a delivery tracking system that provides users with real-time updates on the status of their orders. Users should be able to see the estimated delivery time and track the delivery's location as it progresses.

ii. **Serving Adjustments**: Users to adjust portion sizes to match the number of servings they require, ensuring meals are perfectly portioned for their needs. This empowers users to create dishes that suit their needs.

iii. **Cooking Tutorials and tips**: Tutorial videos can demonstrate step-by-step instructions for preparing recipes, while cooking tips provide helpful insights and shortcuts to improve efficiency and quality. Chef recommendations can offer expert advice on cooking methods.

References

[1] Natural language processing and machine learning approaches for food categorization and nutrition quality prediction. (Guanlan Hu, Mavra Ahmed, Mary R.)

[2] Food Demand Prediction using Statistical and Machine Learning Models (Sasikumar Jayapal)

[3] Raspberry Pi based Nutritional Health Kits for Diabetic Patients(Preethi Mannepally, Krishna Chaithanya, Bhaskar Bhanavath)

[4] On the potential of recommendation technologies for efficient content delivery networks

[5] https://medium.com/bithubph/payment-integration-with-node-js-express-request-and-paystack-api-8cebf51c1f52

Thank You...!!