Table of Contents

1. Introduction

1.1 Purpose of Document

Due to the ignorance of healthy food habits, obesity rates are increasing at an alarming speed , and this is reflective of the risks to people's health. People need to control their daily calorie intake by eating healthier foods, which is the most basic method to avoid obesity. However, although food packaging comes with nutrition (and calorie)labels, it's still not very convenient for people to refer to app-based nutrient dashboard systems which can analyze real-time images of a meal and analyze it for nutritional content which can be very handy and improves the dietary habits, and therefore, helps in maintaining a healthy lifestyle. This project aims at building web app that automatically estimates food attributes such as ingredients and nutritional value by classifying the input image of food. Our method employs Clarifai's AI-Driven Food Detection Model for accurate food identification and food API's to give the nutritional value of the identified food.

1.2 Project Summary

Project Name: Nutrition Assistant Application

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Project Team Id : PNT2022TMID41008

Team Members: Agila G, Anushree S, Preethi K

1.3 Background

A Nutrition Assistant is a specialist that uses diagnostic procedures to identify nutrition deficiencies in patients. They work closely with nutritionists and dietitians to improve the well-being of patients through proper nutrition. Nutritionists need to determine their patients' needs through interviewing them and giving them the best meal plans after

assessing all risk factors. They must also monitor their progress through follow-ups.

A Nutrition assistant interacts directly with patients to note their habits and lifestyles, enabling them to make informed decisions. They can find work in hospitals, outpatient clinics, rehabilitation centers, schools, health clubs, or assisted living facilities. A successful nutrition assistant should be equipped with nutritional experience, communication skills, and organizational skills.

Nutrition assistants work an average of 40 hours a week, Monday to Friday, from 9 a.m. to 5 a.m. Some Nutrition assistants work independently when called by physicians or dieticians.

1.4 Project Scope

The scope of this project is to review patient medical charts for dietetic and nutritional information. Assists nutrition therapist in determining nutritional care of patients. Gives individual diet instructrions to patients with normal and modified diets, as directed by a nutrition therapist.

There are certain skills that many nutrition assistants have in order to accomplish their responsibilities. By taking a look through resumes, we were able to narrow down the most common skills for a person in this position. We discovered that a lot of resumes listed dexterity, listening skills and physical strength.

1.5 Basic Purpose

Nutrition assistants help dieticians with providing proper nutrition healthcare facilities. They determine patient's nutritional needs, assess risk factors, and plan meals and menus. They also ensure Proper sterilization of plates and utensils.

1.5.3 Responsibilities

The primary responsibilities of the new web app:

- Assess clients nutritional and health needs.
- Counsel clients on nutrition issues and healthy eating habits.
- Develop meal and nutrition plans, taking clients preferences and budgets into account.
- Evaluate and monitor the effects of nutrition plans and practices and make changes as needed.

1.5.4 Need

A Nutrition assistant interacts directly with patients to note their habits and lifestyles, enabling them to make informed decisions. They can find work in hospitals, outpatient clinics, rehabilitation centers, schools, health clubs, or assisted living facilities. A successful nutrition assistant should be equipped with nutritional experience, communication skills, and organizational skills.

1.6 Overview of Document

Wellness and healthy lifestyles have become mainstream. Interest in fitness applications and revenue from them grow as fast as the number of people striving to be fit.

The spoonacular Nutrition, Recipe, and Food API allow you to access over 365,000 recipes and 86,000 food products. Our food ontology and semantic recipe search engine make it possible to search for recipes using natural language queries, such as "gluten-free brownies without sugar" or "low-fat vegan cupcakes." You can automatically calculate the nutritional information for any recipe, analyze recipe costs, visualize ingredient lists, find recipes for what's in your fridge, find recipes based on special diets, nutritional requirements, or favourite ingredients, classify recipes into types and cuisines, convert ingredient amounts, or

even compute an entire meal plan. With our powerful API, you can create many kinds of food and especially nutrition apps.

clients will be able to:

- chat with you
- check your meal plans
- read or watch content sent by you
- fill in the questionnaires you send them
- track their progress
- keep a food journal
- track their water intake
- do secure video calls

2. Functional Objectives

As a Nutrition Assistant, you might work alongside a dietician to plan and prepare meals, or work in a hospital or long-term care facility to prepare and serve food. Performing dietary assessments and maintaining records of a patient's food intake could be a component of the role. A passion for helping people is essential. Use a targeted objective statement to show how your skills will benefit the positions.

The advent of technology has made our generation sedentary. Due to the cost of app development technology, the amount of physical work has almost diminished which is the root cause of various problems.

3. Non-Functional Objectives

3.1 Reliability

- The system shall be completely operational at least x% of the time.
- Down time after a failure shall not exceed x hours.

3.2 Usability

- Effective in changing eating behavior and diet-related risk factor

3.3 Performance

- Nutrition can help enhance athletic performance
- An active lifestyle and exercise routine, along with eating well, is the best way to stay healthy

3.4 Security

- The system shall provide password protected access to web pages that are to be viewed only by authorized users.
- Data must be transmitted in encrypted form.

3.5 Supportability

- The system should be able to accommodate new products and product lines without major reengineering.
- The system web site shall be viewable from Internet Explorer 4.0 or later, Netscape Navigator/Communicator 3.0 or later and the America Online web browser version 3.0 or later.

3.6 Online user Documentation and Help

- The system shall provide a web page that explains how to navigate the site. This page should be customized based on what pages that user is allowed to access.
- This help page should be accessible from all other pages.

3.7 Purchased Components

- A language translation tool from English to French and English to German will be needed.
- A web site search engine will be needed.

4. The Context Model

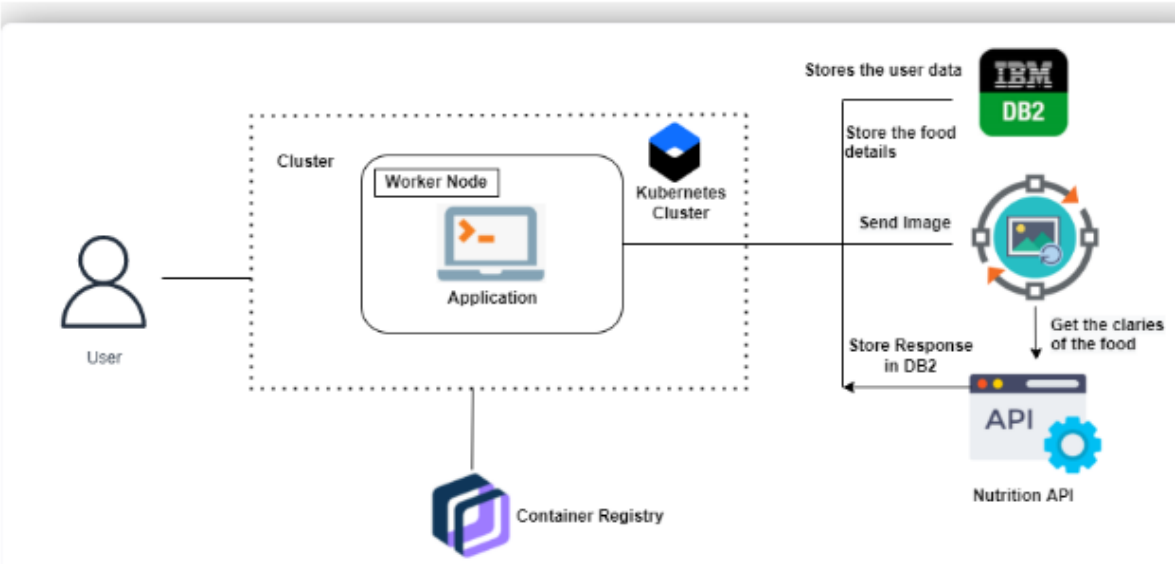
4.1 Goal Statement of nutrition

- Make half your plate fruits and vegetables
- Make half the grains you eat whole grains
- Switch to fat-free or low-fat milk

- Choose a variety of lean protein foods
- Compare sodium in foods
- Drink water instead of sugary drinks
- Eat some seafood

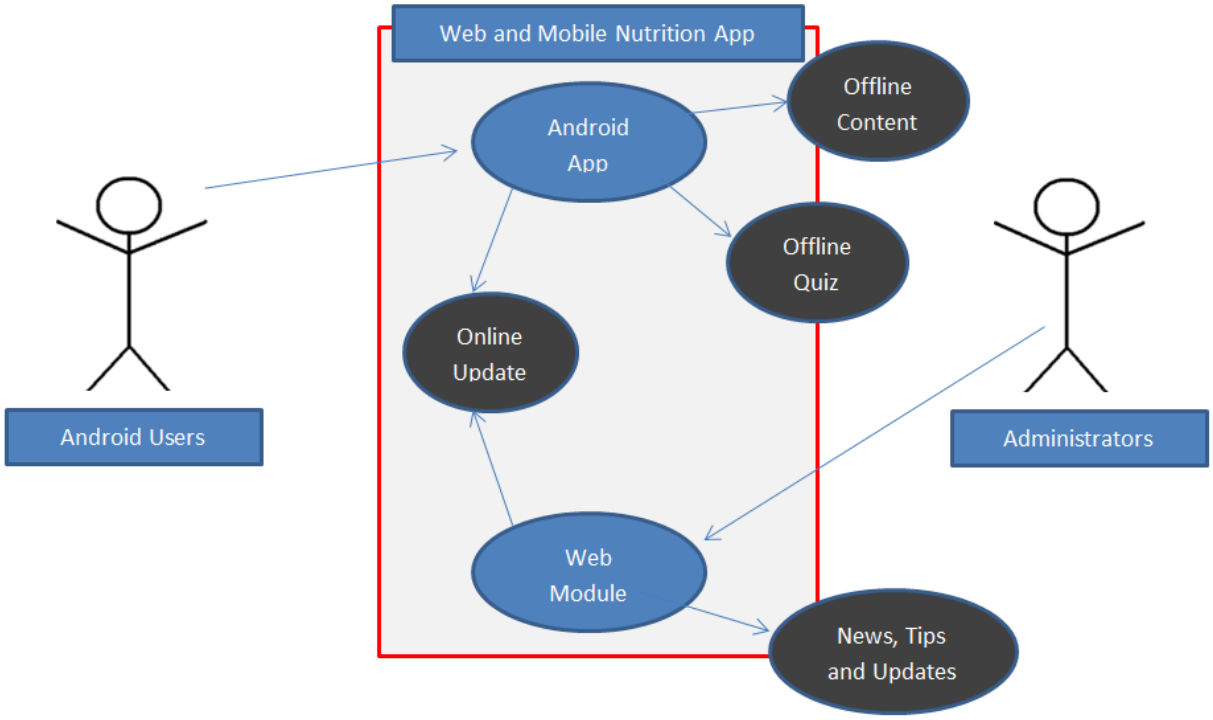
4.2 Architecture Diagram

Technical Architecture:



5. The Use Case Model

5.1 System Use Case Diagram



5.2 Use Case Descriptions (for selected cases)

Notes:

- For all use cases, the user can cancel the use case at any step that requires user input. This action ends the use case. Any data collected during that use case is lost.
- For all use cases that require a logged in user, the current login session is updated during the use case to reflect the navigation paths through the use case.

Login User

Use Case Name:	Login User
Summary:	As a Nutrition Assistant, you might work alongside a dietician to plan and prepare meals, or work in a

	hospital or long-term care facility to prepare and serve food
Basic Flow:	1. Allows to register their account 2. Once registered they have the permission to login 3. While login the authenticating of user takes place 4. Allows to perform encryption and decryption 5. Once login the user have the permission to share their food images and view their calorie intake and fat content present in it.
Alternative Flows:	Step 4: if username is invalid, the use case allows to perform further operation Step 4: if the password is invalid the system requests that the user re-enter the password. When the user enters another password the use case continues with step 2 using the original username and new password.
Extension Points:	none
Preconditions:	The user is registered.
Postconditions:	The user can now obtain data and perform functions according to his registered access level.
Business Rules:	Some data and functions are restricted to certain types of users or users with a particular access level.

Register User

Use Case Name:	Register User
Summary:	This project aims at building web app that automatically estimates food attributes such as ingredients and nutritional value by classifying the input image of food.
Basic Flow:	1. Mandatory to register with account 2. Once registered the login action takes place 3. Authenticating the user 4. Once login the user have the permission to share their food images and view their calorie intake and fat content present in it.
Alternative Flows:	• Step 5: If the username duplicates an existing username the system displays a message and the use case goes back to step 2. • Step 6: If the user does not enter a required field, a message is displayed and the use case repeats step 4.