AI POWERED NUTRITION ANALYSER FOR FITNESS

ENTHUSIASTS

Team ID	PNT2022TMID31776
Project Name	AI-powered Nutrition Analyzer forFitness Enthusiasts

1. INTRODUCTION

1.1 PROJECT OVERVIEW

- ❖ Food is a necessity for human life and has been addressed in numerous medical conventions .
- ❖ Modern dietary assessment and nutrition analysis tools give people additional possibilities to explore nutrition patterns, comprehend their daily eating habits, and keep up a balanced diet.
- ❖ Finding out a food's/fruit's nutritional value is done through nutritional analysis.
- ❖ Information about the chemical composition, processing, quality assurance, and contamination of food is a vital part of analytical chemistry.

1.2. PURPOSE

- ❖ The main aim of the project is to build a model which is used for classifying the fruit

Depends on the different characteristics like colour, shape, texture etc.

- ❖ Here the user can capture the images of different fruits and then the image will be sent the trained model.
- ❖ The model analyses the image and detect the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

- ❖ As the importance of consuming nutritious foods has grown, new dietary assessment and nutrition analysis tools provide additional chances for people to understand their daily eating habits, explore nutrition trends, and maintain a balanced diet.

2.2 REFERENCES

- **HEALTHIFY ME** : CEO - Tushar Vashisht Mathew Cherian and Sachin Shenoy published in 2012 (https://en.wikipedia.org/wiki/HealthifyMe)

- **MY PLATE CALORIE TRACKER** : CEO - Sean Moriarty Developer Website: Leaf Group Limited (https://www.healthnavigator.org.nz/apps/m/myplate-calorie-tracker-app/)

- **ALPHA COACH EVOLVE** :   CEO - Ketan Mavinkurve published on 7th October 2022 (https://www.alphacoach.app/evolve)

- **FOODVISOR-NUTRITION AND DIET** : CEO - Charles Boes published on 2nd oct-2018 (https://www.foodvisor.io/en/)

- **MY FITNESSPAL** : CEO - Tricia Han published on 2005 (https://en.wikipedia.org/wiki/MyFitnessPal)

- **CALORIE COUNTER BY FATSECRET :** CEO - Lenny Moses Launced on 2011 (https://play.google.com/store/apps/details?id=com.fatsecret.android&hl=en_IN&gl=US)

- **NOOM** : CEO - Artem Petakov and Saeju Jeong founded in 2008 (https://www.noom.com/)

2.3 PROBLEM STATEMENT DEFINITION

- ❖ Humans find it challenging to eat healthily because of their hectic lifestyles.
- ❖ Sometimes they are unable to determine if the fruits are developed enough to eat or not, and in those moments of need, they want to consume the healthiest fruit possible.

3. IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

3.2 IDEATION AND BRAIN STORMING

3.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	A regular person must use cutting-edge AI- based analysing software to identify fruits and vegetables based on colour, texture, form, and other characteristics. At the time of identification, the user must also be aware of the nutritional content of that specific edible.
2.	Idea / Solution description	**Main Solution**: ● Clear and proper identification of the given input data. ● Provide nutritional facts based on the obtained data. ● Fitness analysis and maintenance as per the user's body conditions **Additional benefits**: ● Analysis of daily dietary requirements ● Daily tracking of dietary consumption thoroughly.
3.	Novelty / Uniqueness	● The availability of fitness plans with add on bonuses ● Suggestion of home remedies and simple solutions for basic problems. ● An individualized food plan based on health condition and deficiency. ● Allowing for diet flexibility helps promote a healthy and effective eating pattern
4.	Social Impact / Customer Satisfaction	● Healthy lifestyle development ● Constant calorie management monitoring results in a fitness mindset.

5.	Business Model (Revenue Model)	● Consultation with nearest trainers and nutritionist for personalized plans.
		● Adopt a specialized diet plan under the direction of an expert. ● Advertise and offer nutritional supplements and fitness gear. ● Promotion for fitness centers and hospitals.
6.	Scalability of the Solution	● Improving accuracy by expanding the data collection using user input data ● Storage requirements of a specific food. ● User friendly UI for everyone to use and get benefit from it.

3.4 PROBLEM SOLUTION FIT

4. REQUIREMETN ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	**Registration through form** **Registration through Gmail** **Registration through LinkedIn**
FR-2	User Confirmation	**Confirmation via Email** **Confirmation via OTP**
FR-3	Give permission to enter dashboard	**Having your details** **Healthy tips** **Common food review**
FR-4	Diet plans	**Mediterranean diet** **Low-carbohydrates diet** **High protein diet** **Diabetic diet**
FR-5	Features of subscription	**Individual guidance** **Individual food shedule** **Chat with mentor**
FR-6	Notification	**Notify a healthy quotes daily** **Notify to drink water** **Notify right time for right food**

4.2 NON-FUNCTIONAL REQUIREMENTS

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	**As usability is a prerequisite for success of health and wellness through mobile app make use by clients**
NFR-2	**Security**	**By using login page, verify through email and phone number by sending OTP**
NFR-3	**Reliability**	**Awareness and emphasis on the importance of sustaining personal health care and manage their health**

		pervasively
NFR-4	**Performance**	**Information was saved clearly and having a proper icons**
NFR-5	**Availability**	**Having proper internet this application will work any time**
NFR-6	**Scalability**	**If the client wants a seprate chart or modify the food chart they will proceed to deliver the opinion**

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS

DFD-1(Login):
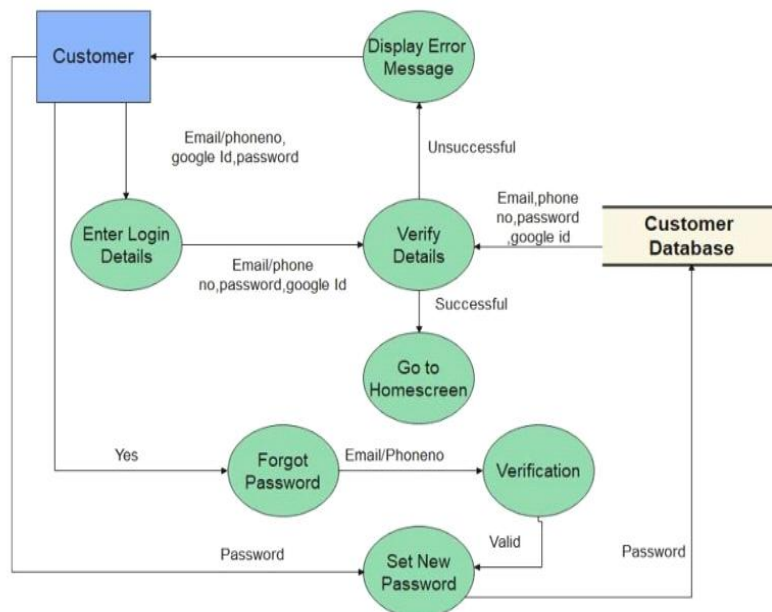
DFD-1(Registration):
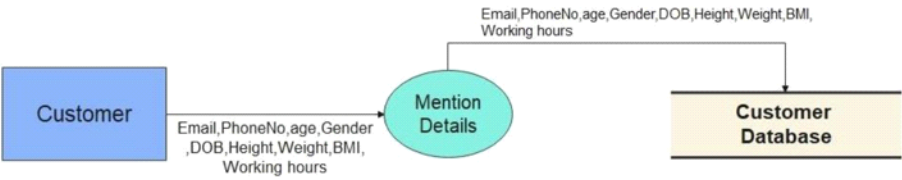
DFD-1(Payment):
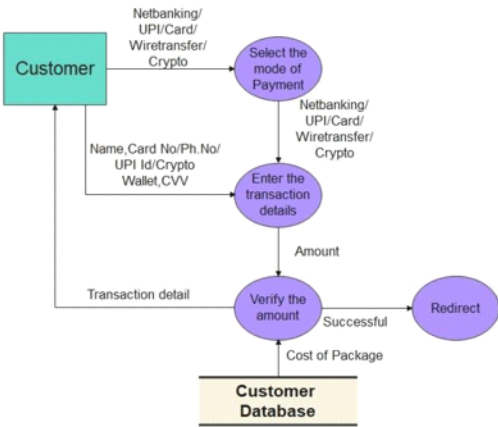
DFD-0:
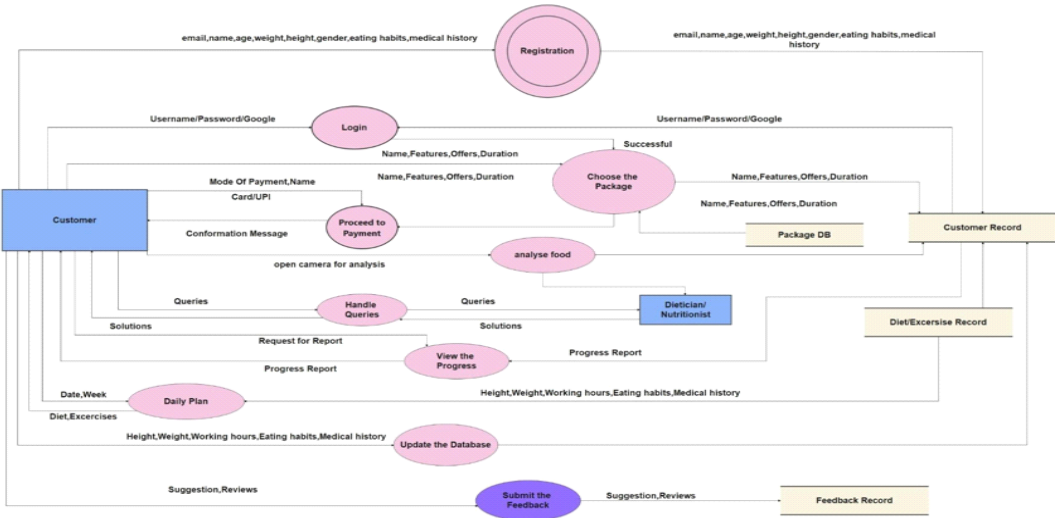
5.2 SOLUTION AND TECHNICAL ARCHITECTURE

SOLUTION ARCHITECTURE:
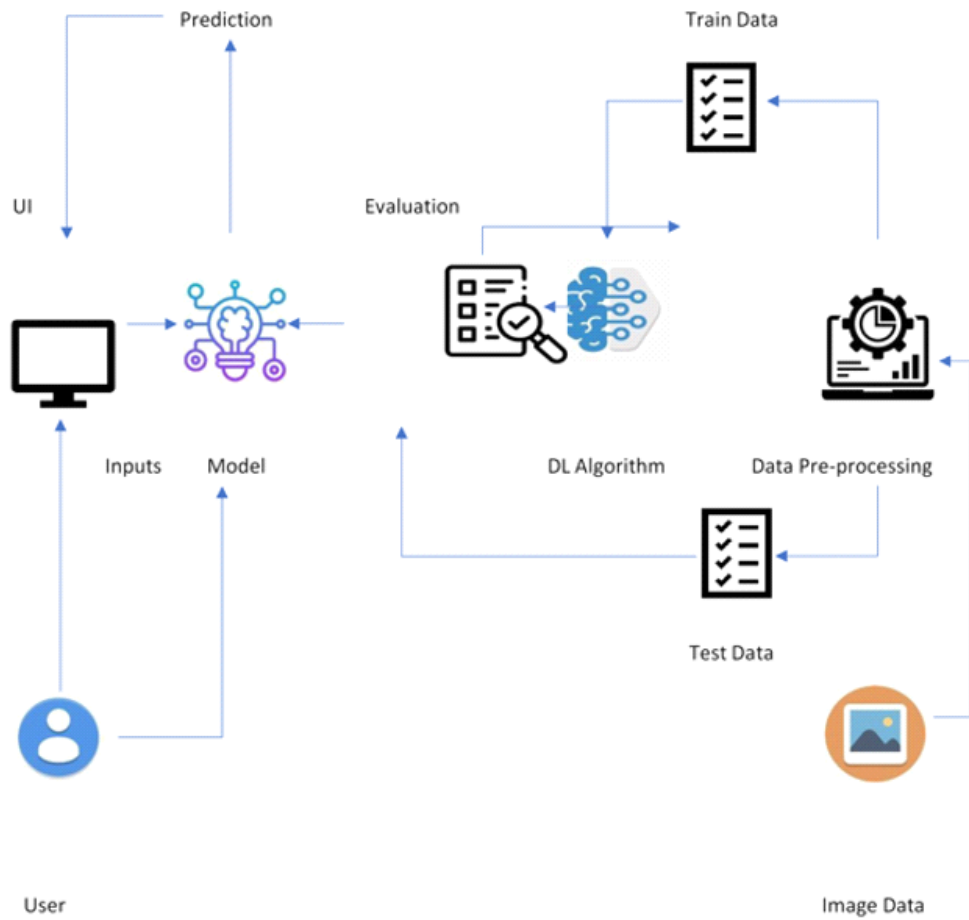
TECHNICAL ARCHITECTURE :
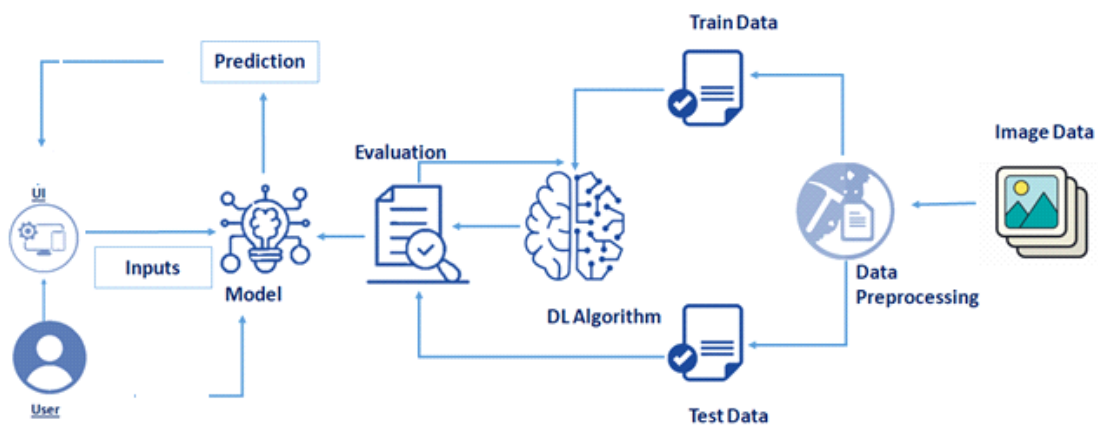
5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	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 Google	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Microsoft	I can access the Dashboard with Microsoft.	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can login the Application by entering password	High	Sprint-1
	Main Interface	USN-6	As a user I can view my calorie intake by clicking photo of the food I eat	Access the proper information about the nutrition and the calorie intake	High	Sprint-2
	Package DB, Dashboard	USN-7	As a user I can choose variety of packages based on my requirement	Selecting an appropriate package	Medium	Sprint-2
Customer Care Executive	Feedbacks DB , Tollfree number, chat bot	USN-8	As a customer care executive, I collect feedbacks from customers	Maintaining proper environment for the customers	High	Sprint-2
Dietitian	Customer Record	USN-9	As a dietitian I provide daily plans for the betterment of the user	Positive results from user	High	Sprint-2
Administrator	Dashboard	USN-10	As an administrator I take care of all the operations which takes place in the app	Zero issues from the user	High	Sprint-2

6. PROJECT PLANNING AND SHEDULING

6.2 SPRINT DELIVERY SHEDULE

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	31 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	07 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	15	14 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	25	19 Nov 2022

VELOCITY CHART

Chart legend: ■ Commitment   ■ Delivered

www.agile-scrum.be
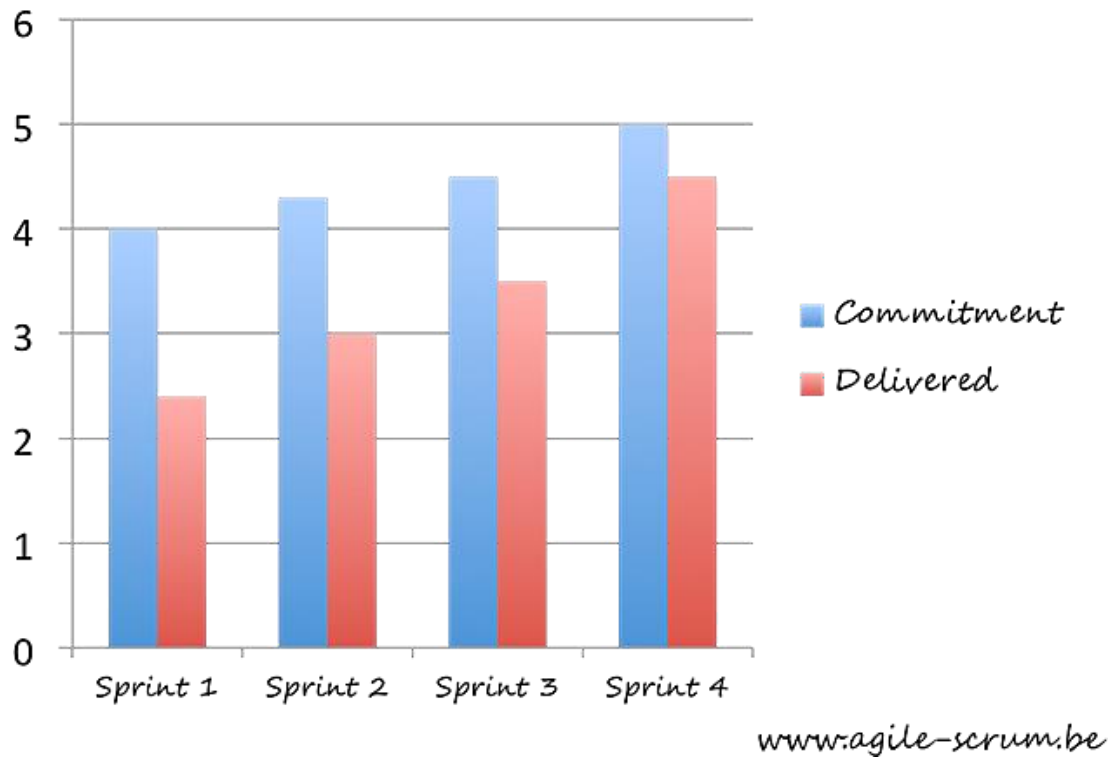
7. CODING AND SOLUTIONING

7.1 FEATURE 1

If you are using anaconda navigator, follow the below steps to download the required packages:

1) Open anaconda prompt as administrator
2) Type "pip install tensorflow==1.14.0" and click enter.
3) Type "pip install keras==2.2.4" and click enter
4) Type "pip install open cv-python and click enter
5) Type "pip install flask" and click enter

Anaconda Navigator (screenshot)

File Help

ANACONDA.NAVIGATOR

Upgrade Now   Connect ▾

🏠 Home
📦 Environments
📖 Learning
👥 Community

Applications on base (root) ▾   Channels

CMD.exe Prompt
0.1.1
Run a cmd.exe terminal with your current environment from Navigator activated
Launch

Datalore
Online Data Analysis Tool with smart coding assistance by JetBrains. Edit and run your Python notebooks in the cloud and share them with your team.
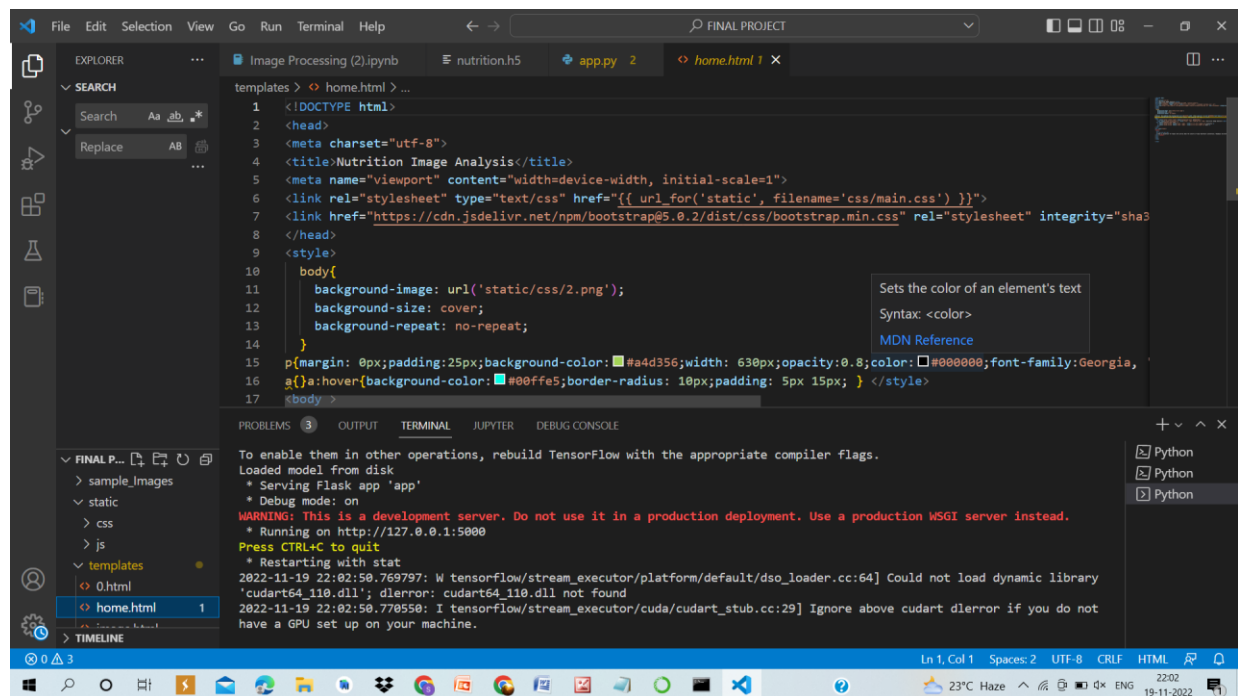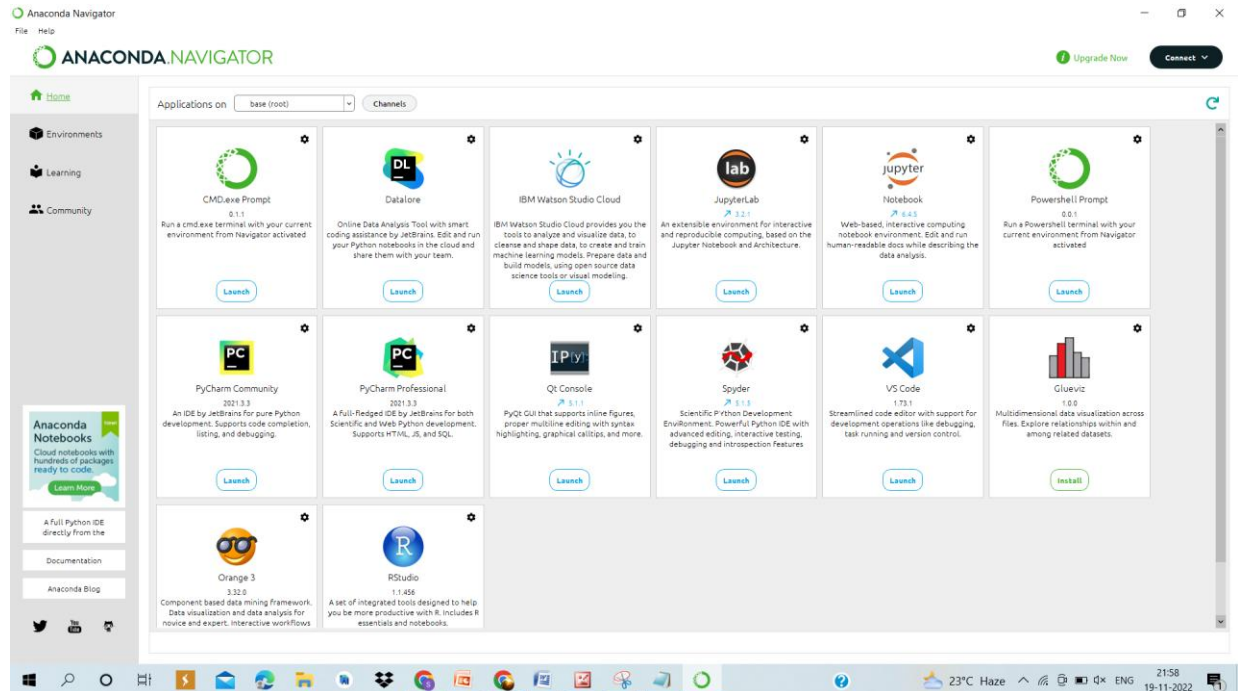Launch

IBM Watson Studio Cloud
IBM Watson Studio Cloud provides you the tools to analyze and visualize data, to cleanse and shape data, to create and train machine learning models. Prepare data and build models, using open source data science tools or visual modeling.
Launch

JupyterLab
3.2.1
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.
Launch

Notebook
6.4.5
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.
Launch

Powershell Prompt
0.0.1
Run a Powershell terminal with your current environment from Navigator activated
Launch

PyCharm Community
2021.3.3
An IDE by JetBrains for pure Python development. Supports code completion, listing, and debugging.
Launch

PyCharm Professional
2021.3.3
A full-fledged IDE by JetBrains for both Scientific and Web Python development. Supports HTML, JS, and SQL.
Launch

Qt Console
PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.
Launch

Spyder
Scientific Python Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features
Launch

VS Code
1.73.1
Streamlined code editor with support for development operations like debugging, task running and version control.
Launch

Glueviz
1.0.0
Multidimensional data visualization across files. Explore relationships within and among related datasets.
Install

Orange 3
3.32.0
Component based data mining framework. Data visualization and data analysis for novice and expert. Interactive workflows
Launch

RStudio
1.1.456
A set of integrated tools designed to help you be more productive with R. Includes R essentials and notebooks.
Launch

Anaconda Notebooks
Cloud notebooks with hundreds of packages ready to code.
Learn More

A full Python IDE directly from the

Documentation

Anaconda Blog

23°C Haze   ENG 21:58 19-11-2022

VS Code (screenshot)

File Edit Selection View Go Run Terminal Help   FINAL PROJECT

EXPLORER

SEARCH
Search Aa ab .*
Replace AB

Image Processing (2).ipynb   nutrition.h5   app.py 2   home.html 1 ×

templates > <> home.html > ...

```html
1   <!DOCTYPE html>
2   <head>
3   <meta charset="utf-8">
4   <title>Nutrition Image Analysis</title>
5   <meta name="viewport" content="width=device-width, initial-scale=1">
6   <link rel="stylesheet" type="text/css" href="{{ url_for('static', filename='css/main.css') }}">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha3
8   </head>
9   <style>
10    body{
11      background-image: url('static/css/2.png');
12      background-size: cover;
13      background-repeat: no-repeat;
14    }
15   p{margin: 0px;padding:25px;background-color:■#a4d356;width: 630px;opacity:0.8;color:□#000000;font-family:Georgia,
16   a{}a:hover{background-color:■#00ffe5;border-radius: 10px;padding: 5px 15px; } </style>
17   <body >
```

Sets the color of an element's text
Syntax: <color>
MDN Reference

PROBLEMS 3   OUTPUT   TERMINAL   JUPYTER   DEBUG CONSOLE

```
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
Loaded model from disk
 * Serving Flask app 'app'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
 * Running on http://127.0.0.1:5000
Press CTRL+C to quit
 * Restarting with stat
2022-11-19 22:02:50.769797: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library
'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-11-19 22:02:50.770550: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not
have a GPU set up on your machine.
```

FINAL P...
> sample_Images
∨ static
  > css
  > js
∨ templates
  <> 0.html
  <> home.html 1
> TIMELINE

⊗ 0 ⚠ 3   Ln 1, Col 1   Spaces: 2   UTF-8   CRLF   HTML

Python
Python
Python

23°C Haze   ENG 22:02 19-11-2022

Data Collection

Download the dataset here

```python
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

```python
cd/content/drive/MyDrive/Colab Notebooks
```

```
/content/drive/MyDrive/Colab Notebooks
```

```python
# Unzipping the dataset
!unzip 'Dataset.zip'
```

Image Preprocessing

```python
from keras.preprocessing.image import ImageDataGenerator
```

Image Data Augmentation

```python
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

```python
x_train = train_datagen.flow_from_directory(
    r'/content/drive/MyDrive/Colab Notebooks/Dataset/TRAIN_SET',
    target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')
x_test = test_datagen.flow_from_directory(
    r'/content/drive/MyDrive/Colab Notebooks/Dataset/TEST_SET',
    target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')
```

3. Adding CNN Layers

```python
classifier = Sequential()
classifier.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))
classifier.add(MaxPooling2D(pool_size=(2, 2)))
classifier.add(Conv2D(32, (3, 3), activation='relu'))
classifier.add(MaxPooling2D(pool_size=(2, 2)))
classifier.add(Flatten())
```

4. Adding Dense Layers

```python
classifier.add(Dense(units=128, activation='relu'))
classifier.add(Dense(units=5, activation='softmax'))
```

```python
classifier.summary()
```

```
Model: "sequential_1"
_____
Layer (type)                 Output Shape              Param #
===============================================================
conv2d (Conv2D)              (None, 62, 62, 32)        896
```

5. Configure The Learning Process

```python
classifier.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])
```

6. Train The Model
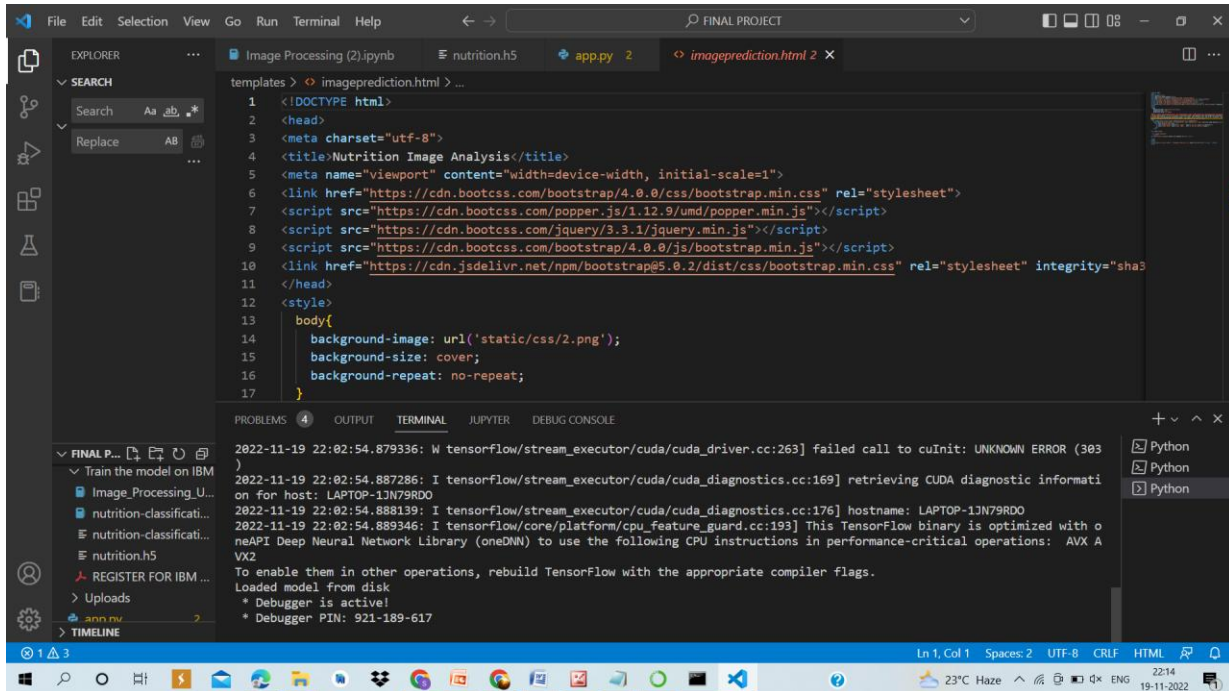
```python
classifier.fit_generator(generator=x_train,steps_per_epoch = len(x_train),epochs=20, validation_data=x_test,validation_steps = len(x_test))
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:2: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Pl

Epoch 1/20
494/824 [==================>............] - ETA: 6:52 - loss: 0.7194 - accuracy: 0.7174
```

7. Saving The Model
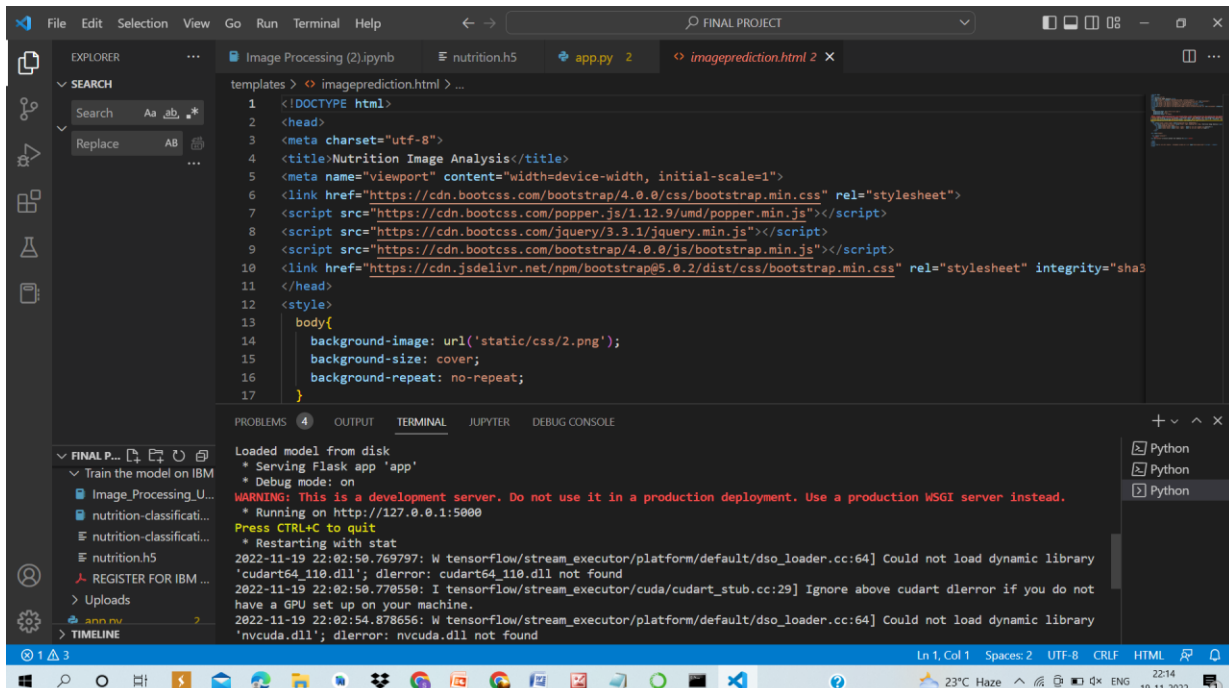
```python
classifier.save('nutrition.h5')
```

7.2 FEATURE 2

8. TESTING

8.1 TEST CASES

8.2 USER ACCEPTANCE TESTING

We are performing White Box Testing for select the package module.

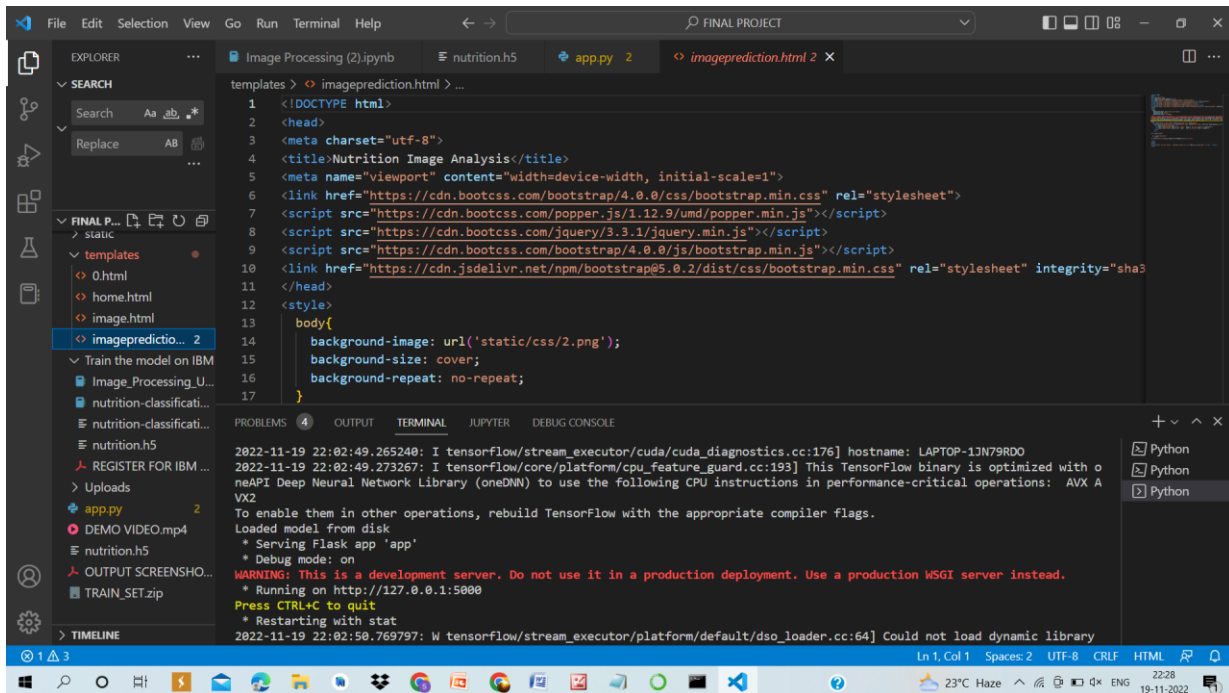➢ **PSEUDOCODE FOR SELECT THE PACKAGE MODULE**
1) Select the package and procedure begins.
2) READ the package name, features, offers and duration from the packages data base
3) Display the package name, features, offers and duration
4) Get the package name features, offers, and duration
5) Store the package selected to the customers database
6) Proceed to payment screen and other module
7) WHILE select package is NULL
8) END DO…WHILE
9) Procedure Ends

9. RESULTS

The AI-POWERED NUTRITION ANALYZER FOR FITNESS ENTHUSIASTS is runned successfully.

10. ADVANTAGES AND DIS ADVANTAGES

ADVANTAGES

- **Significant level of accuracy in detecting details.**

- **Provides a user-friendly interface**

DISADVANTAGES

- **Couldn't keep track of the calorie intake into the body.**

- **Limited fruit classification.**

11. CONCLUSION

Engaging in regular physical activity may produce improvements in an individual physical health, cognitive performance, and psychological well-being. Physical benefits include, but are not limited to, reduced risk for diseases, and improvements in physical functioning, fitness, and overall quality of life.

The purpose of a fitness app is to provide the user with instructions and examples of one or more types of exercise physical activity and nutritional programs.

12. FUTURE SCOPE

➢ Offers payment convenience in personal training subscriptions.
➢ Useful articles
➢ Video instructions
➢ Diet plans
➢ Individual Progress Tracking
➢ Live video From Training sessions

13. APPENDIX

0.HTML

```html
<!DOCTYPE html>
<head>
<meta charset="utf-8">
<title>Nutrition Image Analysis</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
</head>
<div class="results">
<p style="padding-top: 10px; color:#0000ff;text-decoration: none;"><h5 style="color:blue;text-decoration:
none;">Food Classified is: <h5><b><h5 style="color:red;text-decoration: none;"><u>{{showcase1}}<h5><br><h5
style="color:red;text-decoration: none;"><u>{{showcase}}<h5></p>
</div>
</html>
```

HOME.HTML

```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>
  body{
    background-image: url('static/css/2.png');
    background-size: cover;
    background-repeat: no-repeat;
  }
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>
```

IMAGE.HTML

```html
{% extends "imageprediction.html" %} {% block content %}
<div style="float:left; padding-top: 5px;">
<h5>Upload image to classify</h5>
<div>
    <form id="upload-file" method="post" enctype="multipart/form-data">
        <label for="imageUpload" class="upload-label">Choose</label>
        <input type="file" name="file" id="imageUpload" accept=".png, .jpg, .jpeg" style=" display: none;">
    </form>
    <div><center>
```

```
        <div class="image-section" style="display:none;">
            <div class="img-preview" style="width: 256px;height: 256px;padding-left:0px; ">
                <div id="imagePreview" style=" width: 100%;height: 100%;background-size: 256
256px;background-repeat: no-repeat;"></div>
        </center>
    </div>
    <center><div><button type="button" class="upload-label "
id="btn-predict">Classify</button></center></div></div>
    <div class="loader" style="  border: 8px solid #f3f3f3;border-top: 8px solid #48a9fda5;;border-radius:
50%;width: 50px;height: 50px;animation: spin 1s linear infinite;"></div>
    <h5 id="result" style="text-decoration: none;"><span><p ><h5>Food Classified is :
<h5><b><u>{{showcase}}{{showcase1}}</p> </span></h5>
</div>
```

IMAGE PREDICTION.HTML

```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>
  body{
    background-image: url('static/css/2.png');
    background-size: cover;
    background-repeat: no-repeat;
  }
.home2{  height: 100%;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>
```

APP.PY

```python
# -*- coding: utf-8 -*-
"""
Created on Sun Nov  6 11:55:47 2022

@author: HP
"""
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)
```
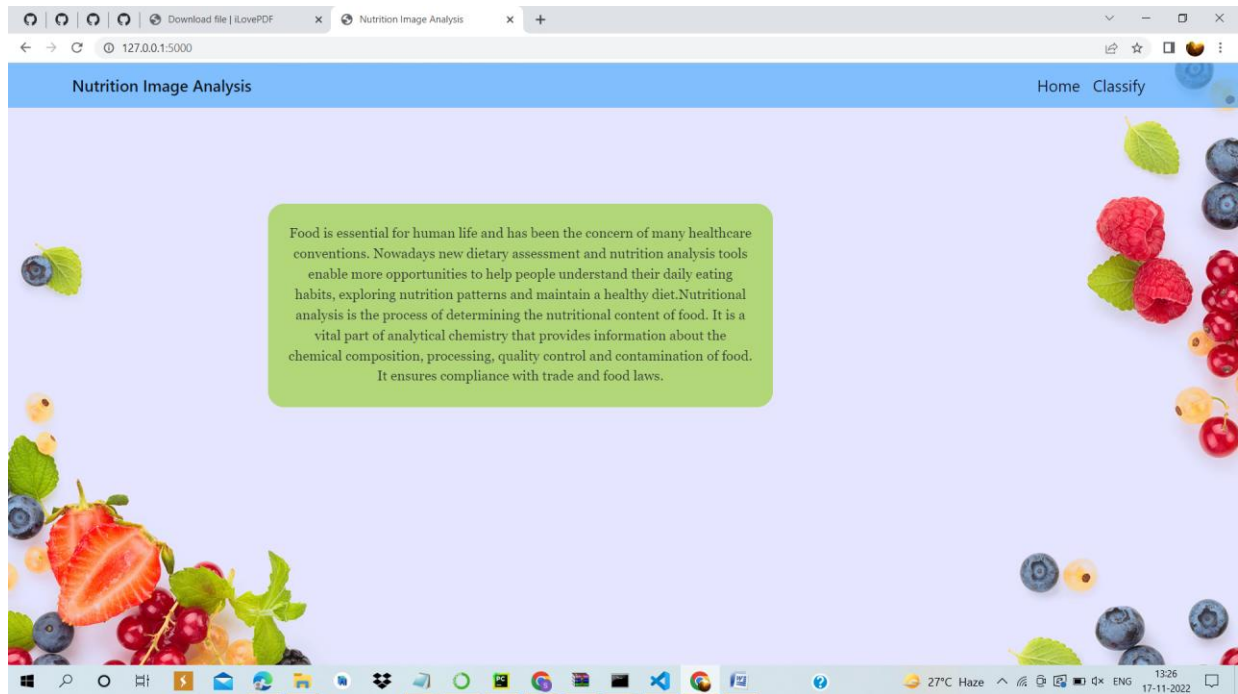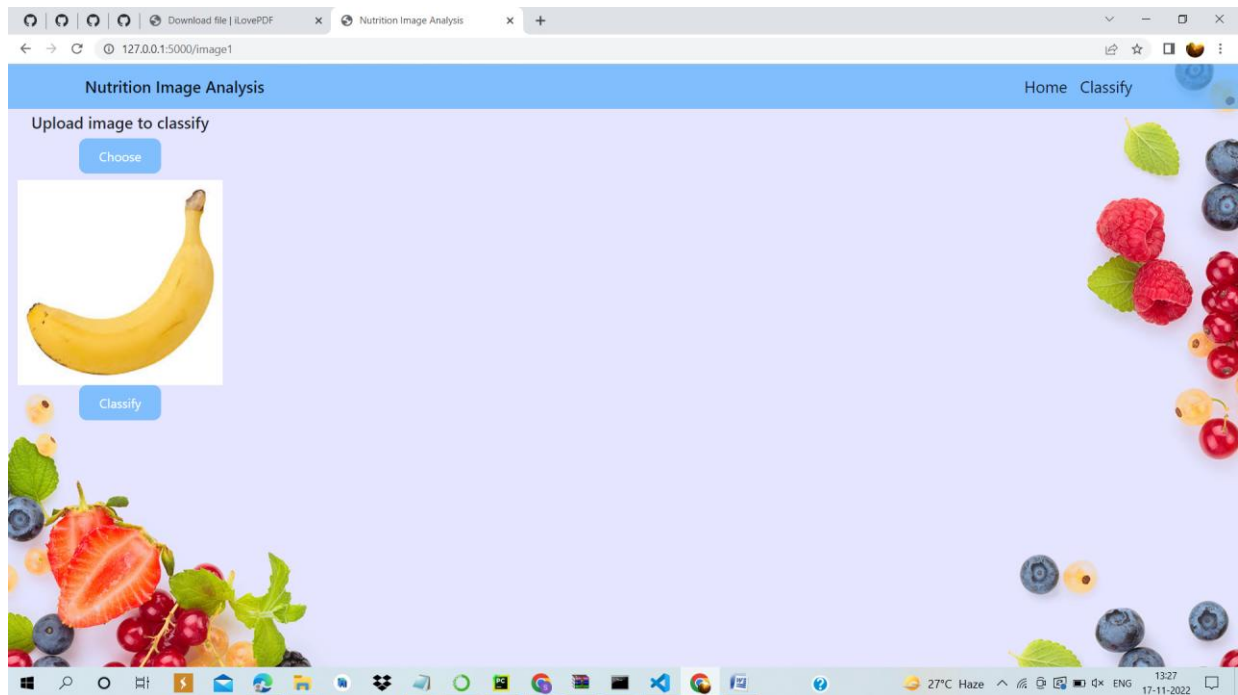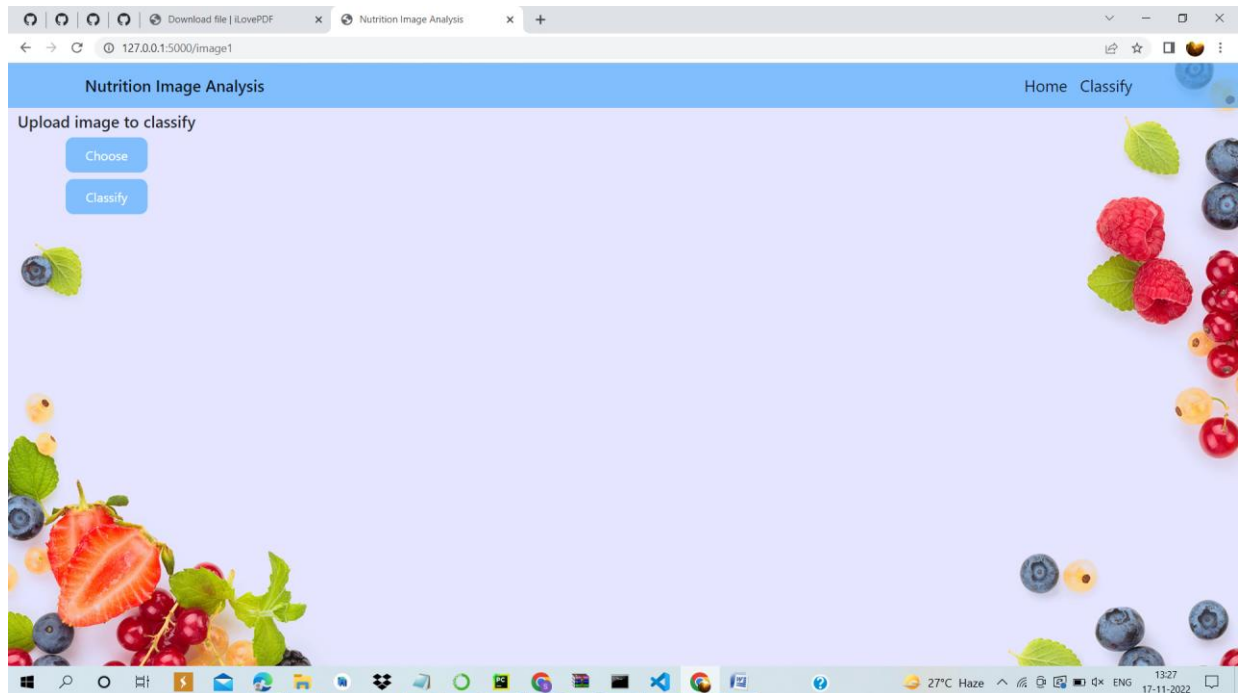
RUN APPLICATION

GITHUB AND PROJECT DEMO LINK

https://drive.google.com/file/d/1nvamrTJ7pEFNkrjpk6mNTE3Yyg2scGiI/view?usp=share_link