# FOODINDAHUD

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**Abstract -** *"FoodinDaHud" is a project conceptualised with the aim of giving users recipe-level control over what they want to eat in a particular dish. Users can create, share, and use other people's recipes on this platform. Also, this platform provides in-depth nutrition details for a particular food ingredient and the overall dish. This project consists of a mobile application capable of running on both Android and iOS. This project is designed to be the easiest way to control what we eat and doesn't eat in a particular food dish.*

***Key Words***: Online platform, nutritional analysis, diet & health regulation, food service, nutrition data repository.

## 1. INTRODUCTION

"FoodInDaHud" is an online platform specifically designed to raise food nutritional standards and motivate people to eat healthily. This project consists of two main types of interactions. Firstly it acts as a repository of recipes created by the community, offering detailed nutritional insights, and giving users access to a library of healthy and nutritious recipes, and detailed nutrition information for specific food ingredients and dishes. Secondly, it acts as a food chain where users can browse these recipes and have them made locally and delivered to them. The lack of customization options offered by current Quick Service Restaurants (QSR) denies customers their freedom of choice. FoodInDaHud seeks to reclaim this option for individuals and to inform people about the importance of making informed dietary decisions.

### 1.1 Need

The rising need for healthy food options is one of the primary needs. There is an increasing need for tools that can assist people in making educated decisions about their diet as they become more health-conscious and aware of the effects of food on their overall well-being. The idea can also satisfy the need for more control over the ingredients in our food. Many people are worried about the quality of the food they eat and want the option to alter their meals to accommodate their dietary preferences and requirements. A platform that offers precise and thorough nutritional data for certain food components and dishes is also required. It can be challenging for consumers to know what to believe and how to make informed decisions about their diet when there is so much contradictory nutrition information available online. Overall, the FoodinDaHud project can help meet these demands by giving users access to a library of wholesome and nutrient-dense recipes, recipe-level control over their meals, andcomprehensive nutrition information for particular food items and dishes.

## 2. APPLICATION

The platform is intended to be simple and user-friendly, with a simple and intuitive interface that anyone can use. FoodInDaHud offers a variety of recipes and resources to assist you in creating healthy and delicious meals, whether you're a highly experienced home cook or a newbie in the kitchen. The system has been developed to serve as a food & nutrition repository driven by the community. This repository is a data store that can be used to simply browse and gather information on commonly made dishes, and/or to have them made locally. All this is provided in anintuitive interface, making it a pleasant experience for the user to get into nutritional details and build a healthy diet for themselves without getting overwhelmed and exhausted in trying to manually find all this data. Each user can contribute to the community by sharing a unique recipe or a modification of another's recipe.

## 3. LITERATURE SURVEY

Numerous articles have been reviewed and their conclusions are summarised in this section. Documents that were looked at both before and during project development are presented in this section. The documents provided a better understanding of existing solutions and how the system architecture can be designed for optimal quality.

1. **"A Food Recommender System Considering Nutritional Information and User Preferences"** by ***Raciel Yera Toledo, Ahmad A. Alzahrani and Luis Martínez***

The first paper we examined is titled "*A Food Recommender System considering Nutritional Information and User Preferences*" published in the IEEE Journal in 2019. This

paper goes into detail on building an intelligent meal plan recommendation system that gathers and profiles nutritional data according to the user's nutritional requirements. This data is processed through an intelligent layer that identifies food sources that can fulfil the user's nutritional requirements and generates a customised meal plan for the user. It uses AHPSort to classify foods as appropriate or inappropriate for the user.

2. **"Personalised Nutrition Recommendation in Food services"** by ***Katerina Giazitz, Vaios T. Karathanos & George Boskou***

The second paper, "*Personalised Nutrition Recommendation in Food Services*" is a study conducted in 2020. This paper discusses the implementation of an application for restaurant menus called *Electronic Intelligent System of Personalized Dietary Advice*, or "*DISYS*". By taking into account the user's personal nutritional profile and health considerations, it recommends healthier options on restaurant menus. This paper also includes a report that describes a survey of DISYS users which found that, although subtly raising the population's nutritional standards, more than 40% of respondents were satisfied with the food recommendations offered by DISYS.

3. **"KitcheNette: Predicting and Recommending Food Ingredient Pairings using Siamese Neural Networks"** by ***Donghyeon Park, Keonwoo Kim, Yonggyu Park, Jungwoon Shin, Jaewoo Kang***

The third research paper we reviewed is titled "*KitcheNette: Predicting and Recommending Food Ingredient Pairings Using a Siamese Neural Network.*" published in 2019. This paper focuses on how to use Siamese neural networks to give recommendations and predict food ingredients based on the similarity of two input ingredients. This paper also includes how they trained their model based on existing datasets.

## 4. EXISTING SYSTEM

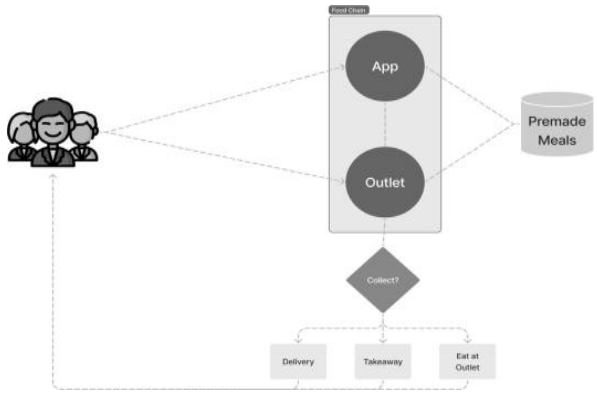


**Fig 2:** *Existing System*

- **Quick Service Restaurants**

  Quick Service Restaurants(QSRs) like McDonald's, KFC, Subway, etc. serve pre-made meals that are typically not very customisable and have no information listed regarding their nutritional values.

- **HealthifyMe**

  Designed for the mobile platform, HealthifyMe is a diet and fitness tracker that enables users to log their daily calorie intake as well as their diet. It also enables users to query nutritional data on popular food products.

- **Manually logging and querying nutrition data from the web**

  The majority of consumers still use online nutritional data search engines and either consult nutritionists or create their manual meal planning. Finding complete foods that have these elements in the right amounts requires searching for each ingredient's nutritional benefits, which takes some time. There is a potential that some of these ingredients won't be accessible locally.

## 5. PROPOSED SYSTEM

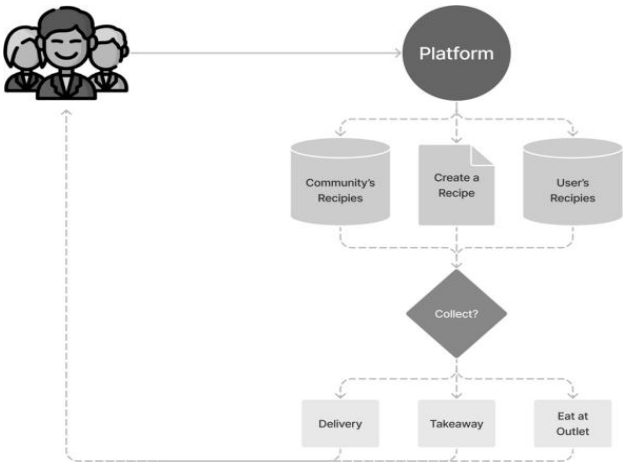


**Fig 2:** *Proposed System*

The *FoodInDaHud* system that is being proposed will have the following features: First, it will consist of a *Recipe Browser* that will be used to create, share, modify, and delete recipes from the community. The second feature, *Nutrition Profiler,* is the heart of the entire application, generating recipe recommendations based on the user's nutritional preferences. The third feature is the *Nutrition Query Engine*, which is used to retrieve complete nutrition details for any particular ingredient. The last feature is *Order & Delivery,* which allows the user to order the recipes, track deliveries, and make payments.

## 6. ARCHITECTURE

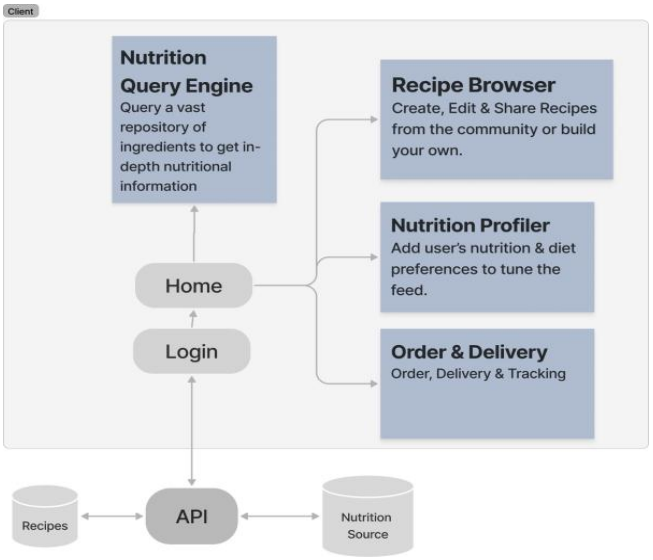


**Fig - 3**: *Architecture*

The architecture has 2 main components:

- Backend API
- Mobile Application

The project is divided into 4 main modules:

➔ **Recipe Browser**

This module consists of the interface that deals with the creation, modification, sharing and deletion of recipes from the community repository.

➔ **Nutrition Profiler**

The profiler is the module which takes in the user's nutrition preferences and health factors and is responsible for generating dish recommendations attuned to the user's preferences.

➔ **Nutrition Query Engine**

The query engine is part of the application that allows the user to freely query any ingredient with in-depth nutritional data. It presents the data in an intuitive & consistent way allowing the user to not get overwhelmed by information. It uses an external API to query nutritional information.

➔ **Order & Delivery**

Order & Delivery is the module that allows the user to order the recipes, track deliveries & make payments.

## 7. METHODOLOGY

### 7.1. Recipe Browser

Recipe Browser is the first core interface. This interface consists of two main views. The first view is the *Listing View,* wherein a user can search and access all the recipes created on our app. Users can explore various recipes that have been created by the community. They can also search for recipes by the ingredients in them. By default, this view will render recipes based on users' personalized nutrition preferences. The Second part of the Recipe Browser is *Recipe Editor*. Recipe Editor is the main interface that enables the creation, modification and deletion of recipes. A user can also clone a community recipe and can make a personalised version of it according to his nutritional preferences.

### 7.2. Nutrition Profiler

The *Nutrition Profiler* is the heart of the entire application. This module is responsible for generating recommendations based on the user's preferences. The *profiler* consists of the user's nutrition configuration. This configuration can be changed anytime by the user according to their dietary goals. The *profiler* uses this configuration to compute and match the recipes in which the ingredient proportions are exactly or approximately close to the user's required nutrition configuration.

### 7.3. Nutrition Query Engine

The *Nutrition Query Engine* is the module responsible for a user retrieving the complete nutrition details of a particular ingredient; the user can simply type the ingredient name to get all the details of it. A user can also filter and retrieve the ingredient list based on the nutritional values of the ingredients.

### 7.4. Order & Delivery

*Order & Delivery* is the section that deals with the processing of orders and tracking of deliveries. This is the infrastructure side of the concept that deals with ordering the recipes from the platform to have them prepared locally and have it delivered to the user. This side of the application includes payments, delivery tracking, and an outlet locator.

## 8. FUURE SCOPE

FoodInDaHud can expand its platform by incorporating advanced data analytics and artificial intelligence to offer more personalised meal plans and dietary recommendations. The platform can collaborate with healthcare providers and fitness experts to provide users with a holistic approach to their health and well-being. Moreover, FoodInDaHud can integrate gamification techniques to engage and motivate users to make healthier food choices, while also providing incentives to users who reach their dietary goals.

FoodInDaHud can also expand its services to cater to special dietary requirements, such as vegan, gluten-free, or keto diets. It can collaborate with local suppliers and farmers to promote locally sourced and sustainable food options that align with users' dietary needs and preferences.

Additionally, users can add a new recipe by speaking through their phone instead of typing the entire recipe. This will save users time by efficiently adding the new recipe through voice recognition.

Overall, FoodInDaHud has the potential to become a leading online platform that promotes healthy eating habits, which informs users about the importance of making informed dietary decisions and helps individuals achieve healthier lifestyles.

## 9. CONCLUSION

FoodInDaHud is an online platform that aims to improve people's nutrition and encourage healthy eating habits by providing a community-driven database of healthy recipes and detailed nutritional information. Additionally, it offers a food delivery service for users to order locally-made healthy meals. FoodInDaHud seeks to empower individuals with the freedom of choice that is often absent in traditional quick-service restaurants, while also educating them about the importance of making informed dietary decisions. In conclusion, FoodInDaHud provides a unique and holistic approach to promoting healthy eating habits by combining an online recipe repository with a convenient food delivery service.

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