

NUTRITION ASSISTANT APPLICATION

PROJECT REPORT

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BONAFIDE CERTIFICATE

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This project report is submitted for the Autonomous Project Viva-Voce examination held on

INTERNAL EXAMINER

EXTERNAL EXAMINER

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1. INTRODUCTION

Chronic diseases such as diabetes, obesity, and cardiovascular diseases are becoming the dominant sources of mortality and morbidity worldwide and recently an epidemic in many Asia Pacific countries. Unhealthy diet is one of the key common modifiable risk factors in preventing and managing chronic diseases. Personalized dietary intake intervention showed significant impact on influencing people's choice and promoting their health. The feedback on nutrition intake is substantial and behavioural changing when patients track their dietary intake for a considerable length of time. However, the burden of logging food makes compliance a challenge. Clinical studies rely on patients to recall dietary intake, which is time-consuming and prone to underestimation.

1.1 PROJECT OVERVIEW

Tracking dietary intake is an important task for health management especially for chronic diseases such as obesity, diabetes, and cardiovascular diseases. Given the popularity of personal handheld devices, mobile applications provide a promising low-cost solution to tackle the key risk factor by diet monitoring. In this work, we propose a photo based dietary tracking system that employs deep-based image recognition algorithms to recognize food and analyze nutrition. The system is beneficial for patients to manage their dietary and nutrition intake, and

for the medical institutions to intervene and treat the chronic diseases. To the best of our knowledge, there are no popular applications in the market that provide a high-performance food photo recognition like ours, which is more convenient and intuitive to enter food than textual typing.

1.2 PURPOSE

Experiments on evaluating the recognition accuracy on laboratory data and real user data on food, which shed light on uplifting lab trained image recognition 2 models in real applications. We have also conducted user study to verify that our proposed method has the potential to foster higher user engagement rate as compared to existing apps based dietary tracking approaches.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

With the rapid development of smart computing and Internet of Things (IoT), now we have a huge amount of data from social networks and mobile networks everyday. People keep uploading, sharing and recording what they do everyday in case of missing the chance of using them to improve our daily life. Food images, recipes and food diaries become the most popular information to be shared, we can learn the implication to build an automatic nutrition analysis system by taking the advantage of such large-scale datasets. With the help of food recognition and analysis systems, users are able to record their daily meals and assess dietary habits, as well as promote their health.

2.2 REFERENCES

1. P. Dollar and C. L. Zitnick, "Fast edge detection using structured forests," *IEEE Trans. Pattern Anal. Mach. Intell.*, vol. 37, no. 8, pp. 1558–1570, Aug. 2014.
2. T. Ege and K. Yanai, "Image-based food calorie estimation using knowledge on food categories, ingredients and cooking directions," in *Proc. Thematic Workshops ACM Multimedia-Thematic Workshops*, 2017, pp. 367–375.

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7. Z. Ge, C. McCool, C. Sanderson, and P. Corke, "Modelling local deep convolutional neural network features to improve fine-grained image classification," in *Proc. IEEE Int. Conf. Image Process. (ICIP)*, Sep. 2015, pp. 4112–4116.

2.3 PROBLEM STATEMENT DEFINITION

This is based on the propose of a deep learning based system for food item detection and analyze the nutrition components of each meal image. Our model consists of three main steps.

We first extract the regions of interests (ROIs) by applying the Region

Proposal Network derived from the Faster R-CNN model. The ROIs would help to separate the food items from the background, and improve the detection model efficiency .

The second step is to apply a well designed Convolutional Neural Network (CNN) on selected Rols and classify them into different food item categories. Meanwhile, a regression module is also used to locate the food coordinates in the image.

The final step is to use modern technology-based dietary assessment tools for food nutrition analysis and generate a health report for users based on their meal images.

1. Who are all affected by this issue?

People from all age groups who are all careless about their health due to their busy schedule and high calorie diet. This leads to an unhealthy lifestyle because of their eating habits. Thus, leads to many health issues like obesity, heart attack, diabetics and rise in cholesterol level.

2. What are the boundaries of the problem?

Based on the information collected from the user, if the user is diagnosed with diabetes/Heart attack/obesity then the application provides information about diet. The application sets some boundaries on the user's food habits to maintain their diet and improve their condition. The boundaries are set on the age group of people like elder people who have some problems with digestion so they will be provided with that information.

3.What is the issue?

People are struggling to find if the packed food is good for their health or not having conflict with themselves. They don't know about the ingredients used in that dish and calories present in them. To help them to solve this problem they can take a clear picture of the food and know what nutrients are present in that food or search for the food recipes which are suitable for them.

4.When does the issue occur?

When people want to try western culture food habits which are not suitable for our country. This issue will occur when people eat unhealthy food like packed or fast food because they are busy with their work and they are not giving importance to their health and food habits. Some people like food lovers who want to taste different dishes without knowing its effect, this leads to obesity and other health problems.

5.Where does the issue occur?

Mostly this issue occurs in developed and developing countries. Packed or fast food is convenient and time saving for the people who work in the IT industry. Slowly the intake of this food will cause an increase in insulin and cholesterol level which causes diabetes and heart attack.

6.Why is it important that we fix the problem?

This application is used to control serious health issues before it becomes fatal. It helps users to improve their health and switch to a healthy lifestyle. For knowing what are all the ingredients present in the food and their calories present in the food they are consuming is suitable for their body condition. It reduces the risk of heart disease, stroke, obesity and any other

health problems. By maintaining a balanced diet people can also boost their mood and gain more energy

3. IDEATION AND PROPOSED SYSTEM

3.1 EMPATHY MAP

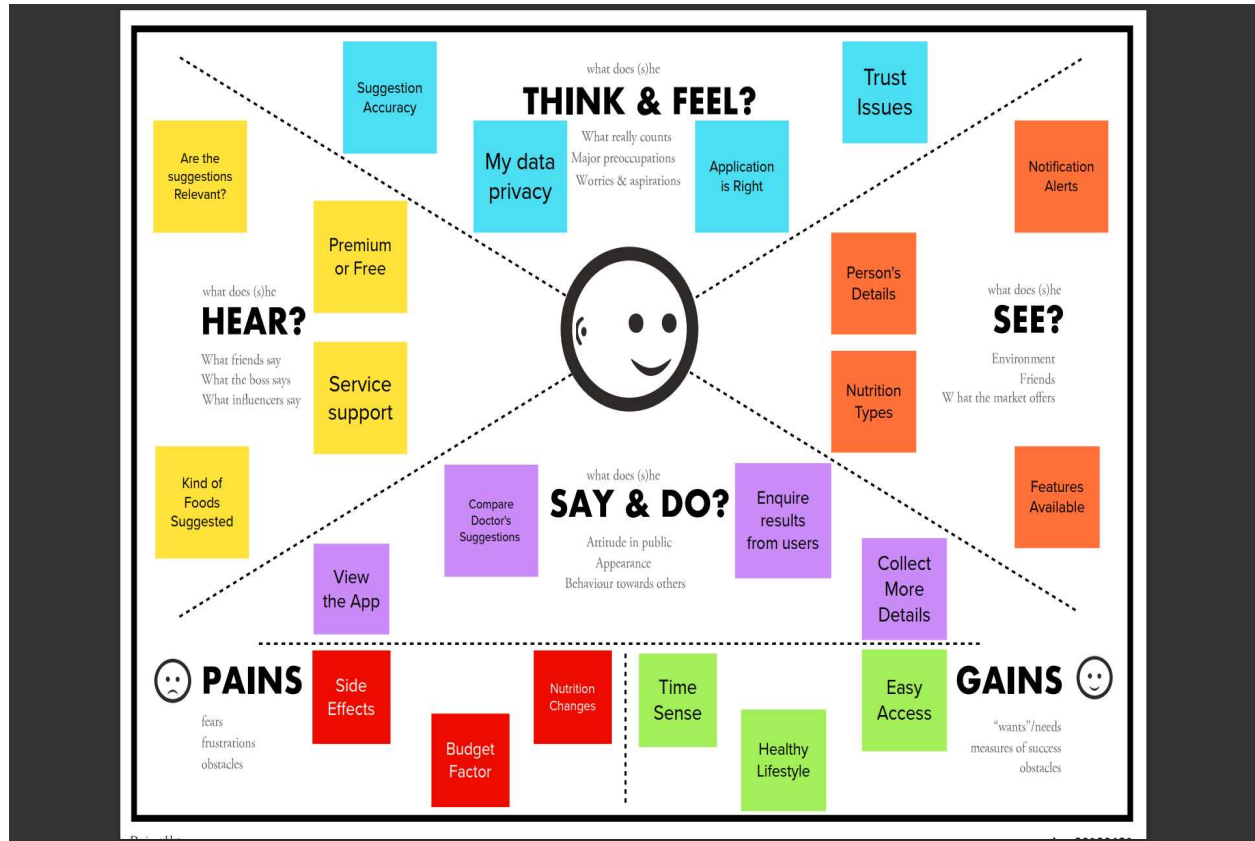


FIG 3.1 EMPATHY MAP

3.2 IDEATION AND BRAINSTORMING

Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template



Brainstorm & idea prioritization

10 minutes to prepare
 1 hour to collaborate
 2-4 people recommended

[Share template feedback](#)

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

1. Team gathering: Participants should read background, research future, and design workshop.
 2. Set the goal: To create app which tells nutrients in the food.
 3. Learn how to use the facilitation tools: Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#)

1 Problem statement

Obesity is one of the biggest health problems associated with junk food and People wants 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.

Obstacle

It's difficult to measure nutrients in food

2 Key rules of brainstorming

To run an unusual and productive session

- Map to topic
- Deliberate judgments
- Go for volume
- Encourage wild ideas
- Listen to others
- If possible, be visual



Need some inspiration?

Check a list of ideas or browse through the collection of ideas.

[Open resource](#)

FIG 3.2 IDEATION AND BRAINSTORMING

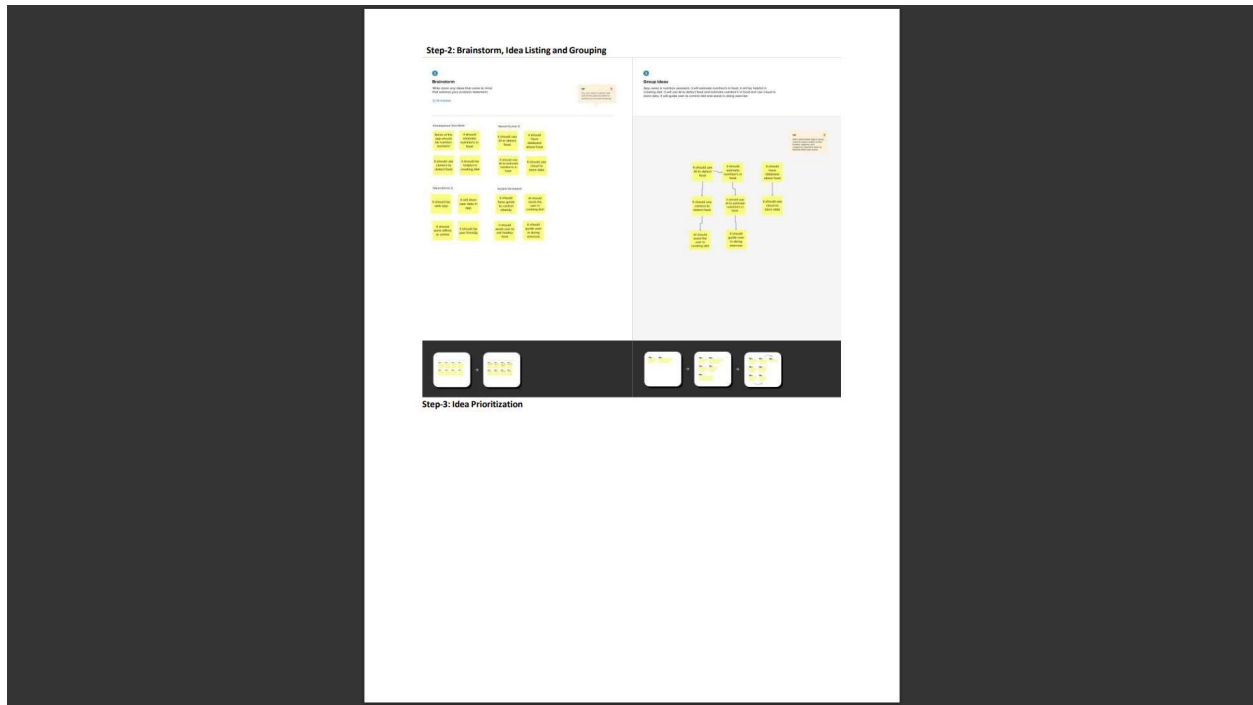


FIG 3.2.1 IDEATION AND BRAINSTORMING

3.3 PROPOSED SOLUTION

3.3.1 PROBLEM STATEMENT (PROBLEM TO BE SOLVED)

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.

3.3.2 IDEA / SOLUTION DESCRIPTION

This project aims at building a 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

3.3.3 NOVELTY / UNIQUENESS

In this project, User interacts with the Web App to Load an image. The image is passed to the server application, which uses Clarifai's AI-Driven Food Detection Model Service to analyze the images and Nutrition API to provide nutritional information about the analyzed Image. Nutritional information of the analyzed image is returned to the app for display.

3.3.4 SOCIAL IMPACT / CUSTOMER SATISFACTION

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 life.

3.3.5 BUSINESS MODEL (REVENUE MODEL)

A revenue model means understanding how a startup can make money. Our major revenue sources consist of sales, government funds, and public donations. The introduction of novel ideas increases revenue streams, such

as special dietary needs, Clarifai's AI-Driven Food Detection Model, Food API's to give the nutritional value etc.

3.4 PROBLEM SOLUTION FIT

The Problem solution aims at building a 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.

3.4.1 PURPOSE

- Solve complex problems in a way that fits the state of your customers.
- Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
- Sharpen your communication and marketing strategy with the right triggers and messaging.
- Increase touch-points with your company by finding the right problembehavior fit and building trust by solving frequent annoyances, or urgent or costly problems.

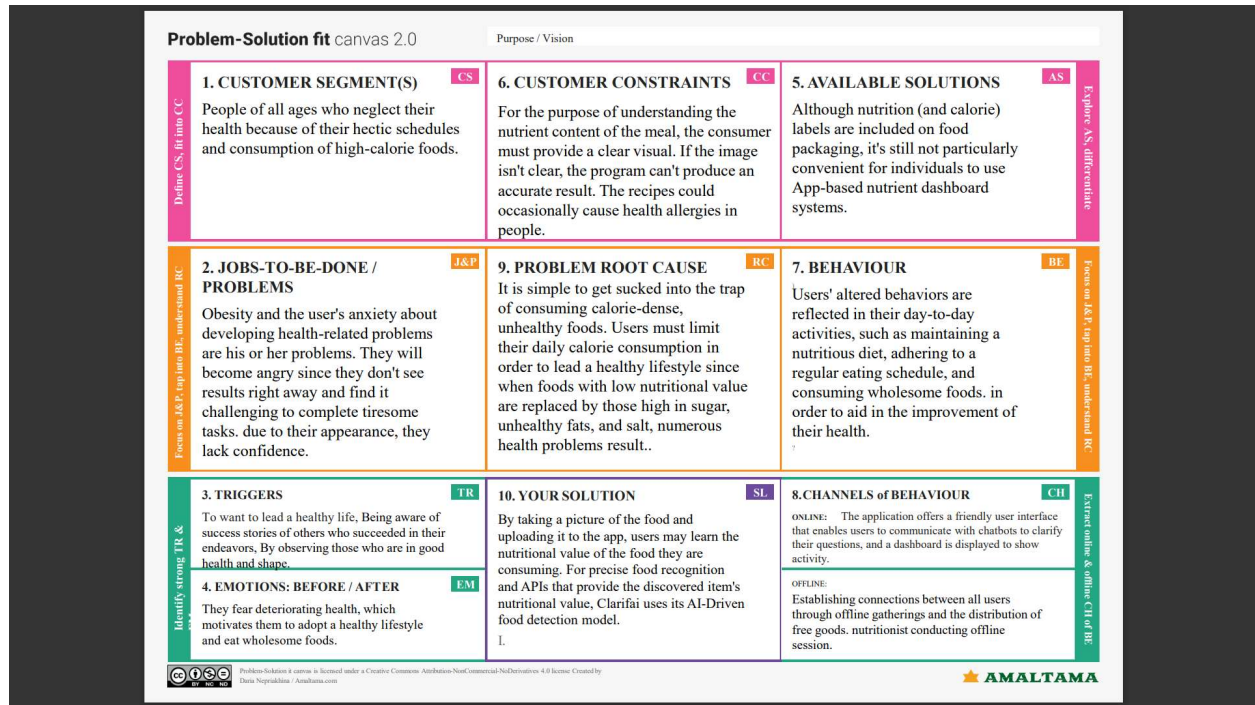


FIG 3.4.1 PROBLEM SOLUTION FIT

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

- Users have to register their personal details.
- User has to upload the image of the food
- The nutritional values of the food will be displayed

4.2 NON-FUNCTIONAL REQUIREMENTS

4.2.1 PERFORMANCE

Performance is measured in terms of the output provided by the application. Requirement specification plays an important part in the analysis of a system. Only when the requirement specifications are properly given, it is possible to design an application, which will fit into the required environment. The load for the user interface screens shall take no longer than 2 seconds. The login information shall be verified within 5 seconds. Queries shall return results within 5 seconds

4.2.2 SAFETY AND SECURITY REQUIREMENTS

- User Identification:

The system requires the user to identify himself/herself User

- Login ID:

Any user who uses the system shall have a Login.

- Modification:

Any modification (insert, delete (or) update) for the Database shall be synchronized and done only by the admin in the ward.

- Admin Rights:

Admin shall be able to view and modify the information.

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

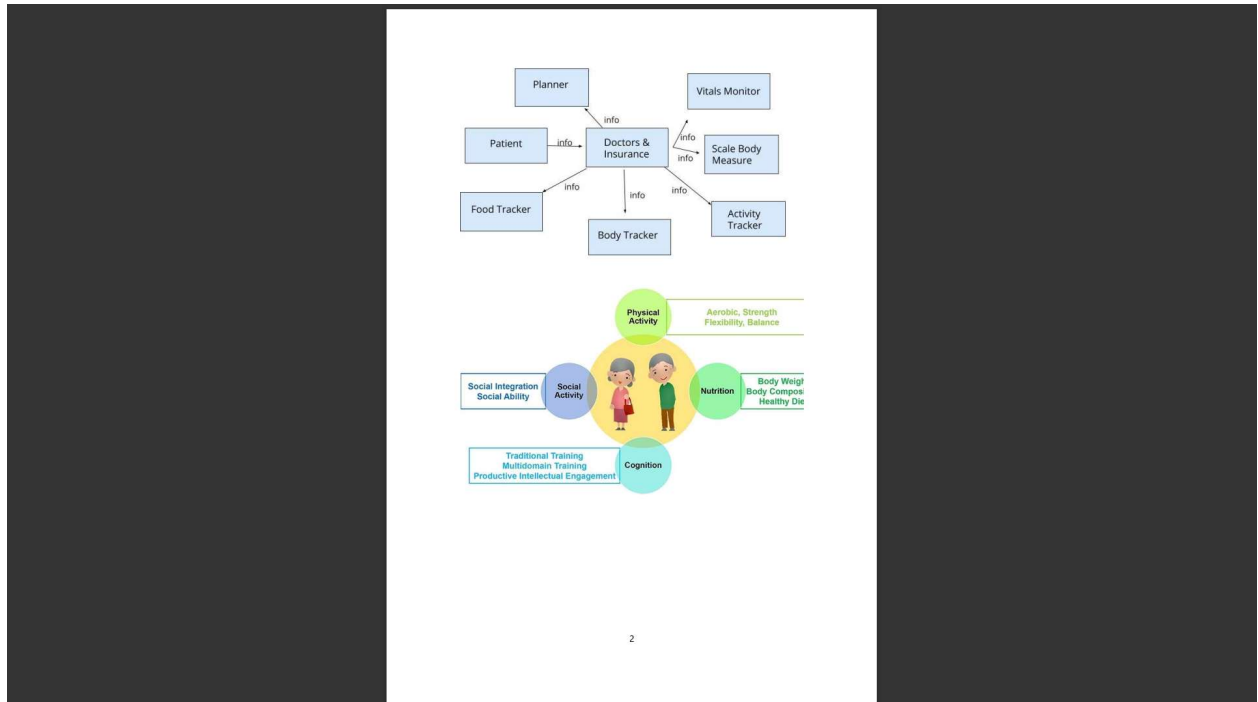


FIG 5.1 DATA FLOW DIAGRAMS

Data flow diagram

Diagram 1

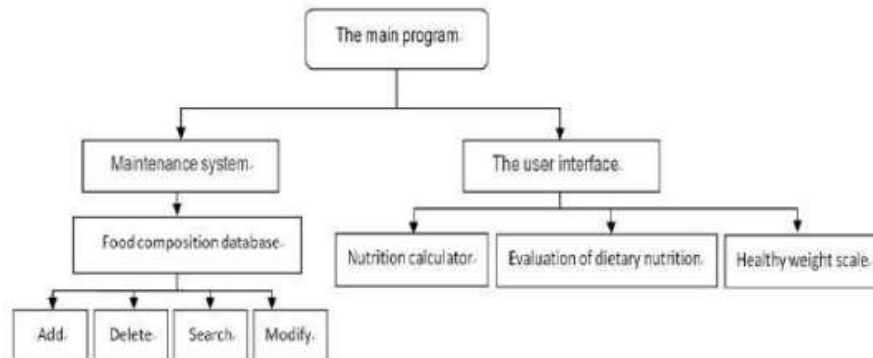


Diagram 2

FIG 5.1.2 DATA FLOW DIAGRAMS

5.2 SOLUTION AND TECHNICAL ARCHITECTURE

PROJECT DESCRIPTION

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 14 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 a 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

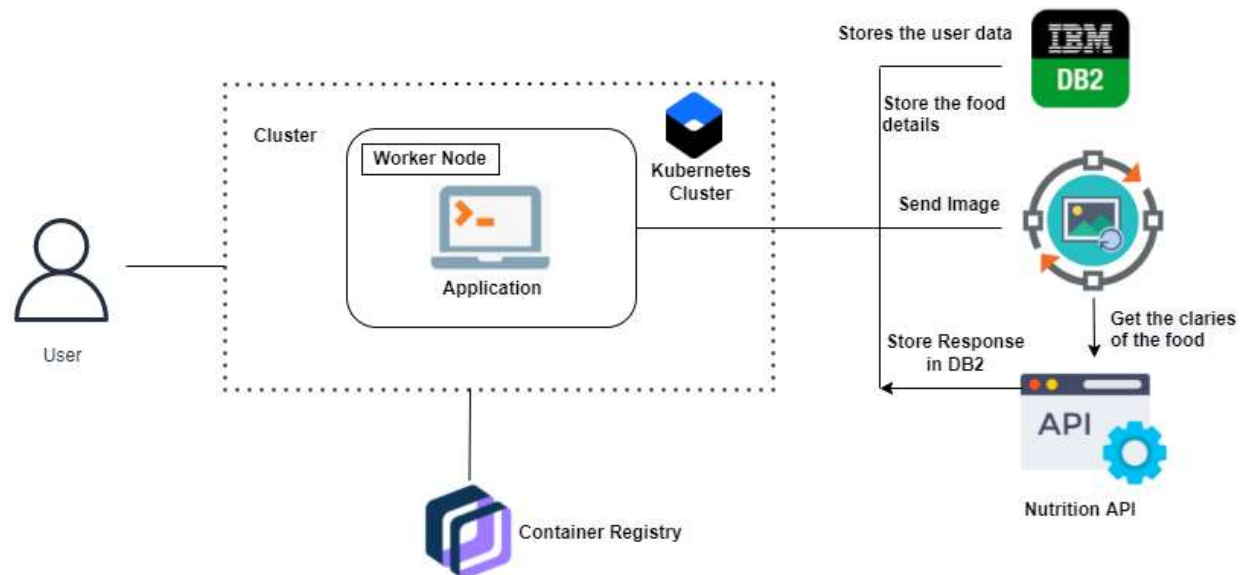


FIG 5.2 TECHNICAL ARCHITECTURE

SOLUTION

- User interacts with the Web App to Load an image.
- The image is passed to the server application, which uses Clarifai's AIDriven Food Detection.
- Model Service to analyze the images and Nutrition API to provide nutritional information about the analyzed Image.

PROCEDURE

1. IMPLEMENTING WEB APPLICATION

- Registration (Push the registration data into the database)
- Login (Fetch the data upon login)
- Upload the food image and get the prediction
- Get Calories from the food items
- Add food data to the database

2. CREATE UI TO INTERACT WITH THE APPLICATION

- Registration Page
- Login Page
- Upload Image page
- Prediction results page for food items
- View history of items

Create UI to Interact With Application

OUTPUT:

REGISTER

Please fill in this form to create an account.

Email:

Password:

Confirm Password:

Already have an account? [Sign In](#)

2) LOGIN

```
<html>

<center>

<form action="action_page.php">
<div class="container">
<body background="C:\Users\admin\Downloads\PIC.jpg">
<h1>LOGIN</h1>
<label for="email"><b>Email</b></label>
<input type="text" placeholder="Enter Email" name="email" id="email"
required=</br></br>

<label for="psw"><b>Password</b></label>
<input type="password" placeholder="Enter Password" name="psw" id="psw"
required=</br></br>

<button type="submit" class="registerbtn">Login</button></br>
</div>
```

Create UI to Interact With Application

```
<td>food 4</td>
<td>value</td>
<td>value</td>
<td>value</td>
<td>value</td>
<td>value</td>
</tr>
</center>
</body>
</html>
```

OUTPUT:

HISTORY

Tracker

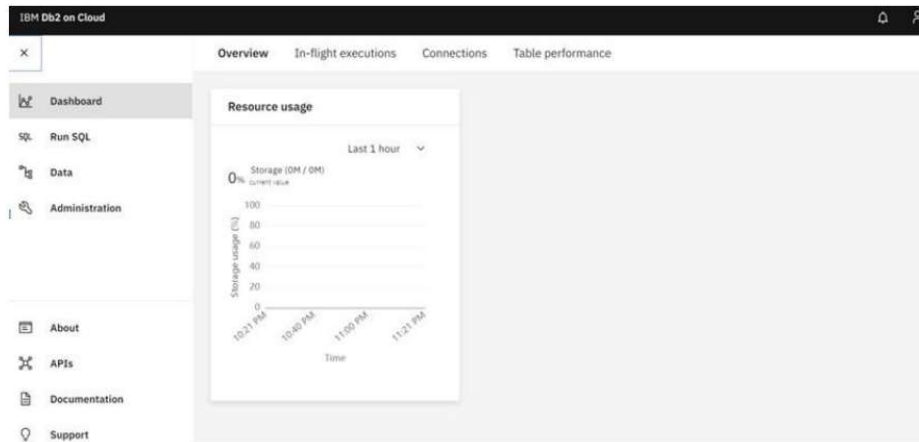
Food Item	Quantity	Price	Cost	Profit
Food 1	100	1000	1000	1000
Food 2	100	1000	1000	1000
Food 3	100	1000	1000	1000
Food 4	100	1000	1000	1000

History of food items

Food Item	Quantity	Price	Cost	Profit
Food 1	100	1000	1000	1000
Food 2	100	1000	1000	1000
Food 3	100	1000	1000	1000
Food 4	100	1000	1000	1000

3. CREATE IBM DB2 AND CONNECT WITH PYTHON

IBM DB2:



DB2 with python:

```
C:\Windows\System32\cmd.exe
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin\Documents\IBM\module4>cd flask-with-ibm-db2
C:\Users\Admin\Documents\IBM\module4\flask-with-ibm-db2>cd flask-with-ibm-db2
flask_db IBM_DBConnection object at 0x0000024211142570>
connection successful.....

C:\Users\Admin\Documents\IBM\module4\flask-with-ibm-db2>
C:\Users\Admin\Documents\IBM\module4\flask-with-ibm-db2>
```

4. INTEGRATE NUTRITION API

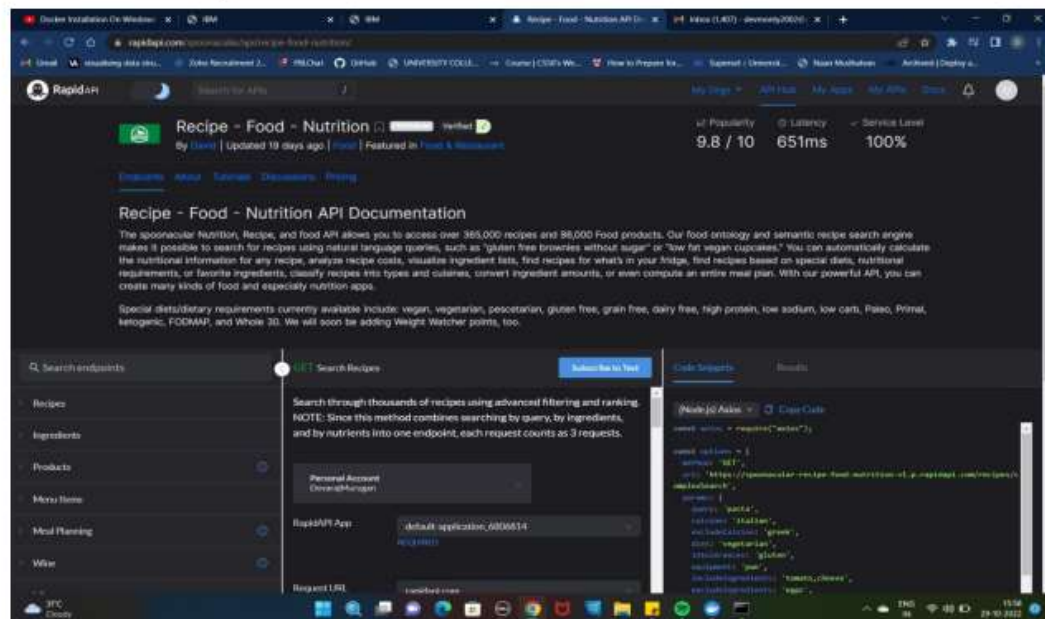
Integrate Nutrition API:

In IBM Project workspace there is a website link is there to create an account in the Nutrition API using those resources we have created an account in Nutrition API.

Short Note About Nutrition API (From Resources):

The Spoonacular Nutrition, Recipe, and food API allows you to access over 365,000 recipes and 86,000 Food products. Our food ontology and semantic recipe search engine makes 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, analyse 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. Special diets/dietary requirements currently available include: vegan, vegetarian, pescetarian, gluten free, grain free, dairy free, high protein, low sodium, low carb, Paleo, Primal, ketogenic, FODMAP, and Whole 30.

Here is the Screenshot given Below:



5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Visitor	Registration	USN-1	As an initial visitor, I want to see what the application is about, what it does, and see if I am interested in creating an account to use the application.	I can access my account	High	Sprint-1
		USN-2	As a visitor I would like a link to a demo page of what the application looks like and does.	I can visit a demo page	High	Sprint-1
		USN-3	As a visitor who has made an account I would like to sign in to access my account.	I can register with Outlook Credentials	Low	Sprint-1
	Login	USN-4	As a interested user, I want a simple sign up page	I can register with Gmail Credentials	Low	Sprint-1

	Meals	USN-5	As a user, I want be able to add meals and have a over all view of what I am eating.	I can add the meal and view the task	High	Sprint-1
		USN-6	As a user I want to see the macro and micro nutrient totals each day	I can able to view the nutrients	High	Sprint-2
		USN-7	As a user I want a link to a weekly summary	I can view the summary	High	Sprint-2
		USN-8	As a user, I want to be able to add ingrediants in name and quantity	I can read the ingredients in name & quantity	High	Sprint-2
		USN-9	As a user, I want to save my recipes	I can store the recipes	Medium	Sprint-2
		USN-10	As a user, I want to be able to upload a picture of the recipe	I can upload the recipe's picture	High	Sprint-3

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create a product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering the username, password, and confirming my password.	10	High	2
Sprint-1		USN-2	As a user, I will enter all health-related details which are asked.	10	High	2
Sprint-2	Login	USN-3	As a user, I can log into the application by entering the username and password.	20	High	1
Sprint-3	Image uploading page	USN-4	As a user, I can upload the image either by choosing the file from my device or dragging and dropping the image from my device.	20	High	2
Sprint-4	Nutritional Page	USN-5	As a user, I can view the nutritional value of given input image of food.	10	High	3

6.2 SPRINT DELIVERY SCHEDULE

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-4		USN-6	As a user, I can get the suggestion from the application based on my health details.	10	Medium	2

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	28 Oct 2022	02 Nov 2022	20	03 Nov 2022
Sprint-2	20	6 Days	03 Nov 2022	08 Nov 2022	20	08 Nov 2022
Sprint-3	20	6 Days	08 Nov 2022	13 Nov 2022	20	13 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{\text{sprint duration}}{\text{velocity}}$$

$$= 20/5 = 4.0$$

CHAPTER 7

CODING & SOLUTIONING

7.1.1 FEATURE 1 : LOGIN

```
<!DOCTYPE html>
<html lang="en" class="no-js">
  <head>
    <meta charset="UTF-8" />
    <link rel="stylesheet" href="static/css/bootstrap.min.css">

    <link rel="stylesheet" href="static/css/style.css">

    <link rel="stylesheet" href="static/css/responsive.css">
    <link rel="stylesheet" href="static/css/jquery.mCustomScrollbar.min.css">
    <link rel="stylesheet" type="text/css" href="static/css/demo1.css" />
    <link rel="stylesheet" type="text/css" href="static/css/style1.css" />
    <link rel="stylesheet" type="text/css" href="static/css/animate-custom1.css" />

  </head>
  <body > <div class="header-top">
    <div class="header">
      <div class="container-fluid">
        <div class="row">
          <div class="col-xl-2 col-lg-4 col-md-4 col-sm-3 col logo_section">
            <div class="full">
              <div class="center-desk">

                </div>
              </div>
            </div>
          </div>
          <div class="col-xl-10 col-lg-8 col-md-8 col-sm-9">

            <div class="menu-area">
              <div class="limit-box">
                <nav class="main-menu ">
```

```

<ul class="menu-area-main">
  <li class="/"> <a href="/">Home</a> </li>
  <li> <a href="/#about">About</a> </li>
  <li> <a href="/#vegetable">nutrition</a> </li>

  <li><a type="button" id="donate" href="/register">Register</a></li>
  <li> <a href="/#contact">Contact Us</a> </li>

</ul>
</nav>
</div>
</div>
</div>
</div>
</div>
</div>
</div>
<div class="container">

  <div class="codrops-top">
    <a href="">
      <span class="right">

</span>
    <div class="clr"></div>
  </div>
</header>

<div class="wrap-login100">
  <div class="login100-pic js-tilt" data-tilt>
    
    <div class="">

      <div >
        <a type="button" id="donate" href="/">Back to Home page </a>
      </div>
    </div>
  </div>

```



```

        <form action="/login" method="post">
    <div class="msg">{{ msg }}</div>
<div id="wrapper">
    <div id="login" class="animate form">
        <form action="mysuperscript.php" autocomplete="on">
            <h1>Log in</h1>
            <p>
                <label for="username" class="uname" data-icon="u" > Your
username </label>
                <input id="username" name="username" type="text"
placeholder="Enter Your username"/>
            </p>
            <p>
                <label for="password" class="youpasswd" data-icon="p"> Your
password </label>
                <input id="password" name="password" type="password"
placeholder="Enter Your Password" />
            </p>
            <div class="text-center p-t-12">
                <span class="txt1">
                    Forgot
                </span>
                <a class="txt2" href="/forgot">
                    Username / Password?
                </a>
            </div>

            <p class="login button">
                <input type="submit" value="Login" />

</p>

            <p class="change_link">

```

member yet ?

Not a

```

                                <a
href="/register" class="to_register">Join us</a>
                                </p>

                                </p>

                                </form>
                                </div>

                                </div>
                                </div>
                                </section>
                                </div>
                                </body>
                                </html>

```

7.1.2 FEATURE 2 : SIGNUP

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8" />
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0" />
  <title>Sign Up</title>
  <link rel="stylesheet" href = "Style.css">

</head>
<body>
  <div class="card">
    <h1>SIGN UP</h1>
    <strong>Already have an account? <a href='/login'><button>Log
in</button></a></strong>
    <form method="POST" action="">
      <div> <input type="text" placeholder="Username" name="user" required/> </div>
      <div> <input type="text" placeholder="Email" name="email" required/> </div>
      <div> <input type="password" placeholder="Password" name="password"
required/> </div>

```

```
        <input type="submit" value="Sign Up" />
    </form>
    <br/>
    <!-- <strong>{{msg}}</strong> -->
</div>
</body>
</html>
```

7.1.3 FEATURE 3 : HOME

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Profile</title>
    <link rel="stylesheet" href = "Style.css">

  </head>
  <body>
    <div class="card">
      <h1>Profile</h1>
      <h2>UserName:</h2>
      <h2>Email:</h2>
      <a href="/changepwd"><button>Change Password</button></a>
      <a href="/home"><button>Back to Home</button></a>
      <br />
      <!-- <strong>{{msg}}</strong> -->
    </div>
  </body>
</html>
```

CHAPTER 8

TESTING

8.1 TEST CASES

1. Login button click with wrong credentials entered.
2. Signup with already registered mail ID.
3. Signup with wrong form data entered.
4. Entering home page with logged out session.
5. Clicking home page buttons with logged out session.
6. Invalid data entered in change password page and requested for change in password.

8.2 USER ACCEPTANCE TESTING

2. Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	2	1	2	3	8
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	6	2	1	8	17
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	1	2	2	5
Totals	11	7	10	15	43

CHAPTER 9

RESULTS

9.1 PERFORMANCE METRICS

1. Planned value : Rs.2000
2. Actual value : Rs.100
3. Hours worked : 40 hours
4. Stick to Timelines : 100%
5. Stay within budget : 100%
6. Consistency of the product : 75%
7. Efficiency of the product : 80%
8. Quality of the product : 80%

CHAPTER 10

ADVANTAGES AND DISADVANTAGES

ADVANTAGES :

1. Low cost.
2. Simple UI.
3. Faster response due to single page web page
4. Capability of adding many features with ease and less cost.

DISADVANTAGES :

1. Lack of efficiency . Efficiency of the product needs to be improved.
2. Consistency of the product is not 100%.
3. Not a compact sized product. Size needs to be decreased.

11. CONCLUSION

Dietary tracking is an essential task in chronic disease management and intervention. Food photo taking and image recognition significantly reduce the burden of food entering on personal mobile devices. In this work, we have developed a dietary tracking system that applies the deep-based image recognition to accurately and efficiently log food and nutrition intake. Through real user food photo testing and user study, we found that laboratory models form the foundation of the solution but miss out some of the key challenges. The diversity of real food photos is higher than the lab trained model. An ingredient based recognition is a promising way of tracking the free style and homemade food recognition problems in which training data is sparse and not representative. Moreover, the proposed photo based portion selection method is shown to be more accurate and engages the users better than the existing methods.

12.FUTURE SCOPE

In future we'll be adding more features which will benefit the users. The ui/ux of the web application will be improved. Scaling the project for more use cases and customers. Implementing distributed computing for efficient processing. Making encryption standard for cloud storage.

SOURCE CODE:

<https://github.com/IBM-EPBL/IBM-Project-4421-1658731941>