

**NALAIYA THIRAN PROGRAM**  
**AI-POWERED NUTRITION ANALYZER FOR**  
**FITNESS ENTHUSIASTS**  
**PROJECT REPORT**

**SUBMITTED BY**

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**COIMBATORE**

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# **1. INTRODUCTION**

## **1.1 PROJECT OVERVIEW**

As the world becomes more health-conscious, there is an increasing need for technical solutions to meet this growing need. Numerous firms and websites that target this market have benefited in India from this global trend. These platforms have made use of AI and its different subsets to calculate calorie consumption and provide food suggestions for a balanced diet. The majority of the time, what we observe is that these platforms serve as a data repository, making real-time information available to many clients that work in this industry in exchange for a set of fees. In this article, we examine the top deep learning and artificial intelligence (AI)-based online services that offer real-time reports on dietary intake. The primary goal of the project is to construct a model that will be used to categorize fruits according to their various properties, such as color and form.

## **1.2 PURPOSE**

Fruit features include color, shape, texture, and others. Here, users can take pictures of various fruits, which are subsequently uploaded to a trained algorithm for analysis. The main goal of the project is to construct a model that is used for classifying the fruit depending on the different nutrients. The model analyses the image and detects the nutrients based on the fruits, including glucose, fiber, protein, etc.

# **2. LITERATURE SURVEY**

## **2.1. EXISTING PROBLEM**

Over time, poor nutrition can increase the risk of contracting certain diseases and other health issues, including being overweight or obese, tooth decay, and high blood pressure. In the short term, it can increase tension, fatigue, and our capacity to function. Low intakes of specific nutrients are now strongly linked to the risk of acquiring chronic illnesses, such as various malignancies, heart disease, diabetes, osteoporosis, and depression. Inadequate vitamin consumption during pregnancy may have long-term effects on the unborn child's health.

## **2.2 REFERENCES**

- T. Akram, H. H. Rizvi, S. A. Ali, S. M. Hamza and A. Ifthikhar, "OCR and Barcode based Halal and Health Analyzer," *2020 International Conference on Information Science and Communication Technology (ICISCT)*, 2020, pp. 1-5

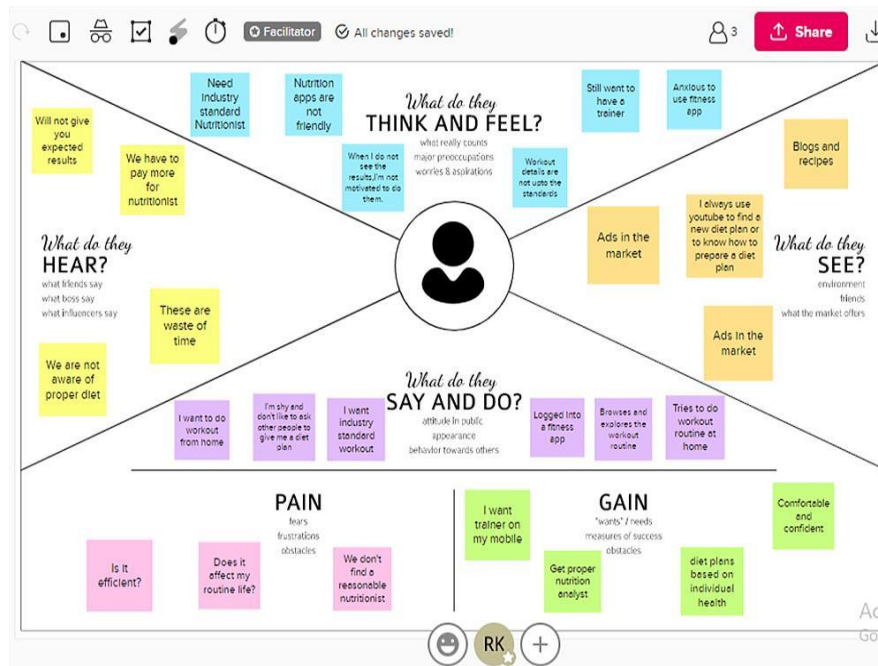
- S. Majumder, T. Mondal and M. J. Deen, "A Simple, Low-Cost and Efficient Gait Analyzer for Wearable Healthcare Applications," in *IEEE Sensors Journal*, vol. 19, no. 6, pp. 2320-2329, 15 March 2019, doi: 10.1109/JSEN
- C. Martinez and J. D. Velasquez, "An Efficient New Scheme of Fitness Evaluation in Genetic Programming using the R Language," in *IEEE Latin America Transactions*, vol. 14, no. 4, pp. 1866-1869, April 2016
- R. Sugawara and M. Nakata, "Theoretical Analysis of Accuracy-Based Fitness on Learning Classifier Systems," in *IEEE Access*, vol. 10, pp. 64862-64872, 2022
- Y. Qiu, X. Zhu and J. Lu, "Fitness Monitoring System Based on Internet of Things and Big Data Analysis," in *IEEE Access*, vol. 9, pp. 8054-8068, 2021

## **2.3 PROBLEM STATEMENT DEFINITION**

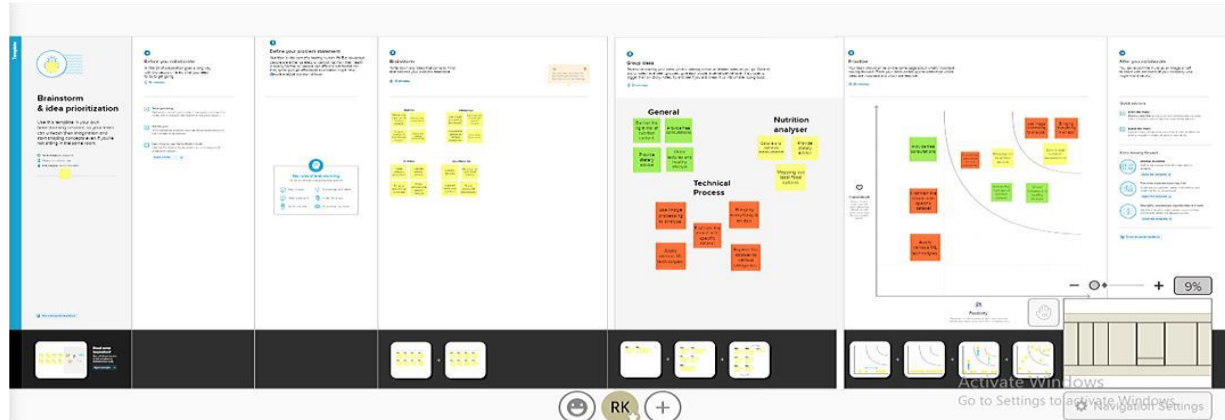
Your specific fitness objectives and current level of fitness will determine how much exercise you require. It's crucial to begin within your capabilities and pay attention to your body's signals regarding pain and injury. Being overweight, which is characterised by a high percentage of body fat, is a widespread health problem. Your risk of dying from hypertension, coronary heart disease, sleep apnea, endometrial, breast, prostate, and colon cancer increases if you are overweight or obese. Junk food has a high caloric content but little nutritional value, which causes obesity by increasing metabolic weight. A person who is obese is more likely to develop serious illnesses, including stroke and NCDs, in addition to the serious illnesses like diabetes or high cholesterol. The immune system could become compromised by overtraining. It makes the heart work harder. Inadequate exercise may result in fractures, sprains, strains, and other painful injuries.

## **3. IDEATION AND PROPOSED SOLUTION**

### **3.1 EMPATHY MAP CANVAS**



### 3.2 IDEATION AND BRAINSTORMING



### 3.3 PROPOSED SOLUTION

**Problem Statement:** To identify the amount of nutrition present in the food and to help for their nutrientfitness. 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. The main aim of the project is

to building a model which is used for classifying the fruit depends on the different characteristics like color, shape, texture etc. Here the user can capture the images of different fruits 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, Fiber, Protein, Calories, etc.).

**Idea / Solution Description:** In this project we are going to identify amount of calories present in the food and recommend the nutrition food for their fitness. Providing accurate identification of the input data and nutritional information based on the data collected in accordance with the user's physical circumstances

**Novelty / Uniqueness:** It uses AI for classifying various nutrients in the fruit which will provide various recommendations as per the person's BMI. These days, additional opportunities exist to assist people in understanding their daily eating habits, examining nutrition patterns, and maintaining a balanced diet thanks to new dietary evaluation and nutrition analysis technologies.

- Food contamination, composition processing, and quantity control are all provided by analytical chemistry, which includes the process of analyzing the nutritional content of food. We just eat on a diet during the day. And a balanced diet is one that has the right amount of each vitamin we need each day.
- A lifetime of healthy eating is necessary for optimal health. The risk of obesity, coronary heart disease, stroke, some malignancies, type 2 diabetes, high blood pressure, osteoporosis, and tooth decay can all be decreased by eating a balanced diet.

**Social Impact / Customer Satisfaction:** It doesn't require individuals to afford their own fitness trainer. It is cost efficient and they can very well maintain their fitness. An individual's nutritional status and social, psychological, and cultural circumstances are related in a cause-and-effect manner. One's eating habits are influenced by cultural norms, economic stability, and views toward health and disease.

- A nutritious diet lowers children's chance of developing chronic diseases and promotes healthy growth and development. Adults who follow a healthy diet have a lower risk of obesity, heart disease, type 2 diabetes, and several malignancies.
- In addition, diet culture influences the rising prevalence of anorexia, bulimia, binge eating disorder, and avoidant/restrictive food intake disorder, even though negative cultural standards are only one of many factors that contribute to the development of mental health issues and eating disorders.

**Business Model:** Business model for this application is to reduce the people weight with healthy nutrition. Consultation with local nutritionists and trainers for customized strategies. Adopt a particular diet under the guidance of a professional. Promote nutritional supplements and fitness equipment. Advertising for health clubs and hospitals.

**Scalability:** Scalability of the application is high as it can be used by all age group of people and people with any kind of co-morbidities. Make at least half of the grains you eat each day whole grains. Whole grain products are a significant source of fibre and energy. A healthy diet can help you avoid many chronic, non-communicable diseases like cancer,

diabetes, and heart disease. A balanced diet that limits salt, sugar, saturated fats, and trans fats from industrial production is crucial for good health.

### 3.4 PROBLEM SOLUTION FIT

Project Title: AI-Powered Nutrition Analyzer for Fitness Enthusiasts			Project Design Phase-I - Solution Fit Template			Team ID: PNT2022TMD19729		
Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <small>Who is your customer?</small> 14- working parents of 0-5 y.o. kids	<b>6. CUSTOMER CONSTRAINTS</b> <small>What are the constraints?</small> Customers can't access our website owing to network problems and network flaws, as there are no further restrictions.	<b>5. AVAILABLE SOLUTIONS</b> <small>What are the available solutions?</small> Physical exercises and yoga are the existing practical solutions but most of the people are not ready to take up the solutions by themselves.	Explore AS, differentiate				
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <small>What jobs do your customers want to get done?</small> Not every people can afford an individual trainer or nutritionist in order to maintain fitness/healthy lifestyle. An application with all the features of a nutritionist is a better solution for this problem.	<b>9. PROBLEM ROOT CAUSE</b> <small>What is the root cause of the problem?</small> People never worried about their health until a pandemic like COVID hit them. In this era, people are becoming weak due to the kind of food habits followed by them.	<b>7. BEHAVIOUR</b> <small>What are the behaviours?</small> Customers with questions about exercise, nutrition, or health will be listed in the Chatbox Once the customers are logged in, they provide details regarding their current					
Focus on J&P, map into RC, understand RC	<b>3. TRIGGERS</b> <small>What triggers the problem?</small> Creating awareness to people through social media platforms. In-person awareness will help us get more users. Creating videos with the benefits of this app will trigger people to use our app.	<b>10. YOUR SOLUTION</b> <small>What is your solution?</small> We are planning to create an application which will be instructing the user regarding the amount of nutrition content in their food through image processing and we also suggest them few fitness activities based on their body conditions like taking account of their BMI, etc.	<b>8. CHANNELS of BEHAVIOUR</b> <small>How will you reach your customers?</small> Initially customers will scan the fruit/any other food item and our app in return will provide the analysis of the nutrition content in that food item.	Focus on AS, map into BE, understand BE				
	<b>4. EMOTIONS: BEFORE / AFTER</b> <small>How do you feel about the problem?</small> Prior to using our program, customers would face insecurity and poor health. Customers who use our app report better health and higher levels of self-esteem.		<b>8.2 OFFLINE</b> <small>How will you reach your customers?</small> The user will follow physical exercises based on their body condition.					
Identify strong TR & EM			Identify strong TR & EM					

## 4. REQUIREMENT ANALYSIS

### 4.1 FUNCTIONAL REQUIREMENTS

- User Registration
- User Confirmation
- User Login
- Choose package
- Generate the daily plan
- Query

### 4.2 NON-FUNCTIONAL REQUIREMENTS

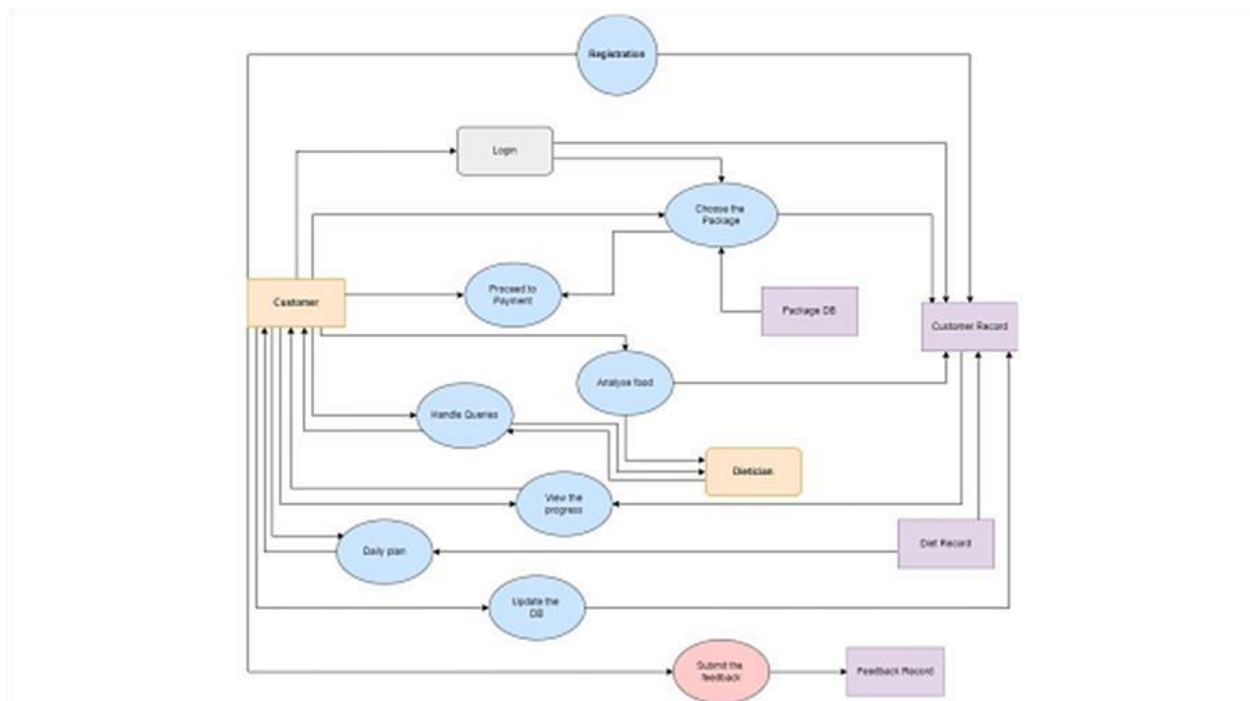
- Usability
- Security



- Efficiency
- Portability
- Scalability
- Reliability

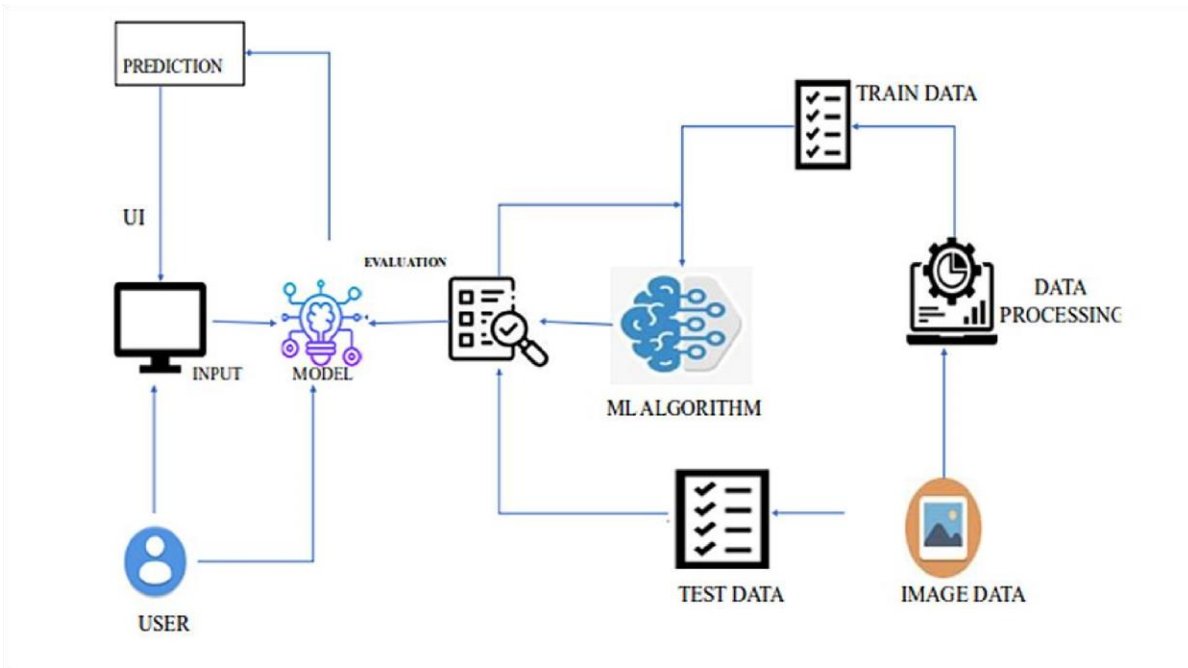
## 5. PROJECT DESIGN

### 5.1 DATA FLOW DIAGRAMS

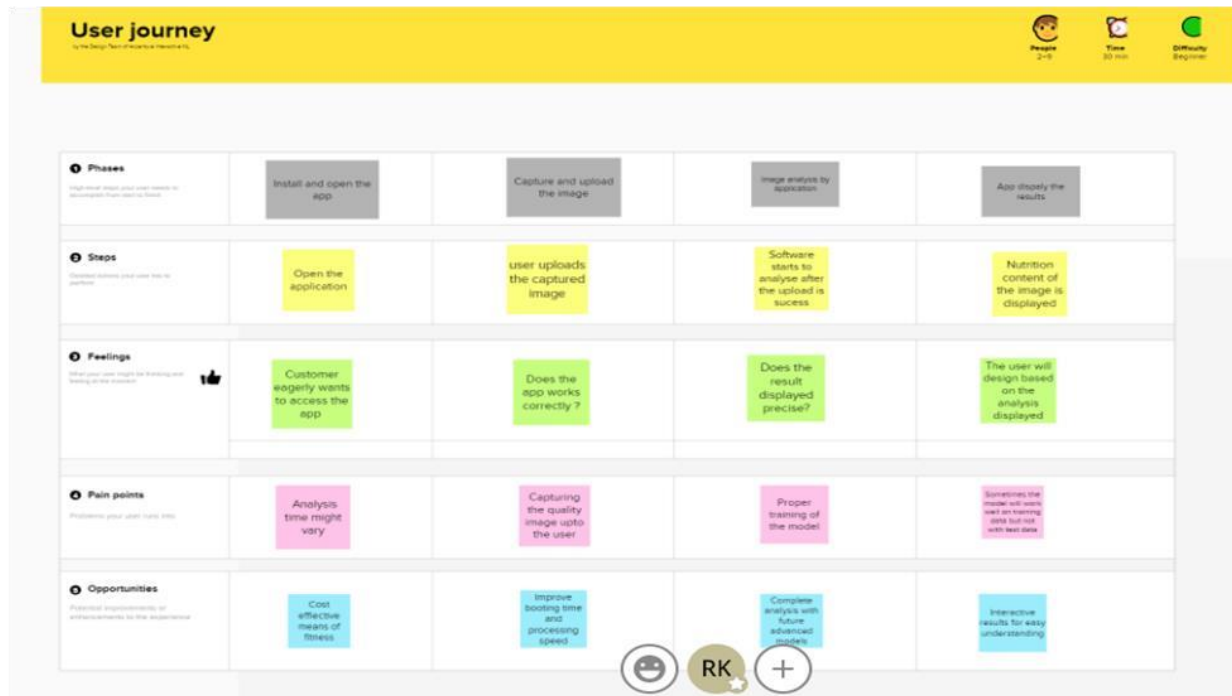


### 5.2 SOLUTION AND TECHNICAL ARCHITECTURE

We are planning to create an application which will be instructing the user regarding the amount of nutrition content in their food through image processing and we also suggest them few fitness activities based on their body conditions like taking account of their BMI, etc. Initially, User will give the image of the food item as input. Our model will process the image and predict the nutrition in the food item. To do this process without any errors, we will be training our model with more relatable training and testing dataset.



## 5.3 USER STORIES



## 6. SPRINT PLANNING AND SCHEDULING

### 6.1 SPRINT PLANNING AND ESTIMATION

<b>Sprint</b>	<b>Functional Requirement (Epic)</b>	<b>User Story Number</b>	<b>User Story / Task</b>	<b>Story Points</b>	<b>Priority</b>	<b>Team Members</b>
Sprint-1	Upload Images	USN-1	Dataset - Collecting images of food items apples , banana, orange, pineapple, watermelon for analysis	2	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG
Sprint-1	Image Preprocessing	USN-2	Image data augmentation - Increasing the amount of data by generating new data points from existing data.	3	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG

<b>Sprint</b>	<b>Functional Requirement (Epic)</b>	<b>User Story Number</b>	<b>User Story / Task</b>	<b>Story Points</b>	<b>Priority</b>	<b>Team Members</b>
Sprint-1	Image Preprocessing	USN-3	Image Data Generator Class - Used for getting the input of the original data	2	Low	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG
Sprint-1	Image Preprocessing	USN-4	Applying image data generator functionality to train set and test set	2	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG
Sprint-2	Model Building	USN-5	Defining the model architecture - Building the model using deep learning approach and adding CNN Layers	2	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG
Sprint-2	Model Building	USN-6	Training , saving, testing and predicting the model	3	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG

Sprint-3	Application Building	USN-7	Home page creation - It shows options of the application Login and registration page creation - User can register and	2	Medium	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
			login through gmail with Id and password Login and registration page creation - User can register and login through gmail with Id and password			
Sprint-3	Application Building	USN-8	Analysis and prediction page creation - It shows the prediction of given user input Creation of about us , feedback and rating page – It shows application history and feedback page to users	2	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG
Sprint-4	Train the Model	USN-9	Cloud deployment – Deployment of application by using IBM cloud server. Functional testing – Checking	3	High	1.Jaisurya P 2.Kathiravan M 3.Kabilan V 4.Ragashanmugam RG

			usability and accessibility			
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<b>Sprint</b>	<b>Total Story Points</b>	<b>Duration</b>	<b>Sprint Start Date</b>	<b>Sprint End Date (Planned)</b>	<b>Story Points Completed (as on Planned End Date)</b>	<b>Sprint Release Date (Actual)</b>
Sprint-1	20	Days	Oct 2022	Oct 2022	20	Oct 2022
Sprint-2	20	Days	Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	Days	07 Nov 2022	Nov 2022	20	Nov 2022
Sprint-4	20	Days	Nov 2022	Nov 2022	20	Nov 2022

## 6.2 SPRINT DELIVERY SCHEDULE

## 7. CODING AND SOLUTIONING

### 7.1 FEATURE 1

```
In [ ]: from google.colab import drive
drive.mount('/content/drive')
```

```
In [ ]: # Unzipping the dataset
!unzip '/content/drive/MyDrive/Dataset.zip'
```

Archive: /content/drive/MyDrive/Dataset.zip  
replace Dataset/TEST\_SET/APPLES/151\_100.jpg? [y]es, [n]o, [A]ll, [N]one, [r]ename:

## Image Preprocessing

```
In [6]: #Importing The ImageDataGenerator Library
from keras.preprocessing.image import ImageDataGenerator
```

## Image Data Augmentation

```
In [7]: #Configure ImageDataGenerator Class
train_datagen = ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)
test_datagen = ImageDataGenerator(rescale=1./255)
```

## Applying Image DataGenerator Functionality To Trainset And Testset

```
In [8]: #Applying Image DataGenerator Functionality To Trainset And Testset
x_train = train_datagen.flow_from_directory(
    r'/content/Dataset/TRAIN_SET',
    target_size=(64, 64), batch_size=5, color_mode='rgb', class_mode='sparse')
#Applying Image DataGenerator Functionality To Testset
x_test = test_datagen.flow_from_directory(
    r'/content/Dataset/TEST_SET',
    target_size=(64, 64), batch_size=5, color_mode='rgb', class_mode='sparse')
```

Found 2626 images belonging to 5 classes.  
Found 1055 images belonging to 5 classes.

```
In [9]: #checking the number of classes
print(x_train.class_indices)

{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
```

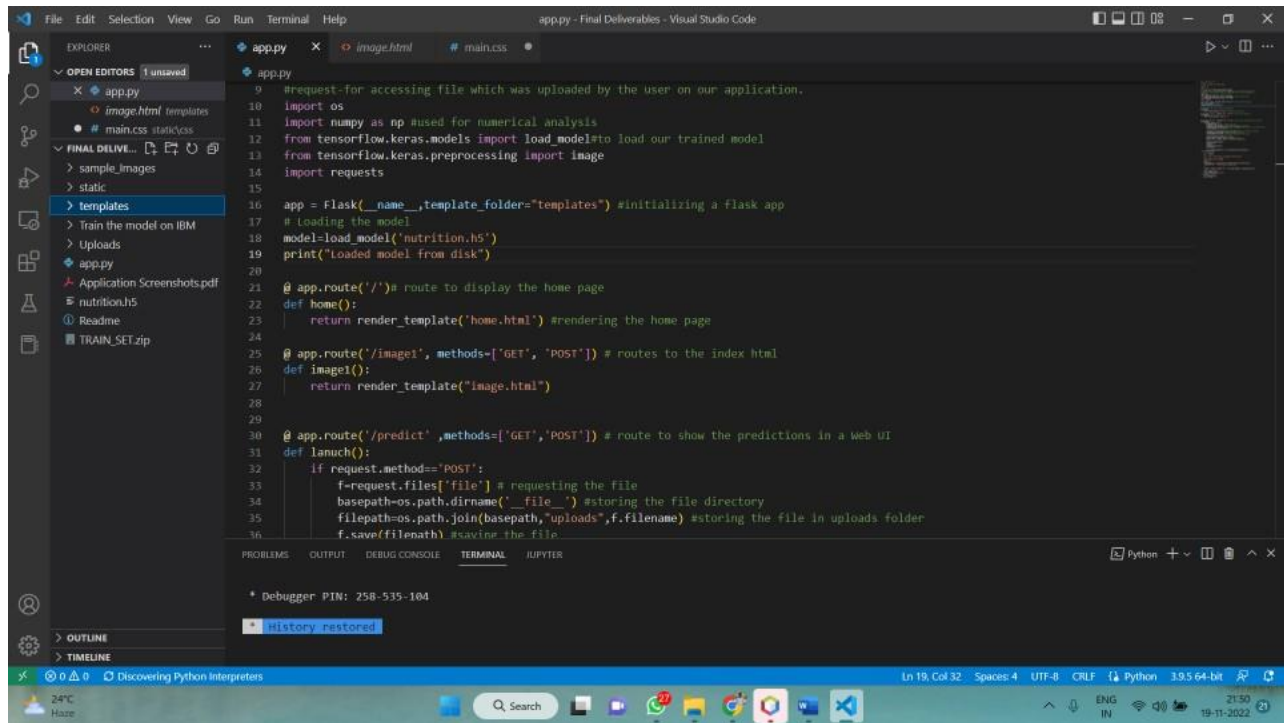
```
In [10]: #checking the number of classes
print(x_test.class_indices)

{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}
```

```
In [11]: from collections import Counter as c
c(x_train.labels)
```

Out[11]: Counter({0: 606, 1: 445, 2: 479, 3: 621, 4: 475})

## 7.2 FEATURE 2



## 8. TESTING

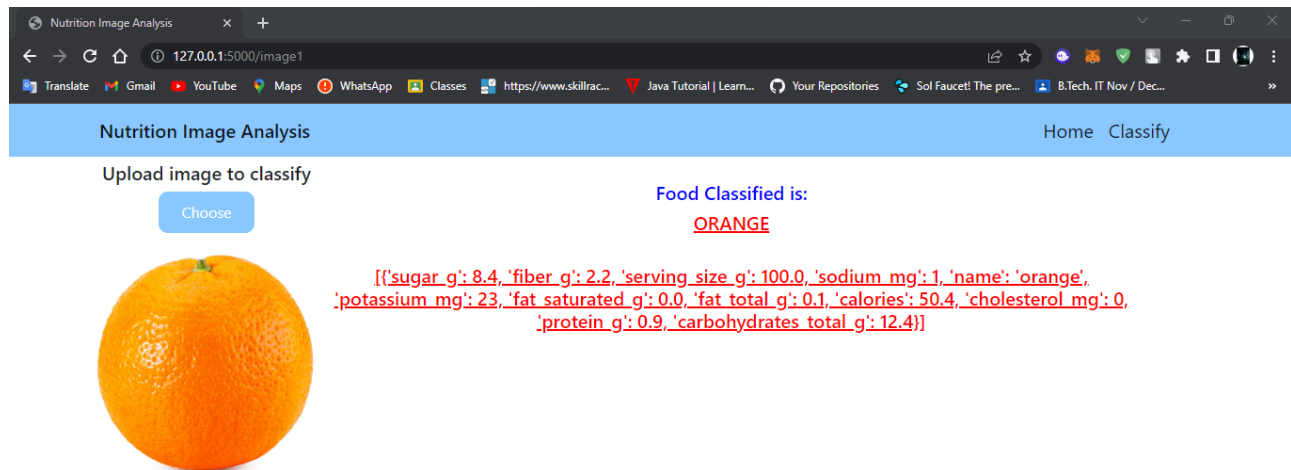
### 8.1 TESTCASES



### 8.2 USER ACCEPTANCE TESTING



## 9. RESULTS



## 10. ADVANTAGES

Nutritional analysis is the process of determining the nutritional content of food. Nowadays, new dietary assessment and nutrition analysis tools enable more opportunities to help people understand their daily eating habits, explore nutrition patterns, and maintain a healthy diet. The advantages of using this application include easy maintenance of our daily diet. It helps us maintain our health in proper condition. It replaces a physical trainer without compromising quality, at a lower cost, and with even more efficiency.

## 11. CONCLUSION

Good nutrition has been shown to support cognitive growth and academic performance in addition to enhanced physical health and a decreased risk of disease. This powered nutrition

analyzer for fitness enthusiasts. If left to their own devices, kids won't always choose healthful food. Healthy body and mind depend on a balanced diet and proper meal scheduling. Nowadays, the majority of nations employ health education program in schools that involve student nutrition, vitamin and mineral supplements.

## 12. FUTURE SCOPE

AI is transforming the health sector. AI is currently being used to change people's habits, in addition to being primarily utilised to improve marketing and sales decisions. In future, this application can be implemented with even more specialized features like recommending dietary just by looking a person's image, analyzing a person using person's body parts or organs image. Image processing techniques can be very well exploited along with this application.

## 13. APPENDIX

### Source code:

#### app.py:

```
# -*- coding: utf-8 -*- from flask import
Flask,render_template,request
# Flask-It is our framework which we are going to use to run/serve our
application.
#request-for accessing file which was uploaded by the user on our application.
import os import numpy as np #used for numerical analysis from
tensorflow.keras.models import load_model#to load our trained model from
tensorflow.keras.preprocessing import image import requests

app = Flask(__name__,template_folder="templates") #initializing a flask app
```

```

# Loading the model
model=load_model('nutrition.h5')
print("Loaded model from disk")

@app.route('/')# route to display the home page
def home():
    return render_template('home.html') #rendering the home page
@app.route('/image1', methods=['GET', 'POST']) # routes to the index html def
image1():
    return render_template("image.html")

@app.route('/predict' ,methods=['GET','POST']) # route to show the predictions in
a Web UI def lanuch():    if request.method=='POST':
        f=request.files['file'] # requesting the file
        basepath=os.path.dirname('__file__') #storing the file directory
        filepath=os.path.join(basepath,"uploads",f.filename) #storing the file in uploads
        folder
        f.save(filepath) #saving the file
        img=image.load_img(filepath,target_size=(64,64)) #load and reshaping the
        image
        x=image.img_to_array(img) #converting image to an array
        x=np.expand_dims(x,axis=0) #changing the dimensions of the image
        pred=np.argmax(model.predict(x),
        axis=1)
        print("prediction",pred) #printing the
        prediction
        index=['APPLE','BANANA','ORANGE','PINEAPPLE','WATERMELON']

result=str(index[pred[0]])
print(result)
x=result
result=nutrition(result)
print(result)

        return
render_template("0.html",showcase=(result),showcase1=(x)) def
nutrition(index):
    import
requests
    url =
"https://calorieninjas.p.rapidapi.com/v1/nutrition"

    querystring = {"query":index}
    headers =
{
    "X-RapidAPI-Key": "226fdb7ca6mshc43f1bfd5e9705dp164933jsn6809eaf3d5e3",

```

```

        "X-RapidAPI-Host": "calorieninjas.p.rapidapi.com"        }        response =
requests.request("GET", url, headers=headers, params=querystring)
        print(response.text)        return
response.json()['items'] if __name__
== "__main__":        # running the app
app.run(debug=True)

```

## home.html

```

<!DOCTYPE html>
<head>
<meta charset="utf-8">
<title>Nutrition Image Analysis</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" type="text/css" href="{{ url_for('static',
filename='css/main.css') }}">
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTWfSpd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
</head>
<style>p{margin: 0px;padding:25px;background-color:#a4d356;width:
630px;opacity:0.8;color:#000000;font-family:Georgia, 'Times New Roman', Times,
serif;font-style:initial;border-radius:20px;font-size:17px;}
a{a:hover{background-color:#00ffe5;border-radius: 10px;padding: 5px 15px; }
</style>
<body >
    <nav class="navbar navbar-light" style="background-color: #48a9fda5;">    <span
class="navbar-brand mb-0 h1" style="float: right; padding-left:
80px;">Nutrition Image Analysis</span>
    <div style="padding-right:100px ;">
        <a class="navbar-brand" style="float: right; " href="{{
url_for('image1')}}">Classify</a>
        <a class="navbar-brand" style="float: right; " href="{{
url_for('home')}}">Home</a>
    </div>
</nav>
<div class="home1">
<center>
    <div>
        <br><br><br><br><br>

```

```

    <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. It ensures compliance with trade and
food laws.</p>
</div></center>
</div>
</div>
</body>
</html>

```

## Imageprediction.html

```

<!DOCTYPE html>
<head>
<meta charset="utf-8">
<title>Nutrition Image Analysis</title>
<meta name="viewport" content="width=device-width, initial-scale=1"> <link
href="https://cdn.bootcss.com/bootstrap/4.0.0/css/bootstrap.min.css"
rel="stylesheet">
<script src="https://cdn.bootcss.com/popper.js/1.12.9/umd/popper.min.js"></script>
<script src="https://cdn.bootcss.com/jquery/3.3.1/jquery.min.js"></script>
<script
src="https://cdn.bootcss.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTWfSpd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
</head>
<style>
.home2{ background-image: url('static/css/2.png');height: 100%;background-repeat:
no-repeat;background-size: cover;height:545px ;width: 1280px;margin-top:
0px;padding-top: 0px;padding: 0px;margin: 0px;
}.upload-label{display: inline-block;border: none;border-radius: 10px;padding:
10px 25px;background: #48a9fda5;color: #fff;cursor: pointer;
}.upload-label:hover{background: #48a9fda5;border: none;color: #ffffff;}@keyframes
spin { 0% { transform: rotate(0deg); }100% { transform: rotate(360deg); }}
a{a:hover{background-color:#00ffe5;border-radius: 10px;padding: 5px 15px;
}</style>
<body>
    <nav class="navbar navbar-light" style="background-color: #48a9fda5;">
<span class="navbar-brand mb-0 h1" style="float: right; padding-left:
80px;">Nutrition Image Analysis</span>
    <div style="padding-right:100px ;">

```



```
        <a class="navbar-brand" style="float: right; " href="{{
url_for('image1')}}">Classify</a>
        <a class="navbar-brand" style="float: right; " href="{{
url_for('home')}}">Home</a>
    </div>
</nav>

<div class="home2">

    <div class="container">
        <center>
<div id="content">{% block content %}{% endblock %}</div></center>

    </div>
</body>
<footer>
<script src="{{ url_for('static', filename='js/main.js') }}"
type="text/javascript"></script> </footer>
</html>
```

## Main.js

```
$(document).ready(function () {  
  // Init  
  $('.image-section').hide();  
  $('.loader').hide();  
  $('#result').hide();  
  
  // Upload Preview function  
  readURL(input) {  
    if (input.files &&  
    input.files[0]) {  
      var reader =  
      new FileReader();  
      reader.onload  
      = function (e) {  
        $('#imagePreview').css('background-image', 'url(' +  
e.target.result + ')');  
        $('#imagePreview').hide();  
        $('#imagePreview').fadeIn(650);  
      }  
      reader.readAsDataURL(input.files[0]);  
    }  
  }  
  $("#imageUpload").change(function () {  
    $('.image-section').show();  
    $('#btn-predict').show();  
    $('#result').text('');  
    $('#result').hide();  
    readURL(this);  
  });  
  
  // Predict
```

```

    $('#btn-predict').click(function () {
        var form_data = new FormData($('#upload-file')[0]);
        // Show loading animation
        $(this).hide();
        $('.loader').show();

        // Make prediction by calling api /predict
        $.ajax({
            type: 'POST',
            url: '/predict',
            data: form_data,
            contentType: false,
            cache: false,
            processData: false,
            async: true,
            success: function (data) {
                // Get and display the result
                $('.loader').hide();
                $('#result').fadeIn(600);
                $('#result').html(data);
                console.log('Success!');
            },
        });
    });
});

```

### GITHUB link

<https://github.com/IBM-EPBL/IBM-Project-6489-1658830003>

### DEMO LINK:

[https://drive.google.com/file/d/1RRpN1YeIT3fv8W-lThnULq4l7xpiitz3/view?usp=share\\_link](https://drive.google.com/file/d/1RRpN1YeIT3fv8W-lThnULq4l7xpiitz3/view?usp=share_link)

<https://youtu.be/jUVk0sy4rpo>