suyati
access to fluid cx

Group A

Food Order Recommendation System

Discovery Phase

Summary

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Executive Summary

- The food order recommendation software is a web-based application designed to improve customer satisfaction and increase revenue for restaurants and food delivery services.
- The software collects data on customer preferences, order history, and other relevant information to create personalized recommendations for each customer.
- It uses machine learning algorithms to continuously improve the accuracy of its recommendations over time.
- By providing personalized recommendations the food order recommendation software helps businesses stand out from their competitors and build lasting relationships with their customers.

Understanding and Approach

Our Understanding

We have to develop a web application for a food order recommendation system that has the following features:

- Allows users to order food, review orders, cancel orders and rate restaurants.
- Display order recommendations on the Dashboard UI.
- Display restaurant recommendations on the search bar.

Our Approach

- An **AI/ML model** has to be developed with the help of the dataset which can predict food or restaurants to the user based on his/her previous orders.
- The **Frontend** team will be working on the creation of pages like login, user dashboard, search results tab, order placing page and every details regarding the UI/UX.
- The **Backend** will work on displaying the food or restaurant recommendations to the user and for providing the functionalities of the website.

Scope of Work

The scope of work for this system includes:

- **Home Page**
  - Basic information about website
- **Login Page**
  - User authentication and authorization
  - Sign in with Google account (Optional Feature)
- **Sign Up page**
  - Reading user data such as Name, Age, Address
- **User Dashboard**
  - Recommended Orders Section
  - Search Bar
- **Restaurant Page**
  - Display restaurant details
  - Option to add item to cart
  - Indicator regarding Grievances
    - Status - Green, Orange and Red
- **Cart**
  - Proceed to payment
  - Order Details
  - Rate the restaurants and their services

Scope of Work

- **Payment Page (Mockup)**
  - Select Payment Option
  - Read payment information from user
  - Proceed to pay
- **Order on Way page (Mockup)**
  - Delivery Time
  - Cancel Order
    - Gets disabled after a threshold time
- **Grievance page**
  - Register complaint regarding Restaurants and Previous Orders

Out of Scope

The following tasks are considered out of scope for this project:

- **Nutritional Analysis**
  - The system does not provide a detailed nutritional analysis of the food.
- **Delivery Logistics**
  - While the system may suggest food items or meals to users, it would not be responsible for handling delivery logistics or coordinating with delivery drivers.
- **Payment processing**
  - This system does not include processing of payments or handling of financial transactions

Technology Landscape

Frontend:

- React.js
- HTML/CSS
- JavaScript
- Figma

AI/ML:

- Jupyter Notebook
- Flask

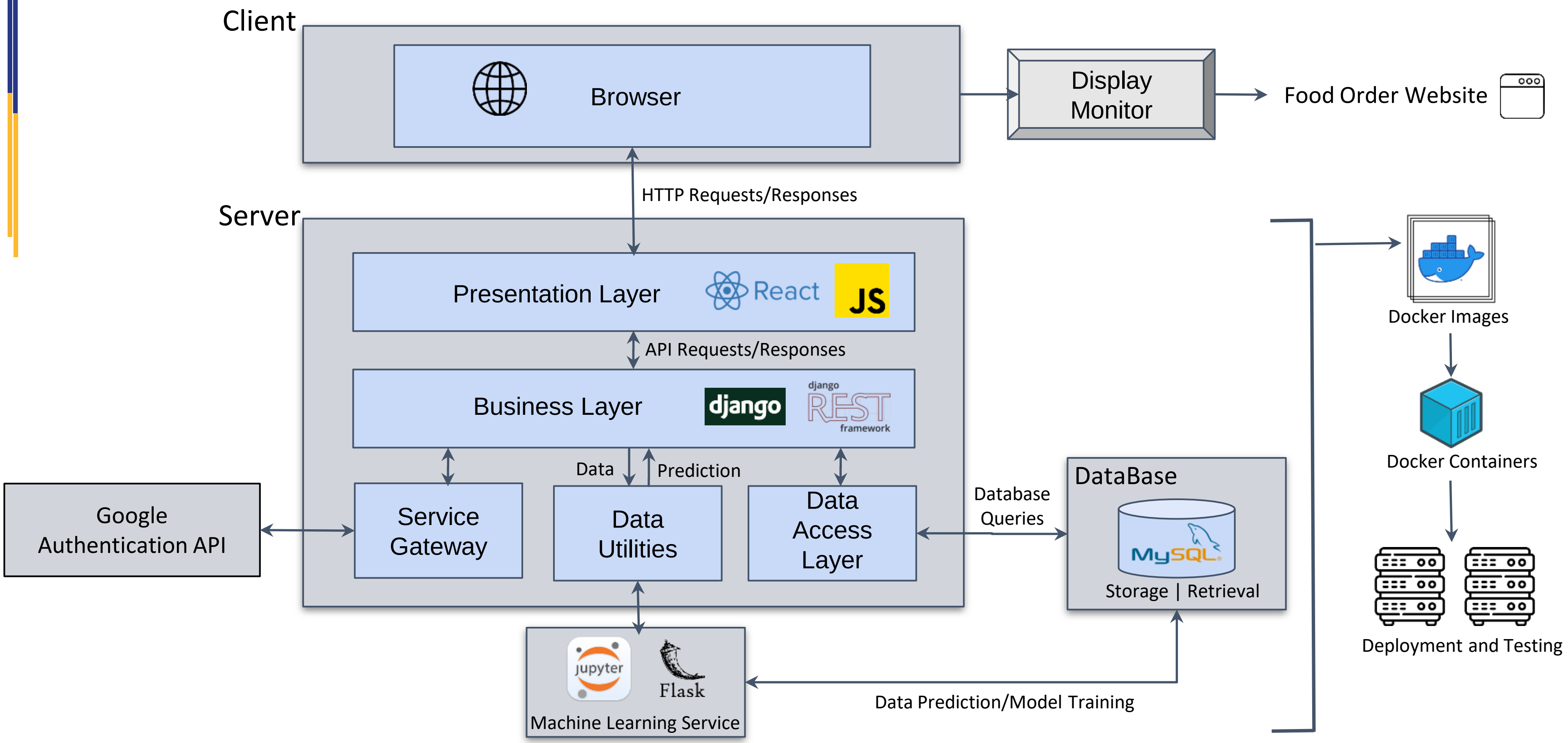
Backend:

- django
- django Rest Framework
- Python
- MySQL

Other:

- Visual Studio Code
- Docker
- Git

Proposed Architecture



Data Exploration for ML Model

- By using hybrid filtering algorithm, the model will recommend based on collaborative filtering and content based filtering methods.
- In collaborative filtering, If the current customer has not bought the goods or services like the matched customers, the algorithm will recommend this goods and services to the current customer.
- Content based filtering algorithm recommends food items based on the similarity of their attributes with the user's past preferences.
- By performing exploratory data analysis on the dataset, the identified features for building the machine learning model are : location_type, mean_rating, serving_distance, opening_hours, item_names, deliver_charge, gender, cuisine_type,is_breakfast and is_favourite.
- The model will predict recommended dishes as well as recommended restaurants for the user in user dashboard and search respectively.
- The target variable of the prediction will be dish_id and vendor_id for dish recommendation and restaurant recommendation respectively.

DevOps/MLOps

Version Control

- GitHub Strategy version control system is to be used to manage the code throughout the project.
- This makes it easier to manage changes to the code, and ensures that the code can be rolled back if needed.

Containerization

- Docker is used as the containerization tool to package the code into containers.
- It can help to deploy and manage the application, and ensures that it can be deployed consistently across different environments.

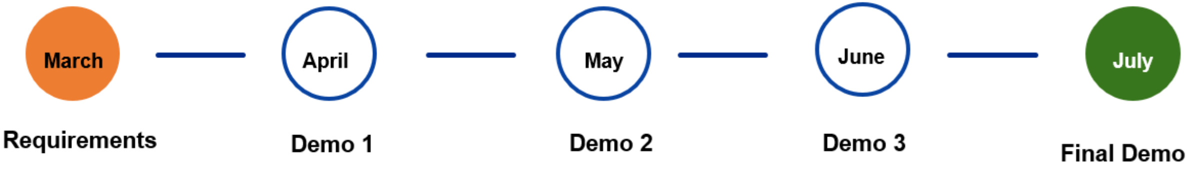
Model Management

- Model management in Jupyter Notebook will allow for efficient experimentation with different models and easy deployment of the final trained models to the web application.

Proposed Team- Short Term

Name	Branch	Area
Jaison T Poulose	ECE	Frontend
Roshan Davis	CSE	Frontend
Ashwin Raguraj	CSE	Backend
Antony Thomas	CSE	AI/ML

Project Phases and Timelines



March — April — May — June — July

Requirements, Demo 1, Demo 2, Demo 3, Final Demo

Phase 1: End of April

- Creation of web pages
- Identification of correlated features for ML Model

Phase 2: End of May

- Setting up of functionalities of the website
- Finalisation of ML Model

Phase 3: End of June

- Fully functional website with integrated Frontend,Backend and AI/ML model

Phase 4: End of July

- Final Demo and Deployment of proposed website

Dependencies and Assumptions

Dependencies:

- The system will depend on an internet connection for communication with external systems, such as Service gateways.
- The system will depend on the availability of APIs provided by third-party systems such as obtaining OAuth 2.0 client credentials from the Google API Console.
- The system will depend on the availability of up-to-date and accurate food menu data from the restaurant owners.

Assumptions:

- The food order system will be developed using Python programming language.
- The system will be developed using Agile development methodology.
- The system will be developed to run on browsers running on Windows, MacOS.
- The users will have basic computer skills and knowledge of how to use a web-based application.
- The data used in the system will be accurate and valid.

Thank You