Software System Development (Monsoon 2023)

Project Requirements Submission

Team Name: SSD_M2023_30_RONS

Team No.: 30

Project Title: Nutrition counter

Project No.: 8

Instructor/Mentor: Charu Sharma

Project GitHub Repository URL: [IAmOnkarSawant/SSD_PROJECT: Nutrition (github.com)](github.com)

Members Details:
1. Onkar Bharat Sawant (2023201024)
2. Nithin Venugopal (2023201033)
3. Shubham Jaiswal (2023201070)
4. Rhitesh Kumar Singh (2023202013)

Requirements

1. Stakeholders

- Individual Consumers
- People with Dietary Restrictions
- Athletes and Fitness Enthusiasts
- Weight Management Seekers
- Patients with Medical Conditions
- Parents and Caregivers

2. Roles and Responsibilities of Team Members

Onkar Bharat Sawant (Roll No. 2023201024):

- Backend Development
- Middleware development
- Application workflow management
- Testing
- Product Analysis

Nithin Venugopal (Roll No. 2023201033):

- Frontend Development
- UI designing
- Database maintenance
- Testing
- Product Analysis

Shubham Jaiswal (Roll No. 2023201070):

- Machine Learning

- Frontend Development
- Database maintenance
- Testing
- Product Analysis

Rhitesh Kumar Singh (Roll No. 2023202013):

- Machine Learning
- Data Acquisition and Processing
- Middleware development
- Backend development
- Product Analysis

3. Requirements in Detail

- User Interface (UI)
  - Description: Web pages (landing, scanner, recommendation) guiding app usage.
  - Category: Frontend
  - Notes: Informative and user-friendly design.
  - Owner: Nithin Venugopal, Shubham Jaiswal

- Backend Server
  - Description: Handles app's core functionality and data processing.
  - Category: Backend
  - Notes: Crucial for the app's operations.
  - Owner: Onkar Sawant, Rhitesh Kumar Singh

- Database
  - Description: Stores user details, ingredients, and intake information.
  - Category: Backend
  - Notes: Central data repository.
  - Owner: Shubham Jaiswal, Nithin Venugopal

- Image Processing Module and OCR Engine

- Description: Preprocesses images and extracts data using OCR.
- Category: Frontend
- Notes: machine learning model.
- Owner: Rhitesh Kumar Singh

- Overall Application Connectivity
  - Description: Ensures seamless end-to-end app functionality.
  - Category: Middleware
  - Notes: connectivity of frontend and backend.
  - Owner: Rhitesh Kumar Singh, Onkar Sawant

- Recommendation
  - Description: Retrieves and displays database content.
  - Category: Backend
  - Notes: Precise prediction of required metrics.
  - Owner: Onkar Sawant
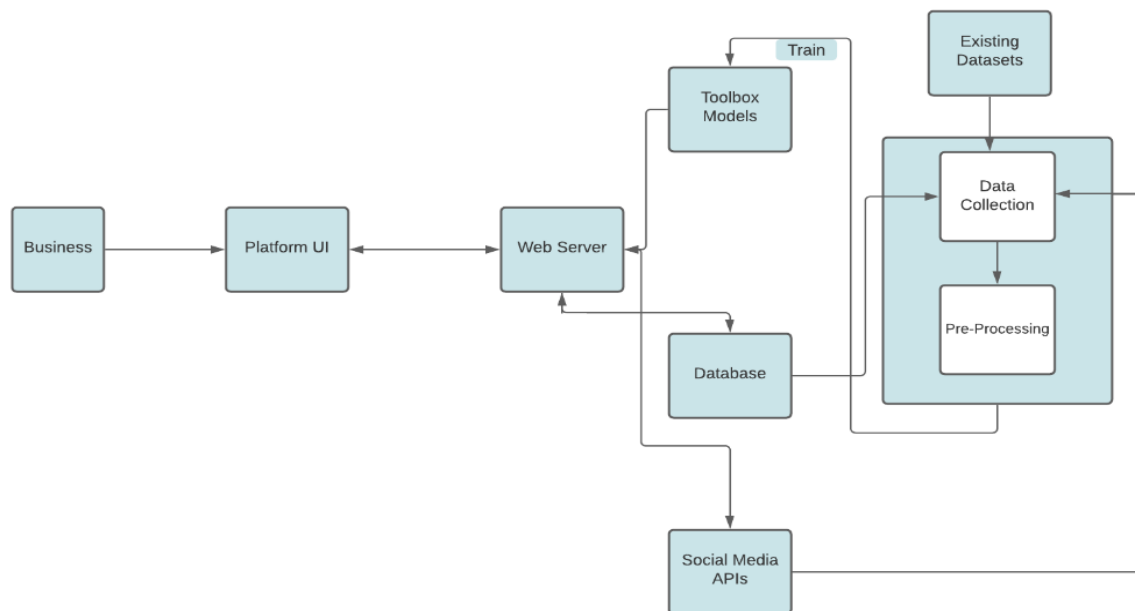
4. Architecture of project

Fig. Architecture diagram

5. Technology Stack

Font End:

- ReactJS: This JavaScript library provides the framework for building user interfaces and managing the state of the application.
- HTML/CSS: HTML is used for structuring web content, while CSS is used for styling and layout design.
- JavaScript: Besides ReactJS, plain JavaScript will be needed for additional functionality or customizations.
- React Router: This library allows for client-side routing, enabling navigation within the React application.
- State Management (e.g., Redux, Context API): Depending on the complexity of the application, need state management tools like Redux or React's Context API to manage and share state across components.
- Axios or Fetch: These libraries are used for making HTTP requests to the backend API.UI Framework/Library (optional): UI frameworks or libraries like Material-UI, Ant Design, or Bootstrap for styling and components.

Back End: (May be changed based on further research)

- FastAPI: FastAPI will serve as the backend for the application, handling HTTP requests and responses.
- MongoDB: MongoDB is a NoSQL database used for data storage and retrieval.
- Python: Python programming language for the backend.
- RESTful API Design: used to design and implement RESTful APIs using FastAPI for communication between the front end and back end.
- Middleware: Middleware will be used for various purposes like logging, error handling, or authentication checks.

Others:

- Development Tools: To facilitate development, code editors such as Visual Studio Code and version control systems like Git are essential.
- Package Management: npm (Node Package Manager) and pip (Python Package Index) serve as crucial tools for efficiently managing frontend and backend dependencies, respectively.