RMK ENGINEERING COLLEGE

(An Autonomous Institution)

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PROJECT

AI- POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS

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1. INTRODUCTION

1.1 Project Overview

People can follow a healthy lifestyle through eating healthy food. The food we eat must contain nutrients which are essential for proper nourishment, growth and immunity for the human body. In today's world, most of the people are living under uncertainty to decide on which foods are healthy and if healthy how much of it can be consumed. The nutritional facts label is printed on food products all over the world and they are represented using a similar structure but these labelling of nutritional information is difficult to understand by the common people. Another issue is that these labels are only for processed and manufactured foods which can be bought in the stores. To make this information accessible in an easier way by classifying these food products into five levels of healthiness ranging from very healthy to very dangerous is the aim of this project work. This is done by a sequential process of data retrieval, data cleaning, data labelling and supervised learning.

1.2 Purpose

The idea of this application is that the user can capture the images of different fruits and vegetables, and then the image will be sent to the trained model. The model analyses the image and detects the nutrition based on the fruits like (Sugar, Fibre, Protein, Calorie intake, etc.).

2. LITERATURE SURVEY

2.1 Existing problem

There are several major health problems in society today and Obesity is one of the main issues. It has increased for nearly three times as much as compared to the year 1975. In 2016, 39% of the adults who are aged 18 years old and above were overweight, and 13% of them were obese (WHO, 2018). It is associated with diseases like cardiovascular, hypertension and also menstrual problems.

Over time, people have been become more conscious about their diet and attempt to have calories control over the years. People have better self-conscious in taking care of these issues and eat healthier with a proper diet plan. Counting the Calorie is a common technique used to calculate their energy taken from one's food consumption. Many are used for the purpose of losing, gaining and maintaining weight. In the past, people have been using traditional ways in calorie counting where they estimate the portion of their meals and then estimating the number of calories in the calories listed book. But this method is pretty much inaccurate since people required to estimate their food portion and the process is very time consuming where they need to look for different listing in the book.

As of now, people have been using modern ways to estimate the calories. Many health-based applications have featured this function in it, where they provide a calories information database for the users and they can search manually through the food listed, then the application will summarize the counting. Nutritional information will also be listed for the user purpose. Moreover, some applications allow the users to capture a picture of their meal & algorithm which is used to process the image and automatically detect the objects, listing down all the nutritional facts and calories information related to the food in a generalized portion.

Although these applications are able to do the basic calories counting, but the result is based on a generalized portion and the amount can be customized by the users. This will lead to inaccurate result, since the portion itself is selected by the users. A user doesn't know how much amount of proper food they are consuming, so the

calculations for the calories counting could be wrong. However, this can be improved and enhanced using object counting algorithm. The idea here is to classify each of the class into different kind of portion with an appropriate calorie's information, and then the applications should able to do quantities counting from the image taken by the user. Therefore, the algorithm is able to segment the portion size of the food itself and then determine the correct quantities, and finally provide a more accurate and reliable calories information based on the values. This is aimed to further enhance calories counting by improving the accuracy of the result and avoid the hassle of having users to manually do a look up in the listing, the process could be shortened and assist them in planning a more reliable diet.

2.2 References

L. Jiang, B. Qiu, X. Liu, C. Huang and K. Lin, "DeepFood: Food Image Analysis and Dietary Assessment via Deep Model," in IEEE Access, vol. 8, pp. 47477-47489, 2020, doi:
10.1109/ACCESS.2020.2973625.

J. Aravind and J. D. Sweetlin, "Nutrient facts analysis using supervised learning approaches," 2017 Conference on Information and Communication Technology (CICT), 2017, pp. 1-6, doi: 10.1109/INFOCOMTECH.2017.8340604.

M. -L. Chiang, C. -A. Wu, J. -K. Feng, C. -Y. Fang and S. -W. Chen, "Food Calorie and Nutrition Analysis System based on Mask R-CNN," 2019 IEEE 5th International Conference on Computer and Communications (ICCC), 2019, pp. 1721-1728, doi:
10.1109/ICCC47050.2019.9064257.

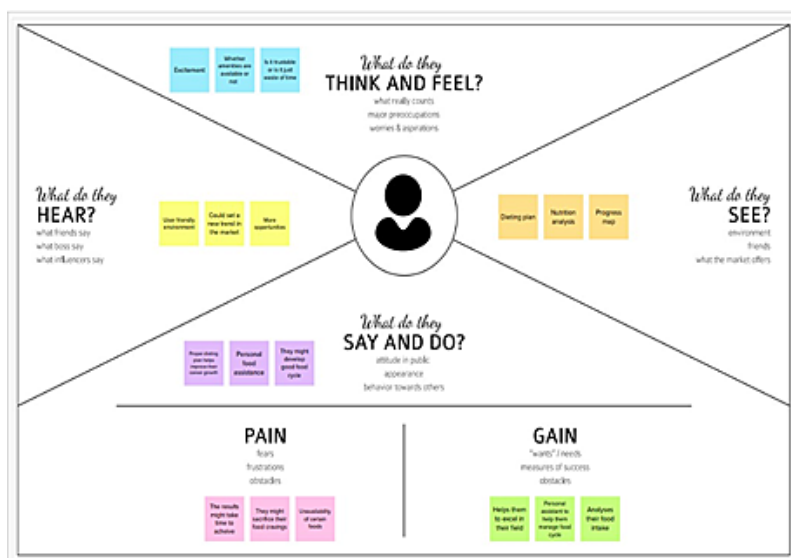Gerald F. CombsJrProfessor Emeritus, in The Vitamins (Fourth Edition), 2012

Mirjana Gurinović, ... Maria Glibetić, in Reference Module in Food Science, 2017
2.3 Problem Statement Definition

Question	Description
Who does the problem affect?	The users who want to maintain a healthy and fit body but no one to guide them on their dieting.
Why is it important?	It is important and easy for a user to use AI software rather than having a physical consultant.
What are the benefits?	1. AI based technology to detect accurately 2. Faster processing of data 3. Better and interactive UI / UX
How is it better than the others?	Application with interactive UI / UX optimized model with higher accuracy
When to use?	In scenarios when we want to have a nutrition analyser.

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstroming

3.3 Proposed Solution

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Nowadays, there are several health problems in society. Obesity is one of the main issues and has been increased for nearly three times as much as compared to the year 1975. In 2016, 39 % of the adults aged 18 years old and above were overweight, and 13 % of them were obese (WHO, 2018). It is associated with diseases like cardiovascular, hypertension and menstrual problems. Over time, people have been more conscious

		about their diet and attempt to have calorie intake under control. People are better self-conscious in taking care of these issues and eat healthier food with a proper diet plan. Counting on calories is a common technique used to calculate energy obtained from food consumption. This helps people to lose, gain or maintain weight. In the past, people traditionally count calories by estimating the portion of their meals and check the calorie level in the calorie reference book. But this method is inaccurate since they need to look for different listings in the book.
2.	Idea / Solution description	The idea of this application is that the user can capture the images of different fruits and vegetables, and then the image will be sent to the trained model. The model analyses the image and detects the nutrition based on the fruits like (Sugar, Fibre, Protein, Calorie intake, etc.).
3.	Novelty / Uniqueness	The application has several unique features. The main feature is that the user need not have to visit or consult a Nutritionist (or) a Dietician to follow a fit and healthy diet.This application has the feature of analysing the entire nutritional content of fruits and vegetables by simply scanning them. The trained system can able to provide suggestions regarding the choice of food and

		calorie intake to be followed based on fitness goals stating that how much weight should gain / lose according to the current height and weight of an individual.
		It provides for a personalized dietary requirement for individuals who have limited preferences while choosing food.
4.	Social Impact / Customer Satisfaction	People can do weight managements, strengthen their bones and muscles, manage chronic health conditions & disabilities.
5.	Business Model (Revenue Model)	Social media is the best way to spread the word about our application and with the help of influencers we can attract normal people. Clustering and targeting the fitness people with the help of local gyms. The business model uses the idea of community (or) chat feature where fitness enthusiasts can interact on fitness plans and routines which gain attention of doctors, nutritionists, dieticians and several fitness trainers, mentors and influencers to use the platform.

6.	Scalability of the Solution	It is a vital part of analytical chemistry that provides information about the chemical composition, processing, quality control and contamination of food.

3.4 Problem Solution fit

4. REQUIREMENT ANALYSIS

4.1 Functional requirements

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Users must create an account in order to use the application. This can be accomplished by creating a persona on the application with a username and password, or by using an existing email ID.
FR-2	User Confirmation	When a user registers for the application, they will receive an email confirmation to the email address they used to register. OTP authentication is used to prevent identity theft.
FR-3	Calorie Calendar Creation	A calendar is created in association with the account when a user profile is created. This calendar is personal to the user and keeps track of calories consumed per day as well as other statistics.

FR-4	Image Capturing and Processing	The application allows users to take pictures of the ingredients they eat. These are fed into the model in order for it to predict their labels, i.e. identify the fruits. The quantity of the fruits should also be determined. The application should be able to work with lowquality and low-resolution images as well.

FR-5	Calorie Value Computation	After locating the ingredient labels and quantities, the net calorie value of the meal is calculated by adding the calories of each ingredient in their respective amounts. Calorie values are obtained from the internet, while frequently used items are obtained from a database.
FR-6	Storage of Data	A backend database stores information about the user and their log in details. In addition, calorific information for frequently consumed ingredients is stored to reduce overhead and complexity.
FR-7	Calorie OverConsumption Notification	When a user consumes more calories than allowed for the day, the application sends a notification to that user. The application then recommends low-calorie diets to avoid overconsumption.
FR-8	Diet Plan Specification	Users can choose the type of diet plan they want to follow based on their goals, such as weight loss or muscle building. The application searches the internet for diet plans and food items that will help them achieve their goals.

4.2 Non-Functional requirements

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The application should be easy to use for the users. The interface should be simple to use and understand. The image capture process should be quick and painless.

NFR-2	Security	Users' personal information and calorie calendars should not be disclosed or shared with other users. Data privacy must be protected.
NFR-3	Reliability	The application must correctly identify the fruits in the captured image and calculate their nutritional value. The calories should be counted and calculated precisely.
NFR-4	Performance	The application should be built on a highly efficient prediction model to ensure accurate results. It should consider the complexities of time and space.

NFR-5	Availability	The application should be accessible and efficient to its users at all times. It should not experience problems such as application crashes.
NFR-6	Scalability	The application should be able to support feature and functionality updates. The system should be designed in such a way that it can be upgraded using the existing underlying architecture

5. PROJECT DESIGN

5.1 Data Flow Diagrams

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the informatiowhere data is stored
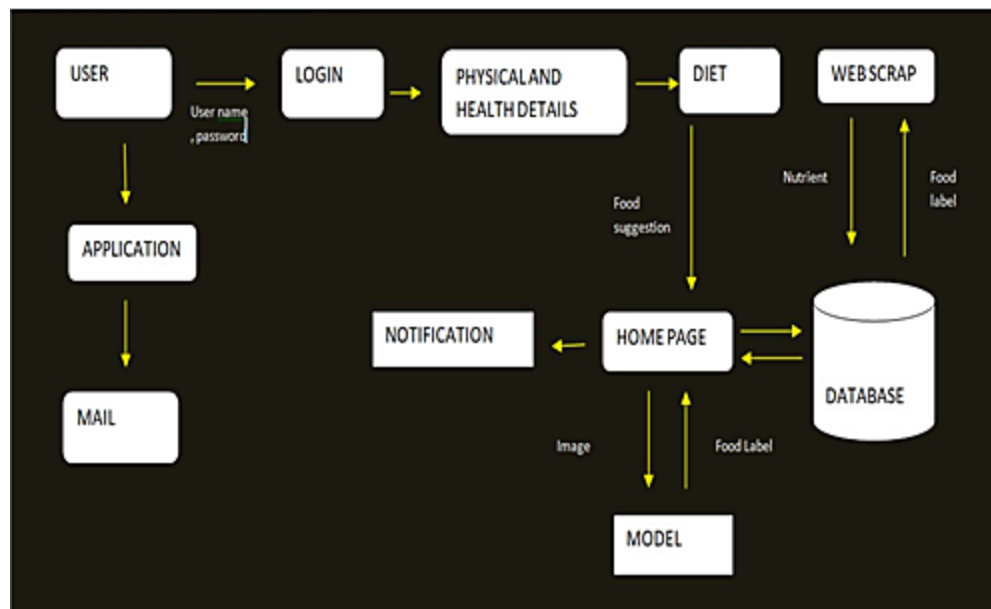
Architecture

Solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

A technical solutions architect is somebody who helps companies design and delivers a range of solutions to their problems. Technical solutions architects need to have the skills and the knowledge to create solutions that fit in with company strategy.

Prediction

INPUTS

UI

CNN Model

USER

EVALUATION

DL algorithm

Train Data

Data preprocessing

Test Data

Image Data
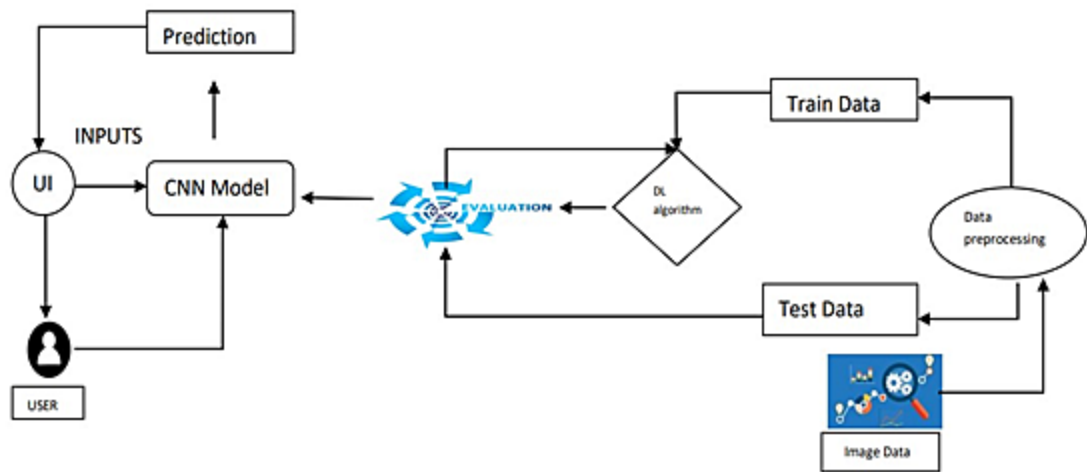
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	Not Required		Medium	Sprint-2
Customer (Web user)	Data Setup	USN-7	As a User, I will enter my Data's which includes Height, Weight, Age & Gender ...	I can include the data contents in the application	High	Sprint-2
Customer Care Executive	Queries	USN-8	As a User, I can raise and submit their queries in the Q&A section	I can raise the queries how to use the application in Q&A.	Medium	Sprint-1
Administrator	Diet Chart	USN-9	User can customize the Diet chart based upon their Maintenance calorie.	I can customise the diet chart.	High	Sprint-2
	Liquid Intake	USN-10	User can add the amount water they consume and get the hourly remainder to consume water	I can get the hourly remainder to consume water	Medium	Sprint-1
	Workout	USN-11	I can add the customized workout to do on the daily basis.	I can the daily workout session.	High	Sprint-1
	Community Chart	USN-12	User can create a community and chat with them accordingly	I can interact with other users.	Medium	Sprint-2

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Team Members
Sprint 1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	High	Rambalaji G , Sooraj K
		USN-2	As a user, I will receive confirmation email once I have registered for the application	High	Praveenraj S, Rambalaji G
		USN-3	As a user, I can register for the application through Facebook	Low	Rambalaji G , Sooraj K
		USN-4	As a user, I can register for the application through Gmail	Medium	Sri Prasanna Kumar, Sri Sai Rithvik Thota
Sprint 2	Login	USN-5	As a user, I can log into the application by entering email & password	High	Rambalaji G , Sooraj K
	Dashboard	USN-6	As a user, I can view my profile and update my details	Medium	Rambalaji G , Sooraj K
		USN-7	As a user, I can view my personal calorie calendar	High	Praveenraj S, Rambalaji G
		USN-8	As a user, I can change my password	High	Sri Prasanna Kumar, Sri Sai Rithvik Thota
Sprint 3	Image Capturing	USN-9	As a user, I can capture images of the ingredients I consume	High	Sri Prasanna Kumar, Praveenraj S
	Image Processing	USN-10	In the application, the captured images are processed to label constituent ingredients	High	Praveenraj S, Rambalaji G
	Data Storage	USN-11	In the application, the calorie value of different food items are stored using a database	High	Sri Prasanna Kumar, Sri Sai Rithvik Thota
	Calorie Value Computation	USN-12	As a user, I am informed of the calorie value of the ingredients used.	High	Rambalaji G , Sooraj K
Sprint 4	Data Storage	USN-13	As a user, the details of the calories I've consumed over the course of a day are stored.	High	Rambalaji G , Sooraj K
	Calorie-Over Consumption	USN-14	As a user, I am notified if I cross the daily recommended value of calories for	High	Sri Prasanna Kumar, Sri Sai

	Notification		a day.		Rithvik Thota
	Diet Plan Specification	USN-15	As a user, I can specify my target based on which I receive personalized diet plans.	High	Sri Prasanna Kumar, Praveenraj S

6.2 Sprint Delivery Schedule

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	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

Velocity:

Imagine we have 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).

$$AV = \frac{velocity}{sprint\ duration} = \frac{20}{10} =$$

Reports from JIRA
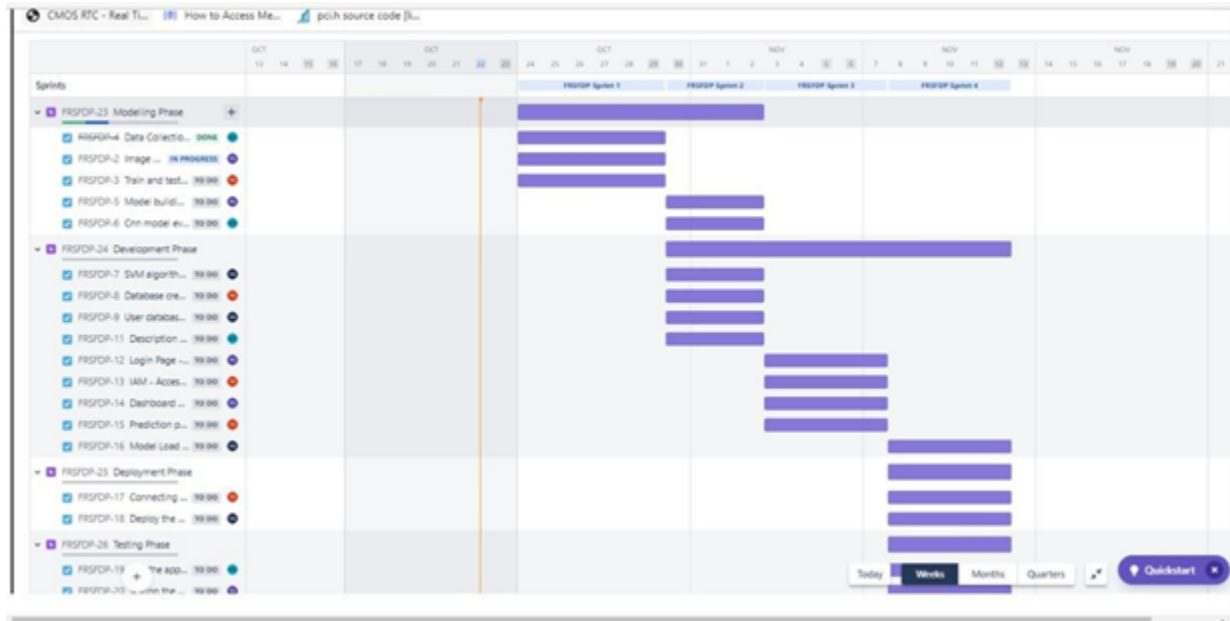
7. CODING & SOLUTIONING

7.1 Feature 1

This feature works on the web cam detection where the web app access the web cam of the user's device , which with the user can input the bot with the food for which he wishes to learn about nutrient content and the nutrious value
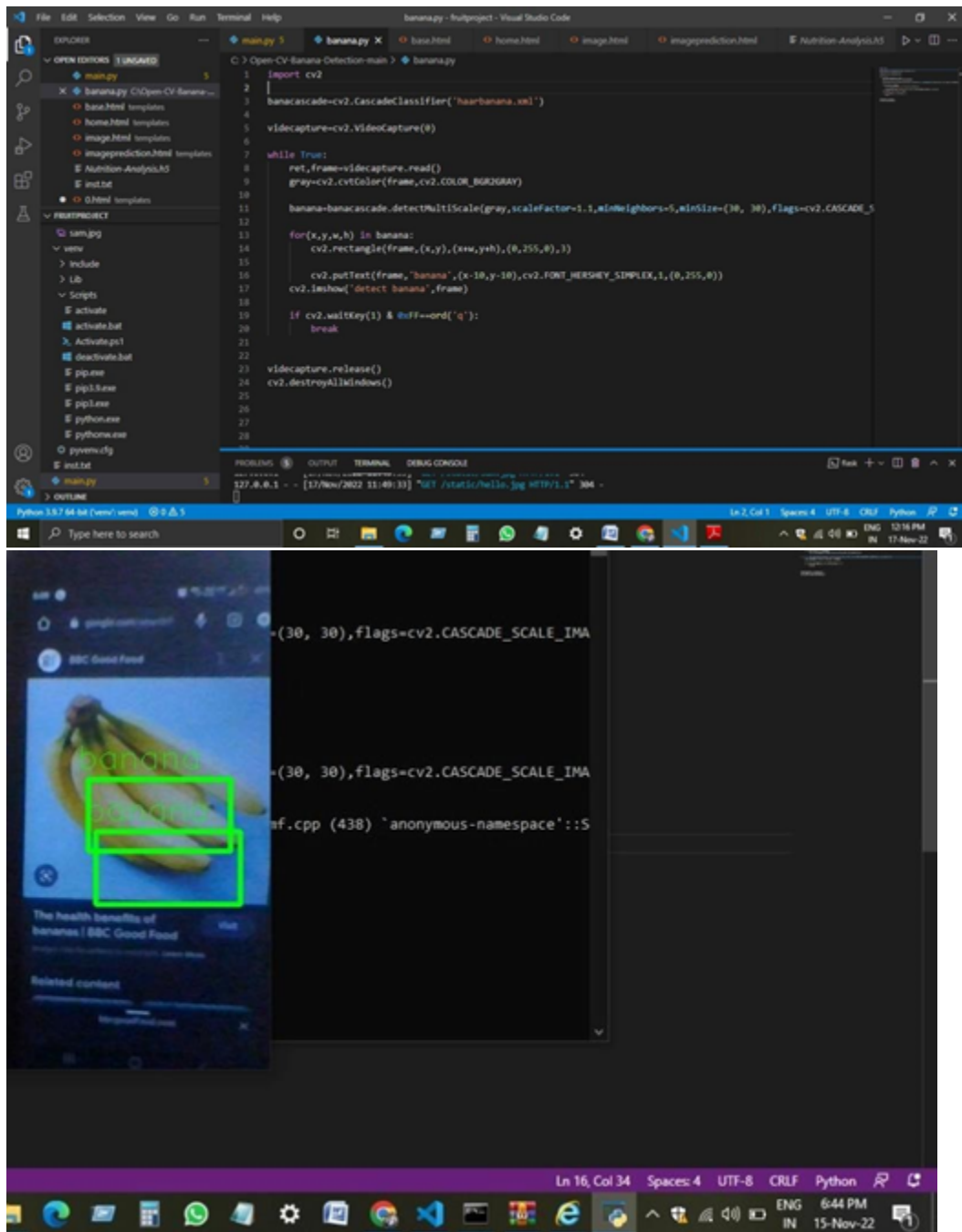
7.2 Feature 2

The second feature involves the other input method that our web site allows which is through direct image input through the website which processes the image uploaded to identify the food in the image and provides with its nutrient value

8.
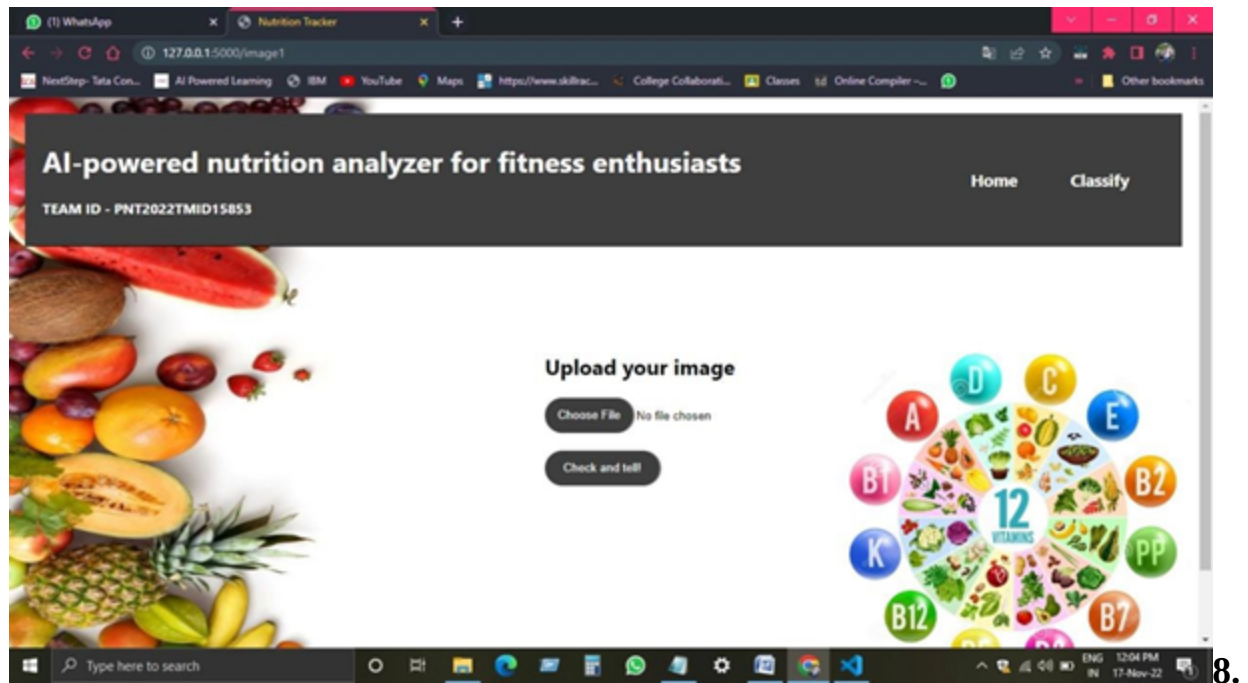
TESTING

8.1 Test Cases

This report shows the number of test cases that have passed, failed, and untested.

Section Total	Total Cases	Not Tested	Fail	Pass
Home page	10	0	4	6
Predict page	20	0	15	5
Upload	7	0	2	5
result	6	0	4	2

8.2 User Acceptance Testing

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User

Acceptance Testing (UAT).

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	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

9. RESULTS

9.1 Performance Metrics

Nutrients in it

sugar_g : 10.3

fiber_g : 2.4

serving_size_g : 100.0

sodium_mg : 1

name : apples

potassium_mg : 11

fat_saturated_g : 0.0

fat_total_g : 0.2

calories : 53.4

cholesterol_mg : 0

protein_g : 0.3

carbohydrates_total_g : 13.8

Image credit: istockphoto.com/Denira777

Nutrients in it

sugar_g : 8.4

fiber_g : 2.2

serving_size_g : 100.0

sodium_mg : 1

name : orange

potassium_mg : 23

fat_saturated_g : 0.0

fat_total_g : 0.1

calories : 50.4

cholesterol_mg : 0

protein_g : 0.9

carbohydrates_total_g : 12.4

10. ADVANTAGES & DISADVANTAGES

Advantages:

- ➤ Considered the most precise method of dietary intake assessment.
- ➤ May be used to corelate precise intake with biomarker levels.
- ➤ May be more accurate for culture-specific foods,unique foods or dishes,or foods that are consumed very rarely.less reliance on memory.
- ➤ Can be Completed by face-to-face interview by telephone.
- ➤ Can be used with literate or illiterate populations.
- ➤ Reflects intake of previous day,so participants are less likely to alter eating behaviours.

Disadvantages:

- ➤ High respondant burden may impact foods or quantities that are selected.
- ➤ May accurately reflect intake during the study period but not habitual food intake or selection.
- ➤ Relatively high respondent burden may affect foods or quantities thar are selected.
- ➤ Patients tend to record less diligently as the duration increases.
- ➤ Requires a skilled interviewer requires sufficient memory skills.
- ➤ Can be affected by inadvertent or international reporting errors,seasonal variations,and day of the week.

11. CONCLUSION

Despite having various methods for detecting and classifying the nutrient content in the foods using automatic or computer vision, research into this field has been lacking. Over the last few years, there has been tremendous progress in the performance of convolutional neural networks. The new generation of convolutional neural networks (CNNs) has shown promising results in the field of image recognition. A novel approach to automatically classifying and detecting foods was examined through this project utilizing deep learning techniques. With an accuracy of 90%, the developed model could distinguish foods and correctly present them with the nutrient content of the food which shall come out handy for the people and others who are curious about it but without proper resource.

12. FUTURE SCOPE

The ultimatum for the future project is to include a fully functional camera input option with both input trained with the utmost possible efficiency and make the model as accurate as possible as to provide with right result and help them evaluate their daily food correctly and also display the content of nutritional value as their ease and also expand the domain of its service with a cloud based ai app performing the similar functions

13. APPENDIX

Source Code **Main.py**

```python
from flask import Flask,render_template,request
import os  import numpy as np from
tensorflow.keras.models import load_model from
tensorflow.keras.preprocessing import image import
requests
app=Flask(__name__,template_folder="templates")
model=load_model('Nutrition-Analysis.h5')
print("Loaded model from disk")



@app.route('/home') def
home():
    return render_template("home.html")


@app.route('/image1',methods=['GET','POST']) def
image1():
    return render_template("image.html")


@app.route('/predict',methods=['GET','POST'])
def predict():
    if request.method=='POST':
```

```python
        f=request.files['file']

        basepath=os.path.dirname('__file__')

filepath=os.path.join(basepath,'static',f.filename)

        f.save(filepath)



        img=image.load_img(filepath,target_size=(64,64))

x=image.img_to_array(img)        x=np.expand_dims(x,axis=0)

pred=np.argmax(model.predict(x),axis=1)

        print("prediction",pred)



        index=["APPLES","BANANA","ORANGE","PINEAPPLE","WATERMELON"]



        result=str(index[pred[0]])

x=result        result=nutrition(result)



        return render_template("0.html",showcase=(result),showcase1=(f.filename))



def nutrition(index):

    url="https://calorieninjas.p.rapidapi.com/v1/nutrition"     querystring={"query":index}


    headers={
```

```python
        "X-RapidAPI-Key":"228bc54e2bmsh125425366c0edcdp11af24jsn5f87cef4e48e",

"X-RapidAPI-Host": "calorieninjas.p.rapidapi.com"

        }


    response=requests.request("GET",url,headers=headers,params=querystring)

    print(response.json())    return

response.json()['items']
```

0.html

```html
{% extends 'base.html' %}


{% block content %}
<div class="ansView">

    <div class="ans-left">

        <h1>Image Uploaded:</h1>

        <img src={{ url_for('static', filename=showcase1  ) }} >

    </div>


    <div class="ans-right">

        <h1>Nutrients in it</h1>

        {% for k in showcase[0] %}

        <p>{{ k }} : {{ showcase[0].get(k) }}</p>

        {% endfor %}
```

</div>

</div>

{% endblock %}

Base.html

<html>

    <head>

        <title>Nutrition Tracker</title>

        <style>

            a{

                text-decoration:none;

            }

            body{

                /*background-color: #a0d2eb;*/   background-image: url('static/hello.jpg');   background-size: 100% 100%;

            }

            .homepage{

                display: flex;   flex-direction: column;   font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;

            }

```css
.ansView{
    flex-direction: column;
    padding: 0 200px 0 200px;
    margin-left: 400px;

}
.ans-right{
    flex-direction: column;
    padding: 0 200px 0 200px;
    margin-left: 400px;
}
.navbar{
    height:150px;
    display: flex;
    justify-content: space-between;
    align-items: center;
    margin:10px 10px 100px 10px;
    border-bottom: 1px solid black;
    background:#3e3e3e;
    color:white;
}

.nav-left {
    padding-left:20px;
    color:white;
}
```

```css
.nav-right{
    display: flex;
    width: 300px;
    justify-content: space-evenly;
    text-decoration: none;
}

.nav-right a{
    color: white;
}
.homeview{
    font-size: x-large;
    margin: 0 350px 0 350px;
    display: flex;
    flex-direction: column;
    justify-items: center;
}
.uploadview{
    flex-direction: column;
    padding: 0 200px 0 200px;
    margin-left: 400px;

    justify-content: center;
    justify-items: center;
}
.formView{
    display: flex;
```

```css
        flex-direction: column;
justify-content: center;          justify-items:
center;
        }


        .homeview p{
          text-align: center;
        }
        .submit{
border:none;          color:
#a0d2eb;
background:#3e3e3e;
border-radius:50px;
height:40px;
color:white;
width:130px;          box-
shadow: 2px 0px 0px grey;
margin-top: 20px;
        }
        .submit:hover{
background-color: #a0d2eb ;
color: #3e3e3e;
        }
```

```css
    #choose_file{

width:300px;

background:white;

border:none;

outline:none;

        box-shadow: 2px 5px 2px black;            border-

radius:50px;

        }

        ::-webkit-file-upload-button{

border:none;            color: #a0d2eb;

background-color:#3e3e3e;

border-radius:50px;            height:40px;

color:white;            width:100px;

box-shadow: 2px 0px 0px grey;

        }

        ::-webkit-file-upload-button:hover{

background-color: #a0d2eb ;            color: #3e3e3e;

    }
    </style>
  </head>


  <body>
    <div class="homepage">
    <div class="navbar">
```

```html
        <div class="nav-left">

            <h1>AI-powered nutrition analyzer for fitness enthusiasts</h1>

            <h4>TEAM ID - PNT2022TMID15785</h4>

        </div>

        <div class="nav-right">

            <a href={{ url_for('home') }}><h3>Home</h3></a>

            <a href={{ url_for('image1') }}><h3>Classify</h3></a>

        </div>

    </div>

    {% block content %}

    {% endblock %}

    </div>

    </body>


</html>
```

Home.html

```html
{% extends 'base.html' %}

{% block content %}


<div class="homeview">

    <p>Food is essential for human life and has been the concern of many healthcare
conventions. Nowadays new dietary assessment and nutrition analysis tools enable more
opportunities to help people understand their daily eating habits, exploring nutrition patterns
and maintain a healthy diet. Nutritional analysis is the process of determining the nutritional
content of food. It is a vital part of analytical chemistry that provides information about the
chemical composition, processing, quality control and contamination of food.</p> </div>
```

{% endblock %}

Image.html

{% extends 'base.html' %}

{% block content %}
```html
<div class="uploadview">
    <form class="formView" method="post" action="/predict" enctype="multipart/formdata">
        <h2>Upload your image</h2>


        <input id="choose-file" type="file" name="file" required>
        <input class="submit" type="Submit" value="Check and tell!">
    </form>
</div>
<img src="static/sam.jpg" style="position:relative;width:30%;margin-left:70%;margin-top:180px;">
</g>
```
{% endblock %}

Github & project Development:

https://github.com/IBM-EPBL/IBM-Project-29412-1660125227

Demo link:

https://drive.google.com/file/d/1LeyoO9WFxm9r2oNhNjPdBnA5EeysZuDy/view?usp=share_link