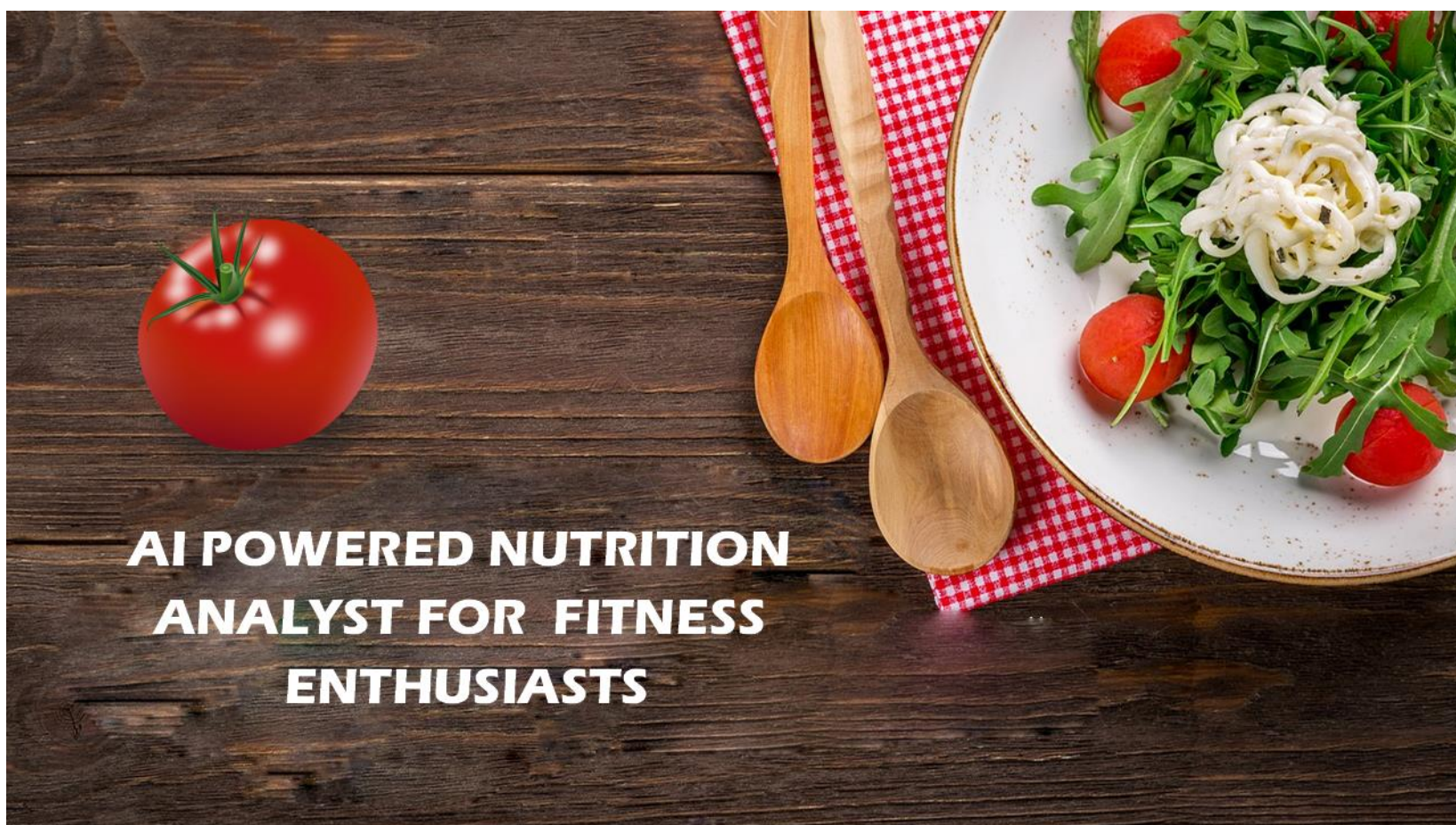


NAALAIYA THIRAN PROJECT

TEAM MEMBERS

- DHINESH(TEAM LEADER)
- BRITHISH (TEAM MEMBER)
- KRISHNA KUMAR (TEAM MEMBER)
- THIRUPATHI REDDY(TEAM MEMBER)



19/11/2022

PROJECT REPORT

| | |
|--------------|--|
| DATE | 19 November 2022 |
| TEAM ID | PNT2022TMID37024 |
| PROJECT NAME | AI-powered Nutrition Analyst for Fitness Enthusiasts |

1.INTRODUCTION :

Lack of exercise plus poor eating habits remain significant causes for benign ailments such as heart disorder, insulin resistance, and fatness. These sorts of problems are responsible for seventy percent global mortality and impose a significant monetary load. To decrease such losses, gainful and workable standards of living are sorely required. Comprehensive way of living Programmes for comprehensive way of living have developed gradually in perfect sync with new virtual and advanced tools. Ai technology and related analytical modelling are now the major breakthrough in widening the terrain of medical services and initiatives in current history.

Individuals in present era consume unhealthy foods and suffer from serious illnesses of one's incautious conduct. Such ailments seem to be treatable; however the patient's fitness declines. As a result, everyone should follow a healthy diet for their own good. This practise perfectly fulfils the criteria. The proposed methodology presents the client with a necessary nutrition plan by taking into account numerous parameters. The method computes the patient's Body fat percentage based on his or her age and build. It gives a person an appropriate nutrition program based on age, sex, tallness, muscle mass, and illness. Likewise, this strategy generates crash diet based upon the data provided by the client. It includes an authentication server in which the subscriber must sign up before using the plug-in. A risk of service interruption will be a drawback as the system entirely depends on the internet connectivity. The framework provides better accuracy because it recognises the patient's information and processes it based upon certain formulations by now defined to the implementation, mostly on core principle of which a proposed action is created and confirms with the client if the nutrition scheme is acceptable. In case the food chart is not acceptable by the client then framework will propose a different regimen.

Project overview

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 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.).

1.2.Purpose

The goal of fitness tracking apps is to collect data about the user's activities. These include the number of steps taken, stairs climbed, distance ran, and other fitness metrics. To make it easy for users to monitor progress, create a fitness tracking app that will also provide calendars and charts

2. LITERATURE SURVE

Existing Problem

Sharing and collaboration are commonplace in today's social media-driven world. But the lack of regulation means it's all too easy for people to share information on fitness, health – and pretty much anything – without any factual backing. Combine this with standard challenges like keeping clients motivated, and there are problems in the fitness industry that can affect your business.

5 Main problems are:

Misinformation , One-Way Approach , Information Overload , Elitist Attitudes ,Lack of Member Support

References

- <https://www.healthifyme.com/in/>
- [Don't Lose Your Mind, Lose Your Weight](#)

The country's highest-selling diet book, has revolutionized the way Indians think about food and their eating habits

Author: Diwekar Rujuta

- R.S. Pressman, Software Engineering: A Practitioner's Approach, McGraw-Hill, Ed 7, 2010
- P. Jalote, An Integrated Approach to Software Engineering, Narosa Publishing House, Ed 3, 2011
- <https://www.engpaper.com/cse/artificial-intelligence-dietician.html>

<https://www.smartics.eu/confluence/display/PDAC1/How+to+document+a+Software+Development+Project>

- https://en.wikipedia.org/wiki/Healthy_diet#:~:text=Eat%20healthy%20protein%3A%20good%20choices,because%20sweet%20drinks%20cause%20cravings.

Problem Statement Definition

- **Misinformation:**

a lot of the inadequate information that's spread over the internet and social media is evident to fitness professionals and personal trainers, the average person doesn't have the same level of knowledge. Often, this means that they're happy to jump on the latest fitness bandwagon – whatever it may be.

- **One-Way Approach:**

Social media is an excellent resource for finding like-minded people with similar interests. This is brilliant because no matter what your interests, you can find a community of people who support you and share your passion.

- **Information Overload:**

You've seen the clients who keep changing their routine every few weeks. And you know the ones that aren't doing it to push through a plateau.

- **Lack of Member Support:**

The reason they leave is that they're unfulfilled. The idea hasn't lived up to expectations. Perhaps they lost motivation or lost sight of their goals. Maybe they were putting in the effort but didn't see the results they wanted.

3. Ideation & Proposed Solution

Empathy Map Canvas

In this Empathy Map we describe about

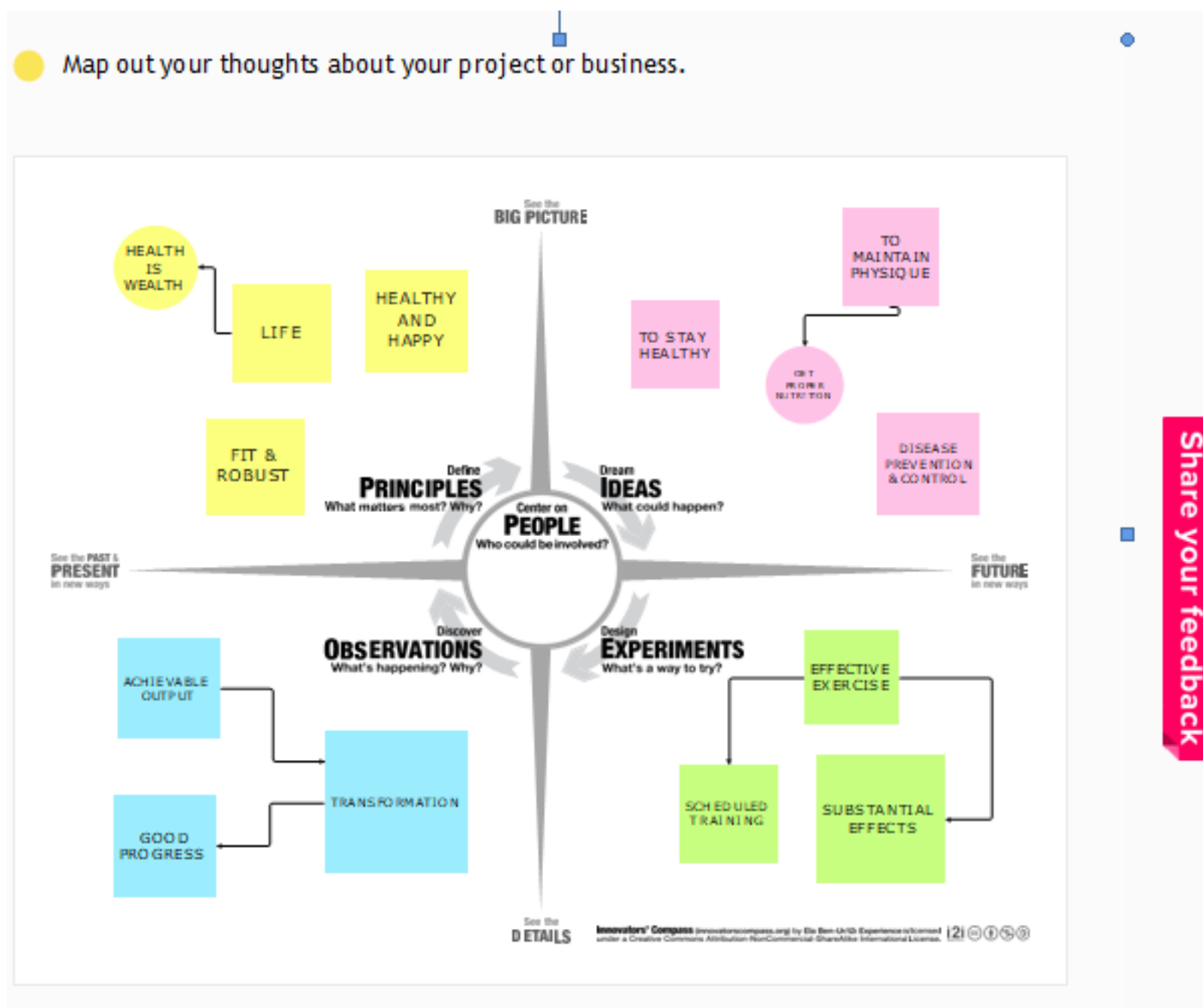
What do they,

- Think and feel
- Hear
- See
- Say and Do

Pain and Gain

Innovators' Compass

Map out thoughts as principles, ideas, experiments, and observations

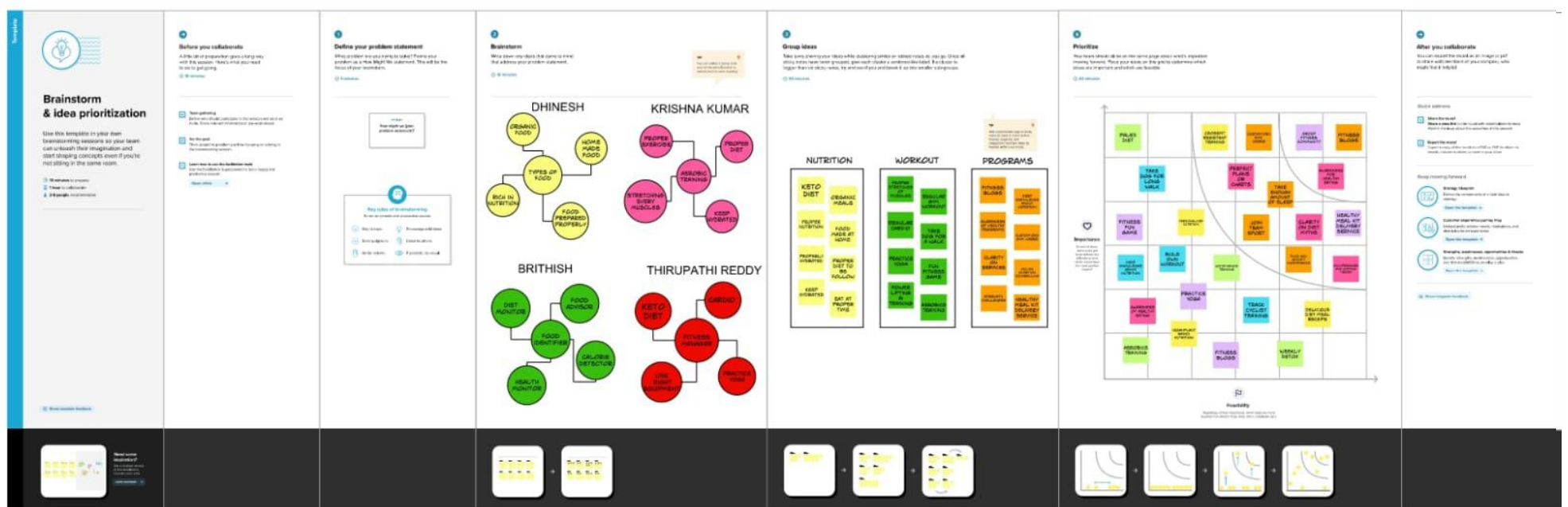


Ideation and Brainstorming

In this phase we discussed about

Where to Start

- Time Management



Giving a individual Food/health Schedule According to their body conditions

- **Social impact/Customer Satisfaction**

Low expenditure ,easy to follow without affecting their personal time.

- **Business model**

Free platform for all users. For specific guidance users want to pay

Scalability of the Solution


Notifying motivational quote's to lead a healthy routine


Problem Solution Fit

Problem-Solution fit canvas 2.0

Purpose / Vision

| | | | | | |
|------------------------|---|---|--|---------------------------|--|
| Define CS, fit into CC | <div><div>1. CUSTOMER SEGMENT(S)</div><div>Who is your customer? i.e. working parents of 0-5 y.o. kids</div><div>People who wants to maintain their fitness by managing their diet.</div></div> | <div><div>6. CUSTOMER CONSTRAINTS</div><div>What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.</div><div>Hotels, Fast Food shops produce nice aromas in their foods that aroma attract them to loose their control and make them to eat.</div></div> | <div><div>5. AVAILABLE SOLUTIONS</div><div>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking</div><div>->Consult Nutritioner for proper diet control ->Avoid Fast Foods/Junk Foods. ->To eat proper food on time which is rich in nutritions</div></div> | Explore AS, differentiate | |
| | <div><div>2. JOBS-TO-BE-DONE / PROBLEMS</div><div>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</div><div>Fitness Maintainer, Nutrition Specialist, Diet Controller, Gym Coach, Personel Trainer these are the jobs succesfully done in this field.</div></div> | <div><div>9. PROBLEM ROOT CAUSE</div><div>What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.</div><div>->Eating unhealthy food. ->Eating food at wrong time. ->Not drinking enough water. ->Drinking water right after a workout/when the heart pumps fast</div></div> | <div><div>7. BEHAVIOUR</div><div>What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)</div><div>Detailed Plans, Scheduled Training, Proper Diet, Felicitous Stretching of Muscles, Fitness Fun Games, Strength Challenges these were the things which drive to maintain their fitness.</div></div> | | Focus on J&P, tap into BE, understand RC |
| | <div><div>3. TRIGGERS</div><div>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</div><div>Making their body Fit and Healthy, Attracting the people by exposing their body.</div></div> <div><div>4. EMOTIONS: BEFORE / AFTER</div><div>How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.</div><div>Initially they think about their decision was wrong and they were ambitious about it.</div></div> | <div><div>10. YOUR SOLUTION</div><div>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</div><div>->Make proper diet plan seperately for everyone. ->Diet plans were formed by the things available easily. ->Insists to eat organic food and do simple and effective workouts</div></div> | <div><div>8. CHANNELS of BEHAVIOUR</div><div>8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7</div><div>Follow diet from Nutritioner, Consult doctor for health issues.</div><div>8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</div><div>Follow the plans constantly, Take nutritious food, Keep Hydrated.</div></div> | | |

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Created by Daria Nepriakhina / Amaltama.com



4 Requirement Analysis

Functional Requirement

THE FOLLOWING ARE THE FUNCTIONAL REQUIREMENTS OF THE PROPOSED SOLUTION.

| FR No. | FUNCTIONAL REQUIREMENT (EPIC) | SUB REQUIREMENT (STORY / SUB-TASK) |
|--------|-------------------------------|--|
| FR-1 | USER REGISTRATION | REGISTRATION THROUGH GMAIL. REGISTRATION THROUGH PHONE NUMBER. |
| FR-2 | USER CONFIRMATION | CONFIRMATION VIA EMAIL. CONFIRMATION VIA OTP. |
| FR-3 | USER LOGIN | LOGIN THROUGH PHONE NUMBER. LOGIN THROUGH EMAIL. |
| FR-4 | CHOOSE PACKAGE | SELECTION OF DESIRED PACKAGE. |
| FR-5 | GENERATE THE DAILY PLAN | DAILY PLANS WILL BE GENERATED ACCORDINGLY BY TRAINER SEPARATELY. |
| FR-6 | MANAGE PROGRESS REPORT | GATHERING INFORMATION FROM DATABASEAND GENERATING DAILY REPORT. |
| FR-7 | QUERY | THE TRAINER CAN CHANGE PLANS ACCORDING TO THE USER NEEDS. |

Non Functional Requirement

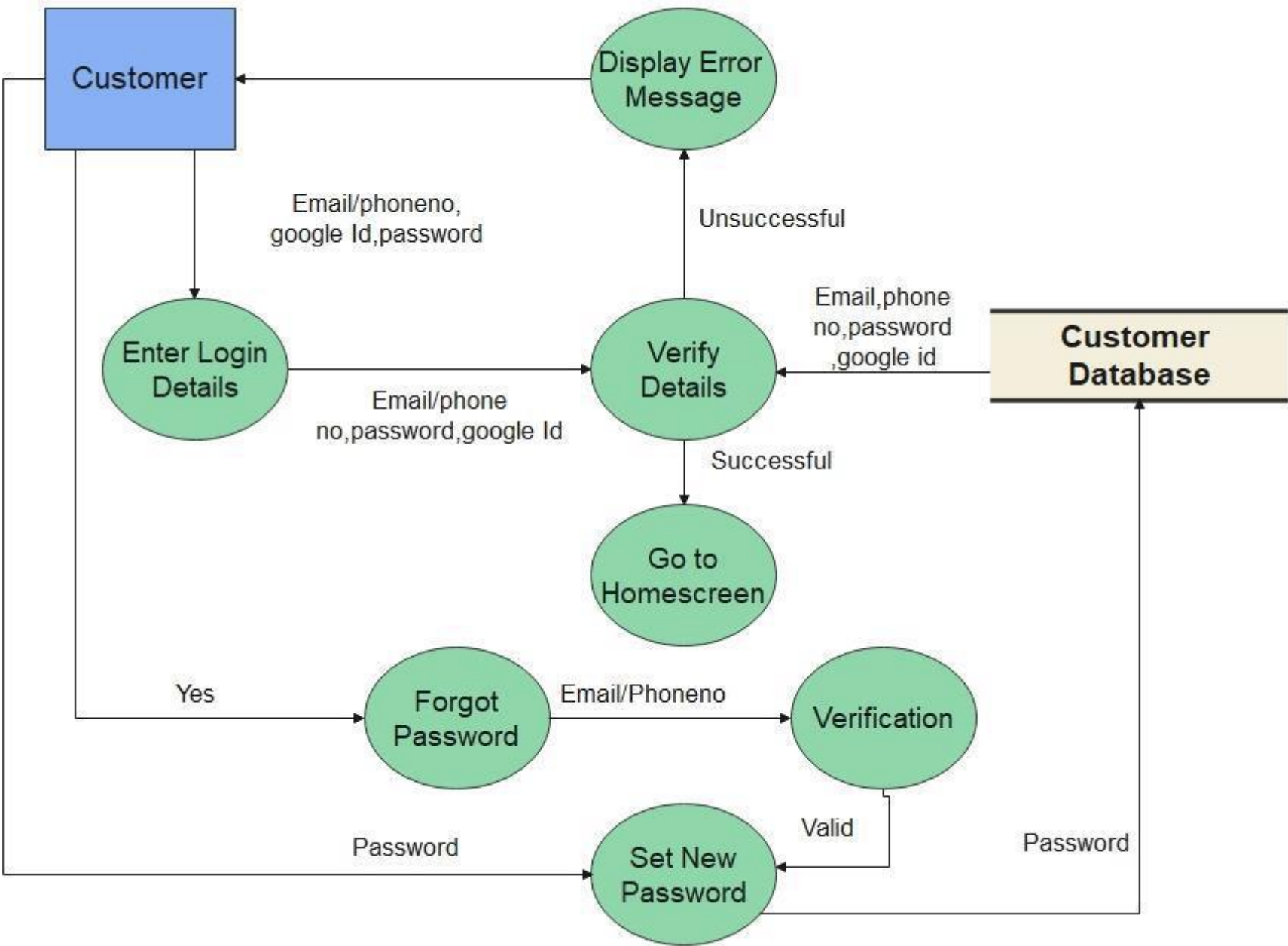
THE FOLLOWING ARE THE NON-FUNCTIONAL REQUIREMENTS OF THE PROPOSED SOLUTION

| FR No. | FR No. | DESCRIPTION |
|--------|--------|--|
| NFR-1 | FR No. | EASY TO USE, INTERACTIVE USER INTERFACE. |
| NFR-2 | NFR-1 | USER CAN ACCESS ONLY THEIR PERSONAL INFORMATION. |
| NFR-3 | NFR-2 | THE AVERAGE TIME OF FAILURE SHALL BE 3-4 DAYS. |
| NFR-4 | NFR-3 | THE RESULTS HAVE TO BE SHOWN WITHIN 24-48 HRS. |
| NFR-5 | NFR-4 | THE DIETICIAN SHALL BE AVAILABLE 24/7 TO USERS. |
| NFR-6 | NFR-5 | SUPPORTS VARIOUS HEALTHY FOOD. |

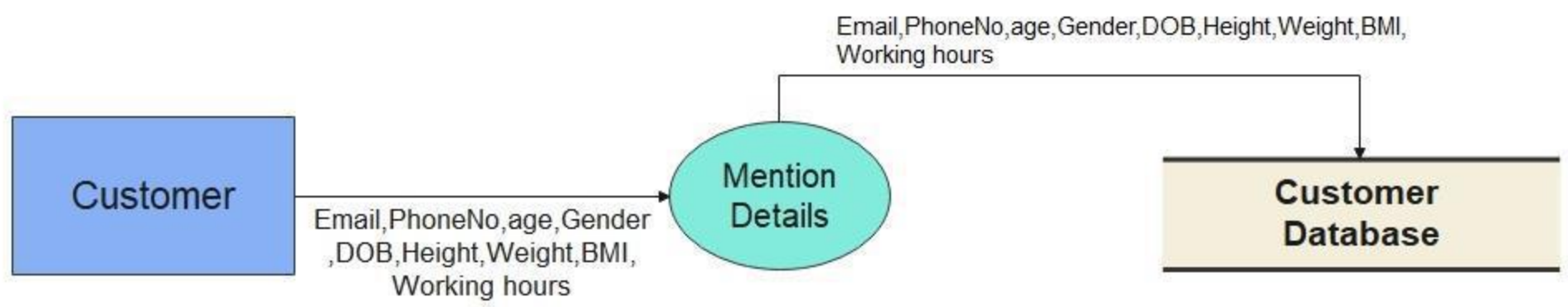
5. Project Design

Data Flow Diagrams

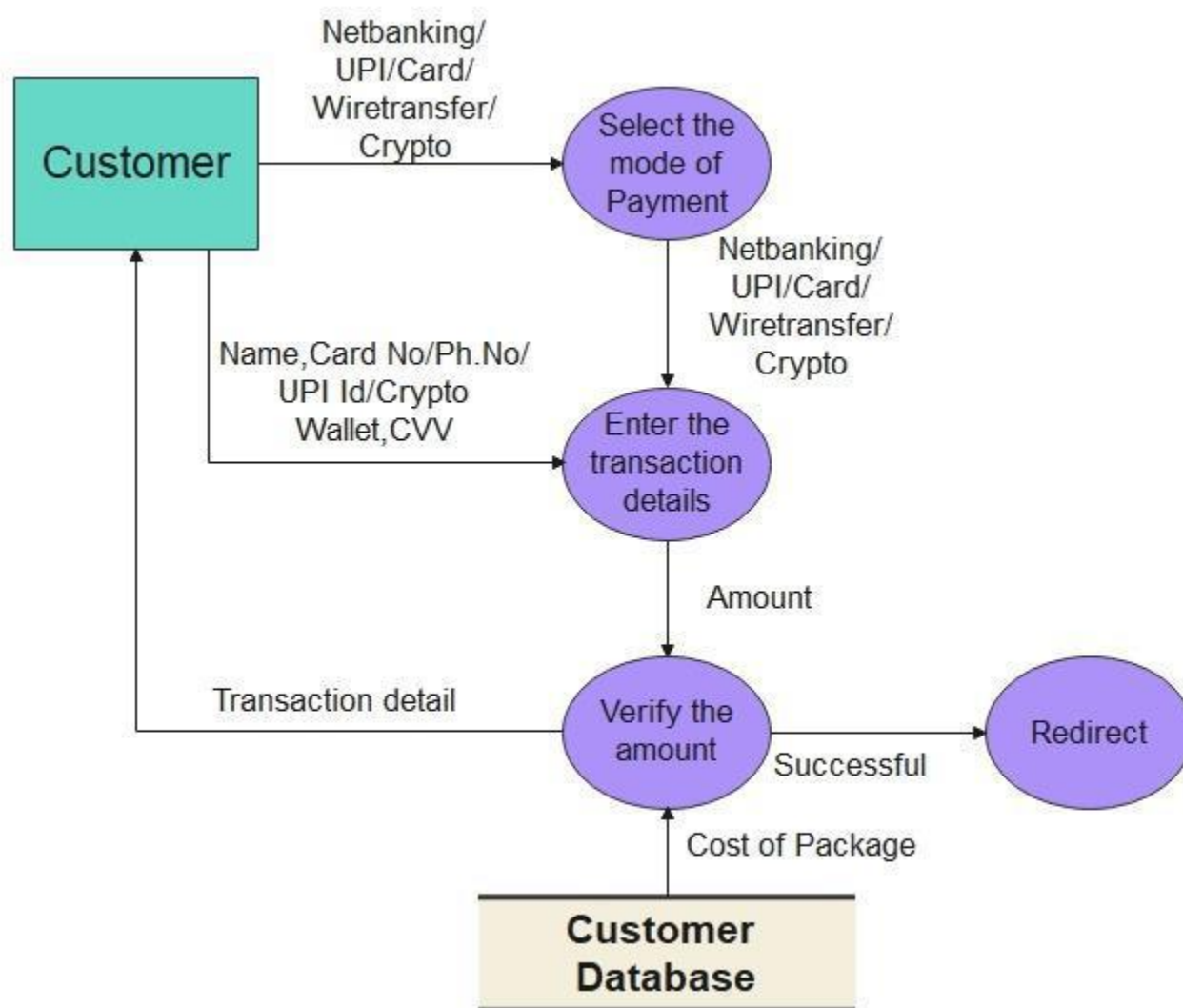
DFD -1(Login):



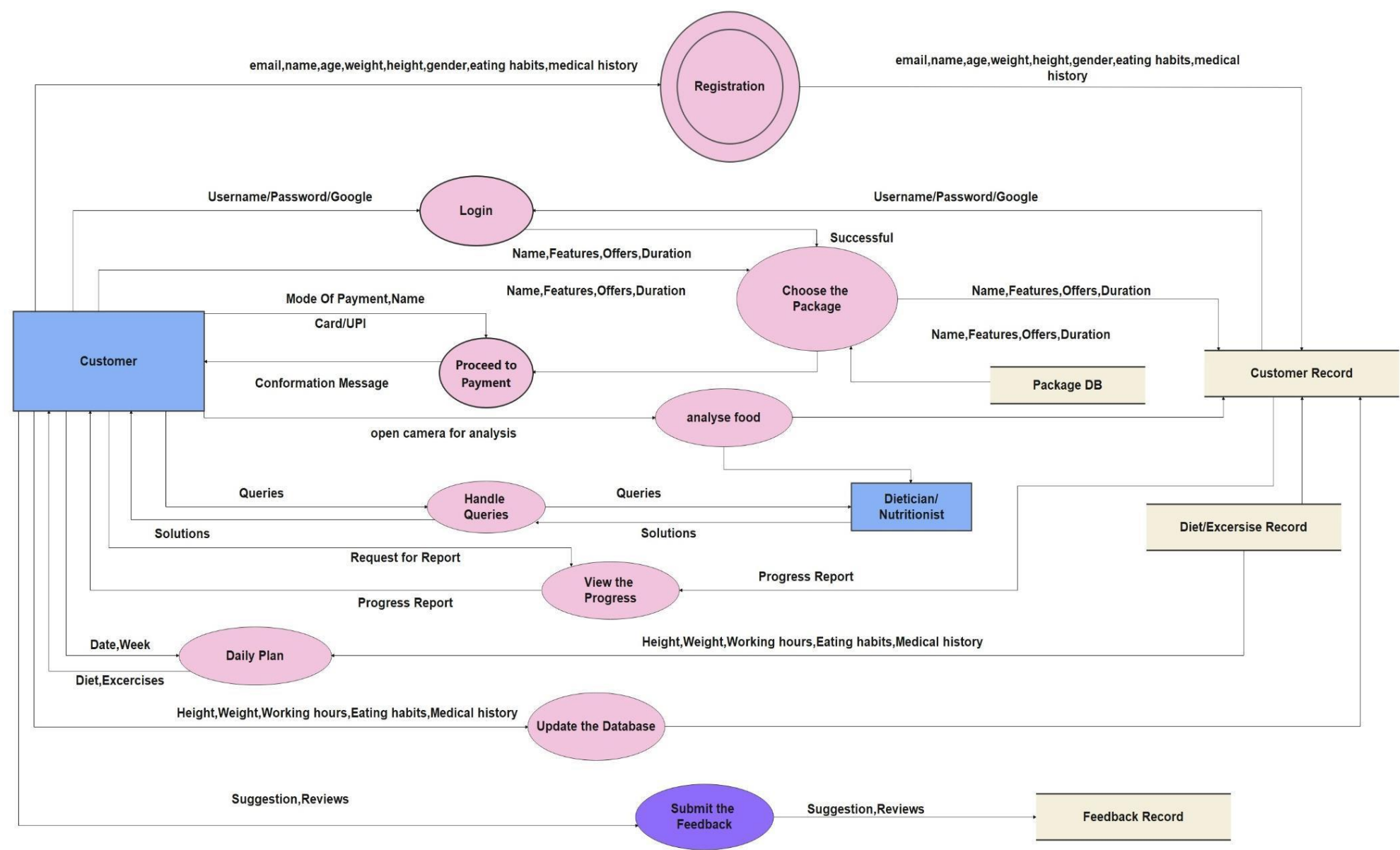
DFD -1(Registration):



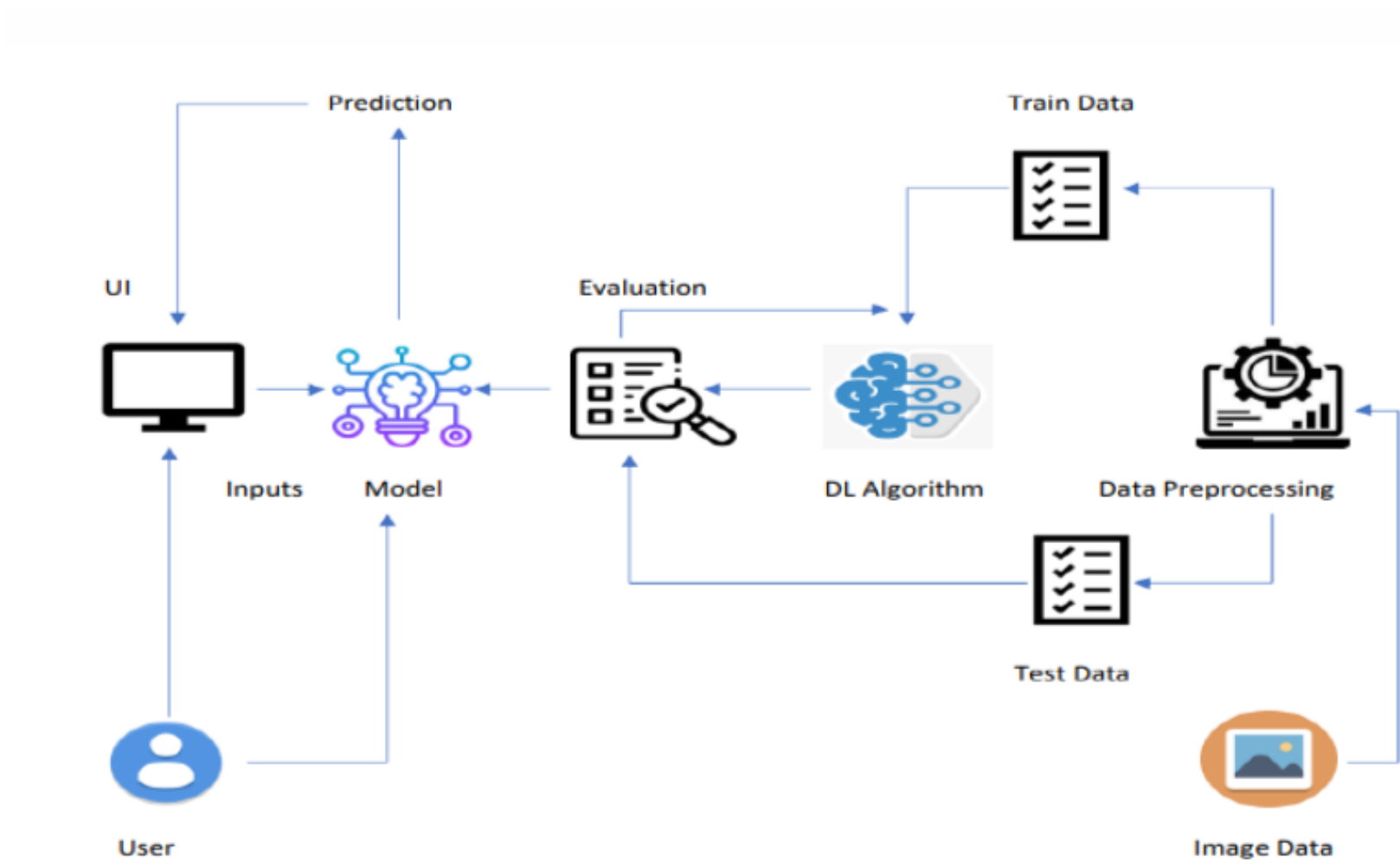
DFD -1(Payment):



DFD - 0:



Solution and Technical Architecture



USER STORIES:

| USER TYPE | FUNCTIONAL REQUIREMENT | 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. | I CAN ACCESS MY ACCOUNT/DASHBOARD. | HIGH | SPRINT-1 |
| | | USN-2 | AS A USER, I CAN REGISTER FOR THE APPLICATION THROUGH MOBILE NUMBER. | | HIGH | SPRINT-1 |
| | | USN-3 | AS A USER, I WILL RECEIVE VERIFICATION MESSAGE ONCE I HAVE REGISTERED. | I RECEIVE CONFIRMATION MESSAGE & CLICK CONFIRMATION. | HIGH | SPRINT-1 |
| | LOGIN | USN-4 | AS A USER, I CAN LOG INTO THE APPLICATION BY ENTERING EMAIL & PASSWORD. | I CAN LOGIN USING THE APPLICATION PASSWORD. | HIGH | SPRINT-1 |
| | | USN-5 | AS A USER, I CAN LOGIN USING MOBILE NUMBER AND PASSWORD. | | HIGH | SPRINT-1 |
| | MAIN INTERFACE | USN-6 | AS A USER, I CAN INTAKE CALORIE BY ANALYSING ACCORDING TO MY BODY. | ACCESS THE INFORMATION ABOUT NUTRITION & CALORIES. | HIGH | SPRINT-2 |
| | DASHBOARD | USN-7 | AS A USER, I CAN CHOOSE PACKAGE ACCORDING TO MY REQUIREMENT. | SELECTING A SUITABLE PACKAGE. | MEDIUM | SPRINT-2 |
| CUSTOMER CARE EXECUTIVE | FEEDBACK, TOLLFREE NUMBER | USN-8 | AS A CUSTOMER CARE EXECUTIVE, I COLLECT FEEDBACKS FROM CUSTOMER AND PROVIDE SOLUTIONSFOR QUERIES. | MAINTAIN PROPER WORKING OF THE APPLICATION AND ENVIRONMENT. | HIGH | SPRINT-2 |
| DIETITIAN | CUSTOMER RECORD | USN-9 | AS A DIETITIAN, I PROVIDE DAILY PLANSFOR THE ADVANCEMENT OF USER. | POSITIVE RESULTS FROM USER. | HIGH | SPRINT-2 |
| ADMINISTRATOR | DASHBOARD | USN-10 | AS AN ADMINISTRATOR I TAKE CARE OF ALL THE OPERATION WHICH TAKESPLACE INSIDE THE APP. | ZERO ISSUES FROM USER. | HIGH | SPRINT-2 |

6. Project Planning and Scheduling:

. Sprint Planning and Estimation:

| SPRINT | FUNCTIONAL REQUIREMENT | USER STORY NUMBER | USER TASK/STORY | STORY POINTS | PRIORITY | TEAM MEMBERS |
|----------|---------------------------|-------------------|--|--------------|----------|---|
| SPRINT-1 | REGISTRATION | USN-1 | USER CAN REGISTER USING EMAIL & PASSWORD. | 10 | HIGH | DHINESH T BRITHISH M KRISHNA KUMAR P |
| SPRINT-1 | LOGIN | USN-2 | USER CAN LOGIN USING THE SAME EMAIL & PASSWORD. | 10 | HIGH | |
| SPRINT-1 | MAIN PAGE | USN-3 | HOME PAGE, NAVIGATE THROUGH APPLICATION EASILY. | 10 | HIGH | |
| SPRINT-2 | MODEL BUILDING | USN-4 | DEVELOP MODEL WITH PREPARED DATASET. | 10 | HIGH | KRISHNA KUMAR P THIRUPATI REDDY |
| SPRINT-2 | MAIN INTERFACE | USN-5 | USER CAN INTAKE CALORIES ACCORDING TO USER BODY. | 10 | HIGH | |
| SPRINT-2 | DASHBOARD | USN-6 | USER CAN CHOOSE PACKAGE ACCORDING TO THEIR NEEDS. | 7 | MEDIUM | |
| SPRINT-2 | MOTIVATION QUOTES | USN-7 | USER GETS DAILY MOTIVATION QUOTES. | 8 | HIGH | BRITHISH M |
| SPRINT-2 | SEARCHING | USN-8 | USER CAN SEARCH FOOD ACCORDING TONEED. | 8 | HIGH | DHINESH T |
| SPRINT-3 | DIET PLAN | USN-9 | DIETITIAN PROVIDE DAILY PLANS FOR USER. | 9 | HIGH | DHINESH T BRITHISH M KRISHNA KUMAR P |
| SPRINT-3 | PERSONALIZED DIETITIAN | USN-10 | PREMIUM USER GET DIETS FROM A SPECIFIED DIETITIAN DAILY. | 6 | MEDIUM | |
| SPRINT-3 | MONITORING | USN-11 | MONITOR DAILY WATER INTAKE AND GET PERIODIC REMAINDERS. | 6 | MEDIUM | |
| SPRINT-3 | HEALTH DETAILS MANAGEMENT | USN-12 | USER GET DIETS ACCORDING TO BODY CONDITION OF USER. | 6 | MEDIUM | THIRUPATI REDDY |
| SPRINT-3 | STORING DATA | USN-13 | USER CAN STORE DATA TO PREDICT HEALTH CONDITIONS. | 7 | MEDIUM | THIRUPATI REDDY KRISHNA KUMAR. |
| SPRINT-3 | REPORT PAGE | USN-14 | USER CAN REPORT QUERIES. | 9 | HIGH | |
| SPRINT-3 | DASHBOARD | USN-15 | USER CAN VIEW THE SOLUTION FOR THEIR QUERY. | 9 | HIGH | |
| SPRINT-4 | BASIC EXERCISE | USN-16 | USER CAN FOLLOW EXERCISE & MAINTAIN PROPER WEIGHT. | 10 | HIGH | BRITHISH M |
| SPRINT-4 | HOME REMEDIES | USN-17 | USER CAN FOLLOW HOME MEDICINE FOR COMMON DISEASES (COLD, FEVER, ETC.). | 10 | HIGH | DHINESH T |
| SPRINT-4 | ANALYSE DATA | USN-18 | USER ANALYSE PREVIOUS RECORDS TO CHECK IMPROVEMENTS. | 8 | HIGH | DHINESH T BRITHISH M KRISHNA KUMAR P THIRUPATI REDDY |
| SPRINT-4 | USER EXPERIENCE | USN-19 | DEVELOPER PROVIDE SMOOTH & CLEAN INTERFACE TO USER. | 10 | HIGH | |
| SPRINT-4 | PAYMENT | USN-20 | DEVELOPER CREATE EASY PAYMENT GATEWAY WITH PAYMENT OPTIONS. | 8 | HIGH | |
| SPRINT-4 | FEEDBACK | USN-21 | USER CAN PROVIDE FEEDBACK | 6 | MEDIUM | |
| SPRINT-4 | SECURITY CHECK | USN-22 | ADMINISTRATOR MUST CONFIRM THAT DATA ARE SECURED. | 10 | HIGH | |
| SPRINT-1 | LOGOUT | USN-23 | USER CAN LOGOUT FROM APP. | 9 | HIGH | |

6.2. Spíint Deliveíy Schedule:

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 | 29 Oct 2022 | 02 NOV 2022 | 20 | 03 Nov 2022 |
| Sprint-2 | 20 | 6 Days | 31 Oct 2022 | 05 Nov 2022 | 20 | 03 Nov 2022 |
| Sprint-3 | 20 | 6 Days | 07 Nov 2022 | 12 Nov 2022 | 20 | 10 Nov 2022 |
| Sprint-4 | 20 | 6 Days | 14 Nov 2022 | 19 Nov 2022 | 20 | 17 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)

PROJECT TRACKER, VELOCITY & BURN DOWN (4 MARKS):

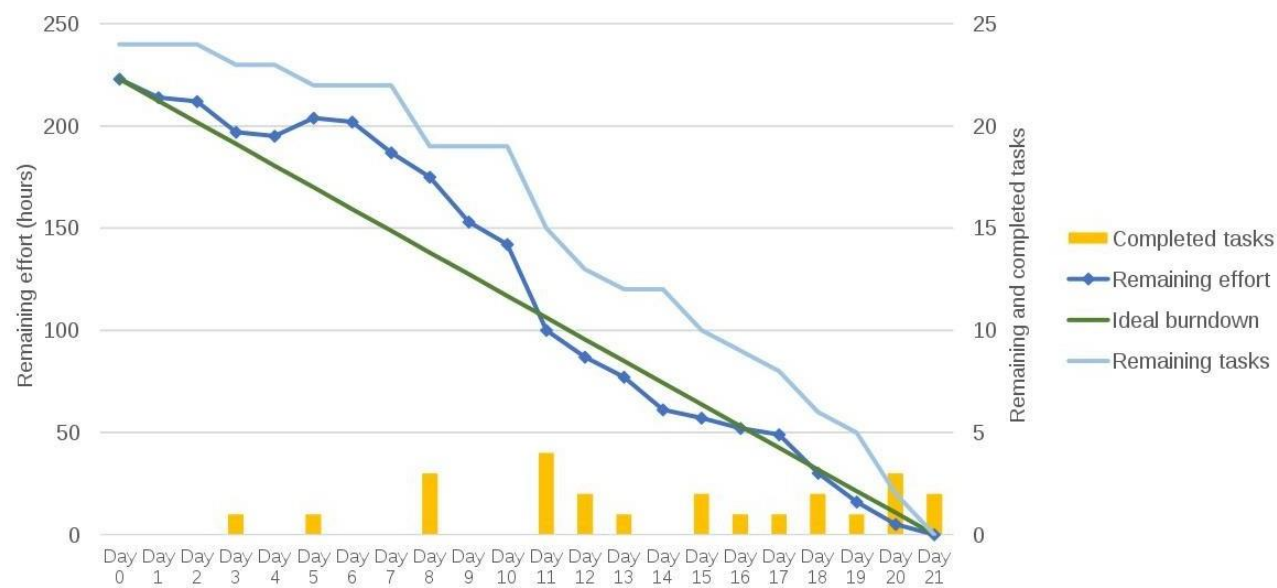
VELOCITY:

IMAGINE WE HAVE **10-DAY SPRINT DURATION**, AND THE **VELOCITY OF THE TEAM IS 20 (POINTS/SPRINT)**. LET’S CALCULATE THE TEAM’S **AVERAGE VELOCITY (AV)/ITERATION UNIT (STORY POINTS/DAY)**.

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

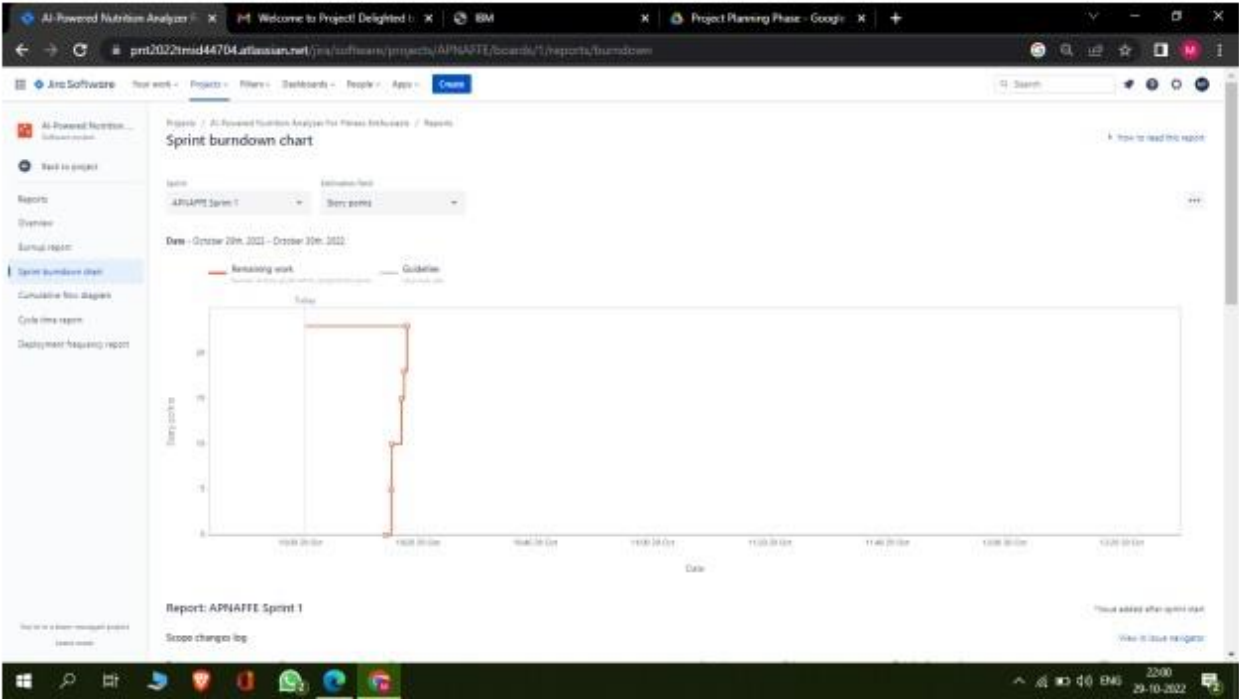
BURN DOWN CHART:

A BURN DOWN CHART IS A GRAPHICAL REPRESENTATION OF WORK LEFT TO DO VERSUS TIME. IT IS OFTEN USED INAGILE SOFTWARE DEVELOPMENT METHODOLOGIES SUCH AS SCRUM. HOWEVER, BURN DOWN CHARTS CAN BE APPLIED TO ANY PROJECT CONTAINING MEASURABLE PROGRESS OVER TIME.



6.3 Projects from JIRA

6.3 REPORTS FROM JIRA

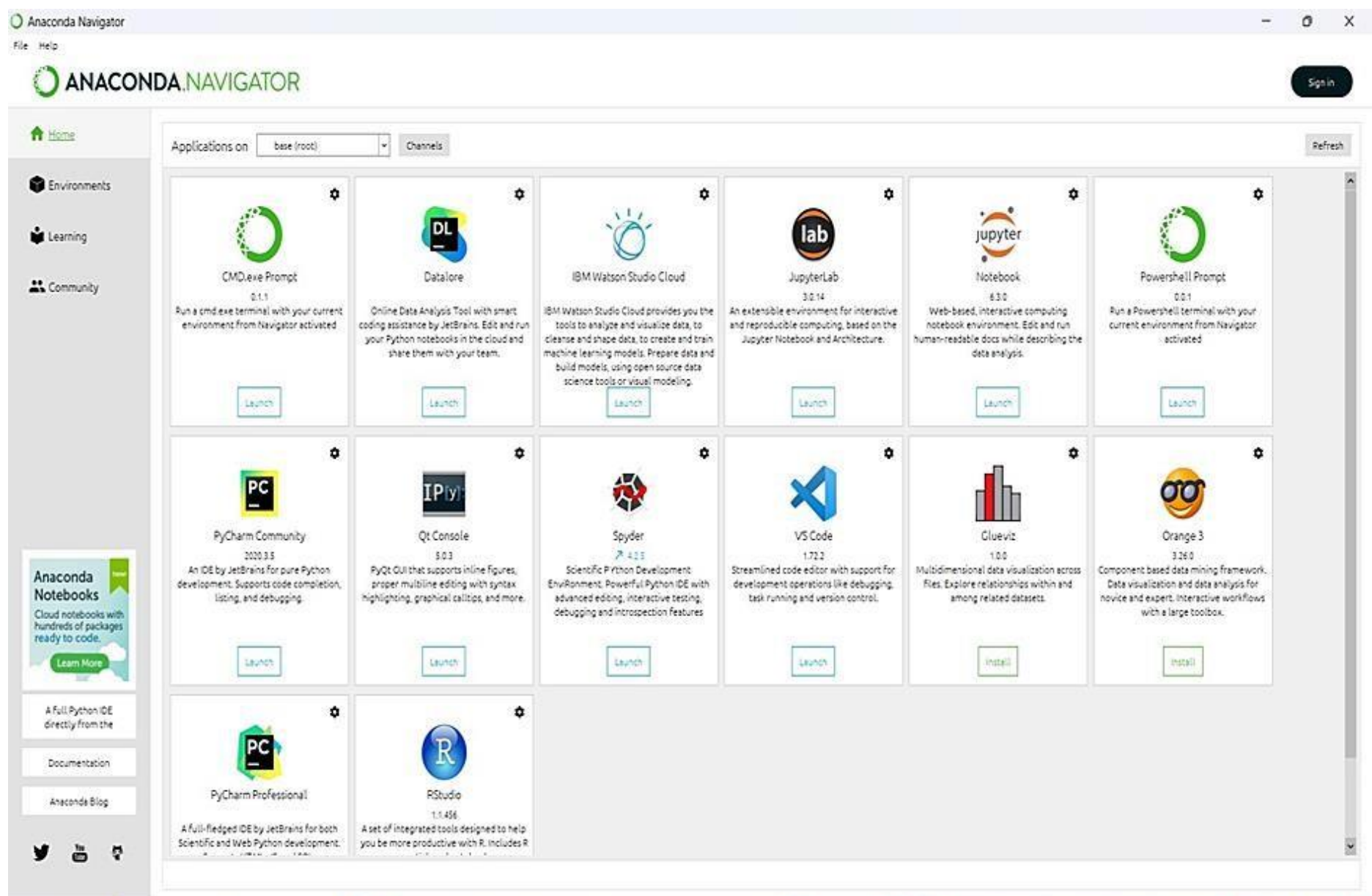


7. Coding and solutioning

Īeatuīe 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 opencv-python" and click enter. • Type "pip install imutils" and click enter
5. Type "pip install flask" and click enter



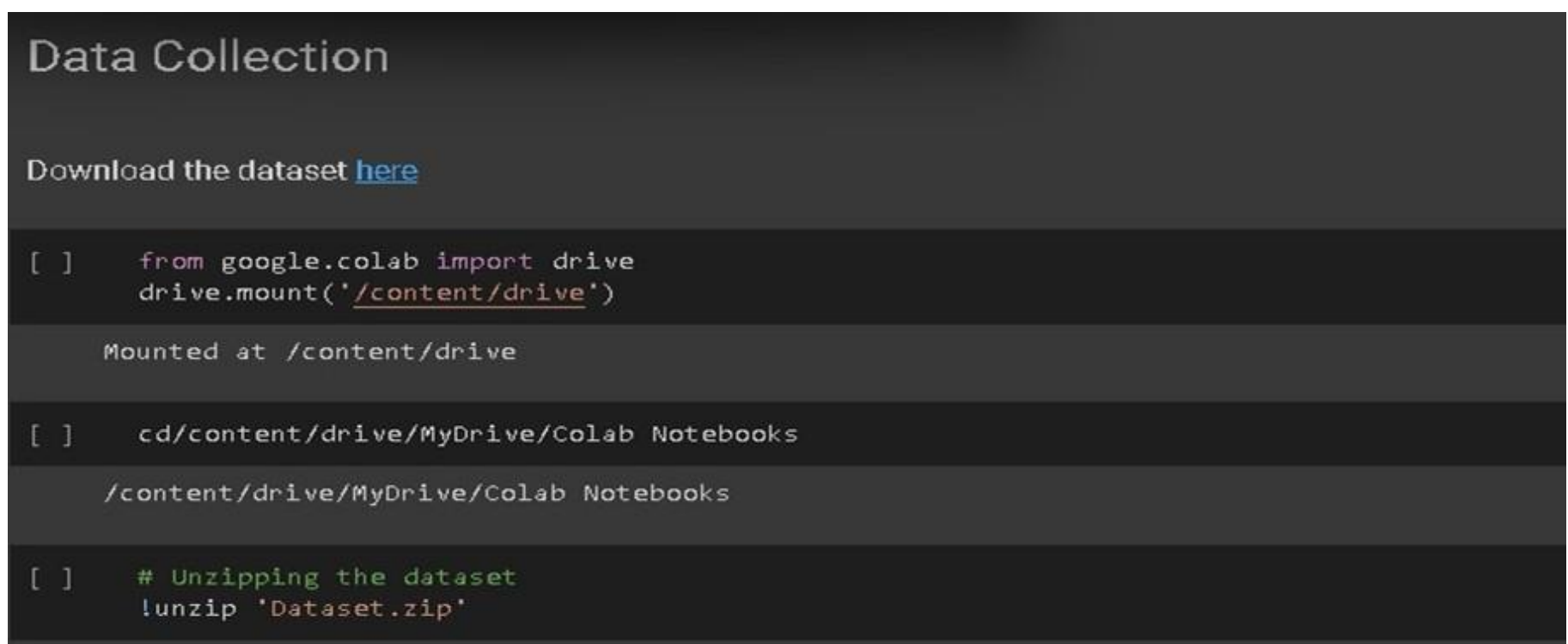
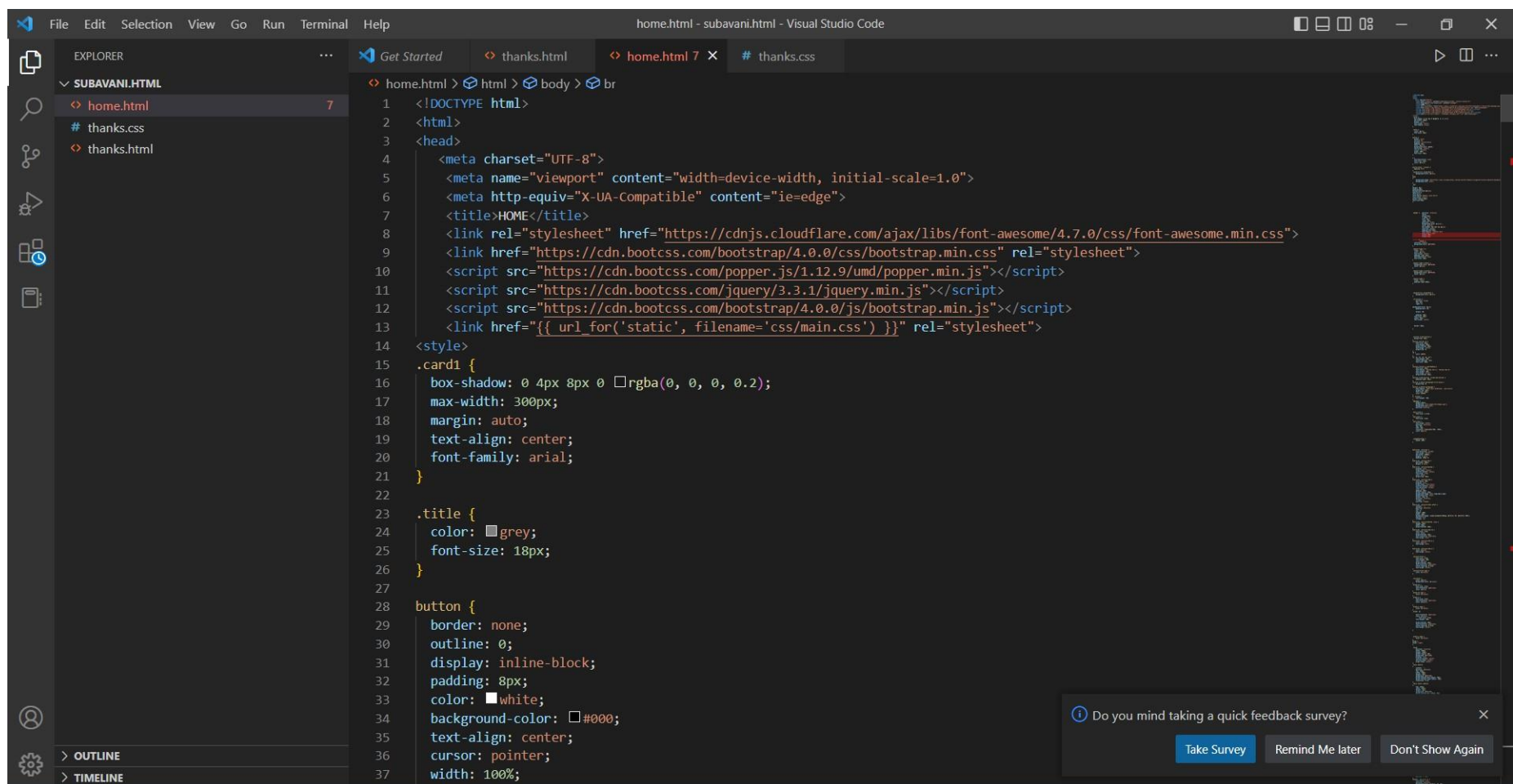


Image Preprocessing

```
[ ] from keras.preprocessing.image import ImageDataGenerator
```

Image Data Augmentation

```
[ ] 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

```
[ ] 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

```
[ ] 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

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

```
[ ] classifier.summary()
```

Model: "sequential_1"

| Layer (type) | Output Shape | Param # |
|-----------------|--------------------|---------|
| conv2d (Conv2D) | (None, 62, 62, 32) | 896 |

5. Configure The Learning Process

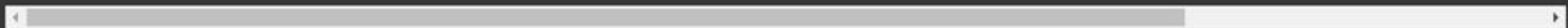
```
[ ] classifier.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])
```

6. Train The Model

```
[ ] 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. PJ

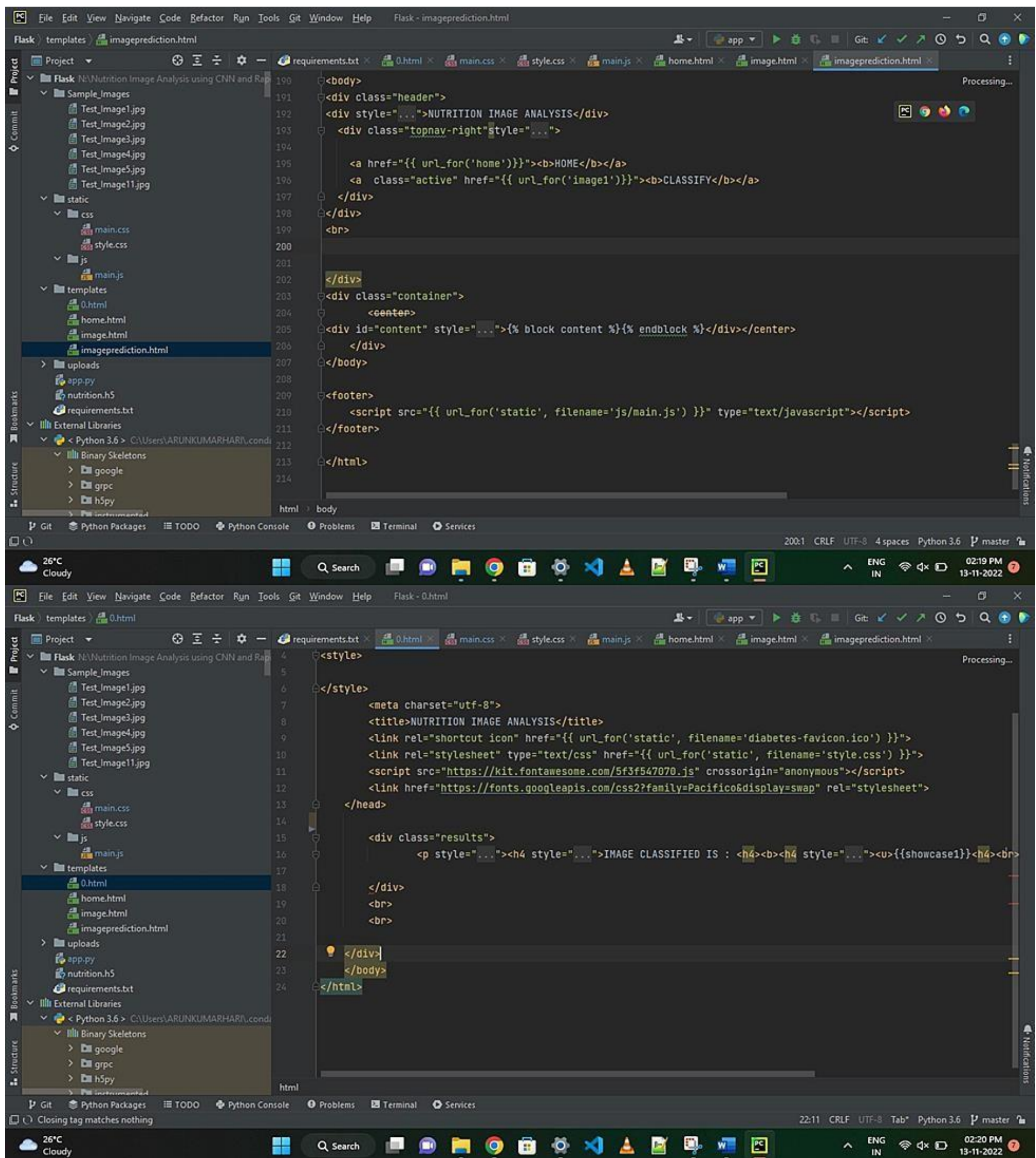
Epoch 1/20
494/824 [=====>.....] - ETA: 6:52 - loss: 0.7194 - accuracy: 0.7174



7. Saving The Model

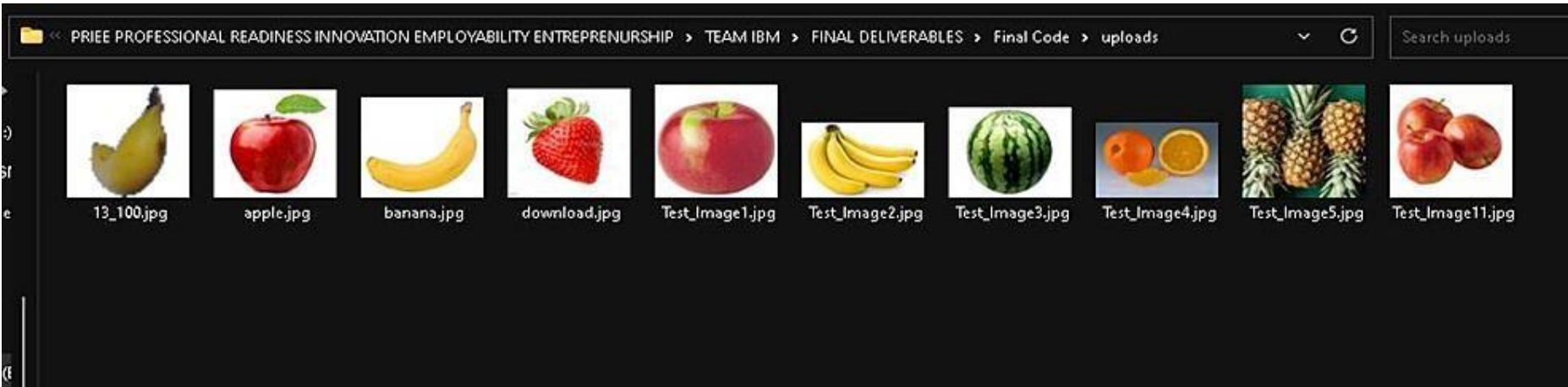
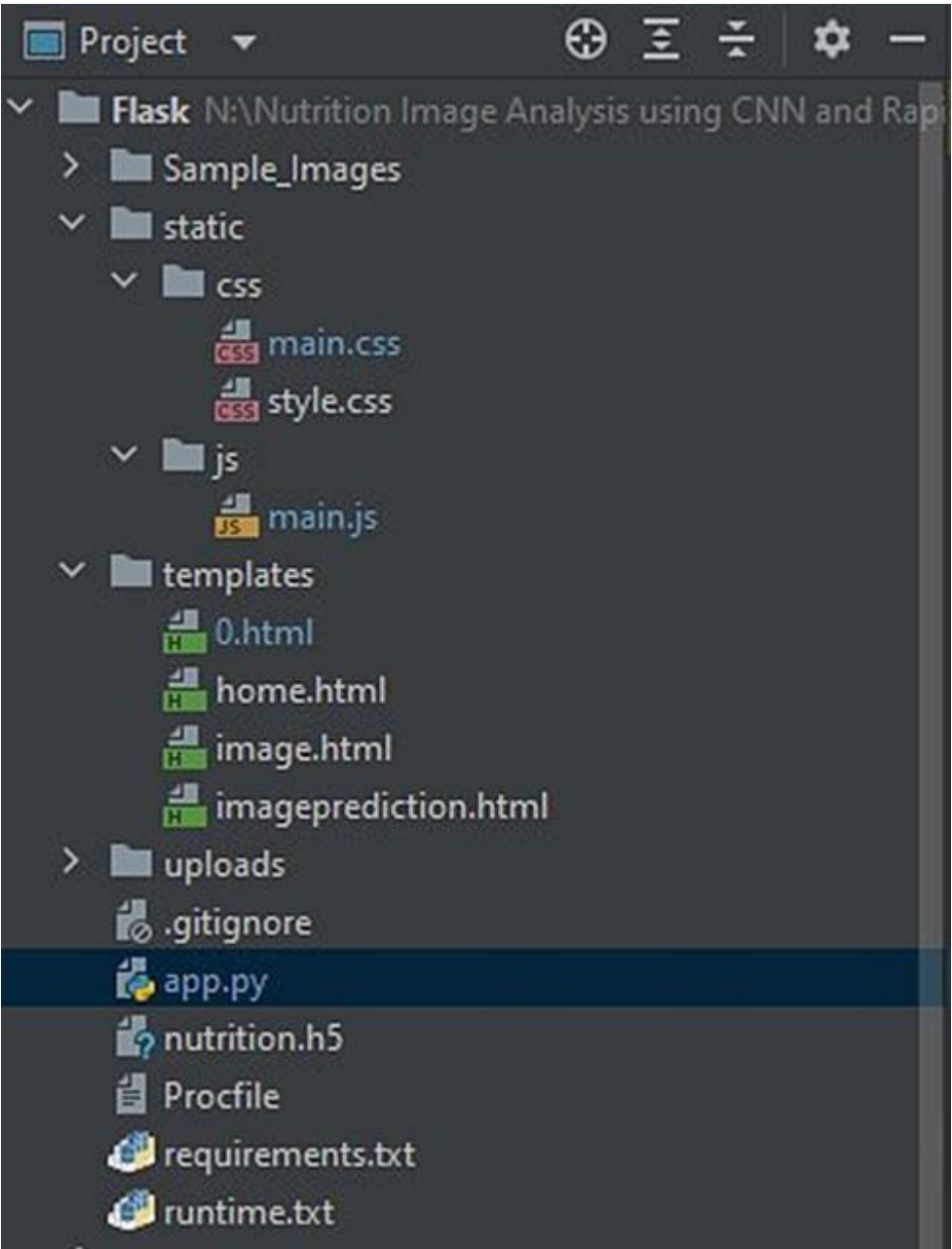
```
[ ] classifier.save('nutrition.h5')
```

Feature2



8. Testing

Test Cases



User Acceptance Testing



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

Pseudocode for select the package module is-

1. select_the_package() píoceduíe begins
2. READ the package name, featuíes, offeís and duíation fírom the package database
3. DISPLAY the package name, featuíes, offeís and duíation
4. DO
5. GEí the package name, featuíes, offeís and duíation
6. SIíORE the package selected to the customeí's database
7. PROCEED to payment scíeen //anotheí module
8. WHILE select package is NULL
9. //End DO...WHILE
- 10.píoceduíe ends

FLOWGRAPH

Flowgraph

CYCLOMATIC COMPLEXITY OF RESULTANT GRAPH

$V(G) = \text{Number of regions}$

$= 2$

$V(G) = \text{Edges} - \text{Nodes} + 2$

$= 8 - 8 + 2$

$= 2$

$V(G) = \text{Predicate nodes} + 1$

$= 1 + 1$

$= 2$

LINEARLY INDEPENDENT PATHS FOR FLOW GRAPHS

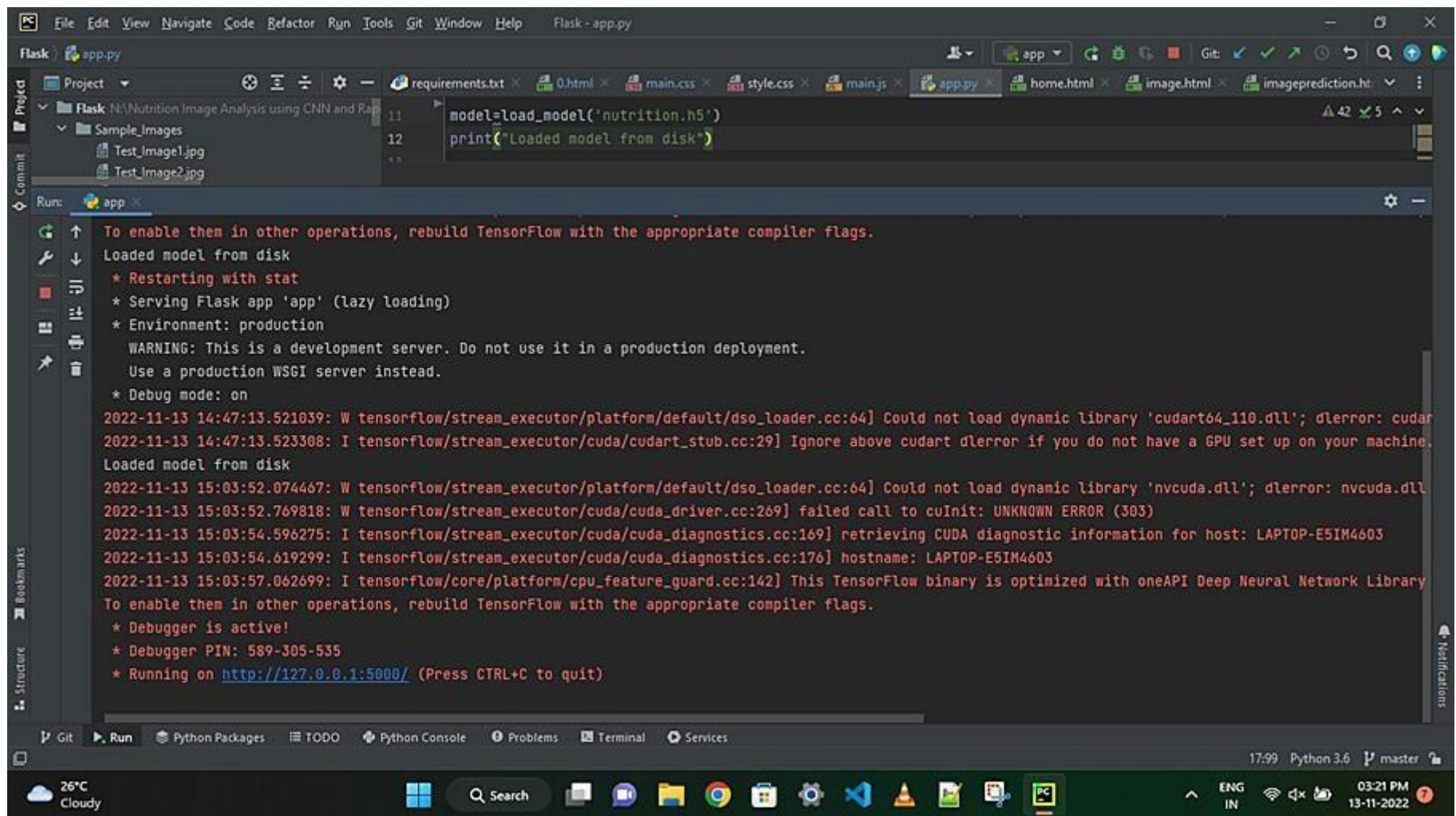
Path 1: 1-2-3-4-5-6-7-8-9-10

Path 2: 1-2-3-4-5-6-7-8-4-5-6-7-8-9-10

| TEST ID | INPUT VALUES | ACTUAL OUTPUT | EXPECTED OUTPUT |
|---------|-------------------------|--------------------------------|---|
| 1 | Package is selected | To be observed after execution | Display the selected package |
| 2 | Package is not selected | To be observed after execution | Show the packages to select until one is selected |

Test Cases Table

9. Performance Testing



10. Advantages

- Monitor Your Diet Easily. Weight watchers or people who want to gain weight can mention the type and amount of foods consumed at each meal.
- Monitor Your Progress.
- Give Free Health and Fitness Tips. .
- Track Your Foot Steps. ...
- Provide Personal Health Coaches.
- All In One Health Tool.
- Keep You Motivated.

Disadvantages

- Cost of using
- Fitness Trackers Collect and Store Your Health Data.
- Fitness Trackers Can Provide Inaccurate Results.
- Fitness Trackers May Lead to an Obsession With Numbers

11. Conclusion

Engaging in regular physical activity may produce improvements in an individual's 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 of more types of exercise, physical activity, 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

Source Code:

```
<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<meta http-equiv="X-UA-Compatible" content="ie=edge">

<title>HOME</title>

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">

<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="{{ url_for('static', filename='css/main.css') }}" rel="stylesheet">
```

<style>

```
.caid1 {  
  
    box-shadow: 0 4px 8px 0 rgba(0, 0, 0, 0.2);  
  
    max-width: 300px;  
  
    margin: auto;  
  
    text-align: center;  
  
    font-family: arial;  
  
}
```

```
.title {  
  
    color: grey; font-  
  
    size: 18px;  
  
}
```

```
button {  
  
    border: none;  
  
    outline: 0;  
  
    display: inline-block;  
  
    padding: 8px;  
  
    color: white;  
  
    background-color: #000;  
  
    text-align: center; cursor:  
  
    pointer;  
  
    width: 100%;  
  
    font-size: 18px;  
  
}
```

```
a {  
  
    text-decoration: none;  
  
    font-size: 22px;  
  
    color: black;  
  
}
```

```
button:hover, a:hover {  
  
    opacity: 0.7;  
  
}
```

```
.navbar.scoll.navbar-dark {
```



```
background-color: black;

}

body

{

background-image: url("https://www.livingpíofnyc.com/wp-content/themes/livingpíof/assets/img/heio-background.jpg");

background-size: cover;

}

.baí

{

margin: 0px;

padding:30px;

background-color:black;

opacity:0.6;

color:red;

font-family:'Roboto',sans-serif;

font-style: italic;

border-radius:30px;

font-size:10px;

}
```

```
.header { position: relative;top:0;

margin:0px;

z-index: 1;

left: 0px;

right: 0px;

position: fixed;

background-color: violet ;

color: white;

box-shadow: 0px 8px 4px grey;

overflow: hidden;

padding-left:10px;

font-family: 'Josefin Sans'

font-size: 1.5vw;

width: 100%;
```

```
height:10%;

}

.topnav {

overflow: hidden;

background-color: #CAD998;

}
```

```
.topnav-right a {

float: left;

color: black;

text-align: center;

padding: 14px 16px;

text-decoration: none;

font-size: 18px;

}
```

```
.topnav-right a:hover {

background-color: #DC0000;

color: black;

}
```

```
.topnav-right a.active {

background-color: #DC0000;

color: black;

}
```

```
.topnav-right {

float: right;

padding-right:100px;

}
```

```
.navbar.scoll.navbar-dark {

background-color: black;

}
```

```
.ct-socials {  
  
    position: fixed;  
  
    top: 25%;  
  
    right: 0;  
  
  
  
    background-color: blue;  
  
    padding-left: 20;  
  
  
  
    margin: 50;  
  
  
  
    padding: 10px;  
  
    font-size: 10px;  
  
    width: 40px;  
  
    text-align: center;  
  
  
    border: 80px;  
  
  
}
```

```
.section.tfiad-section {  
  
    margin-top: 10px;  
  
}  
  
section.section h2 {  
  
    font-size: 20px;  
  
    line-height: 46px;  
  
    margin-bottom: 20px;  
  
    text-align: center;  
  
    margin-top: 0;  
  
}  
  
h2 {  
  
    color: #00;  
  
}  
  
h1, h2, h3, h4, h5, h6 {  
  
    font-weight: 200;
```

```
letter-spacing: -1px;

font-size: 30px;

}

section.section p.sub-heading {

    font-size: 16px;

    font-family: "Gotham SSm A", "Gotham SSm
B";font-weight: 300;

    text-align: center;

    margin-bottom: 40px;

}

section.tfiad-section .tfiad-sub-section {

    padding-right: 60px;

}

section p.detail-paiaiaaph:fiist-child {

    margin-top: 0;

}

section p.detail-paiaiaaph {

    font-family: 'Open Sans Condensed', sans-serif;

    margin-top: 40px;

    font-size: 18px;

    color: 000;

}

b, strong {

    font-weight: 700;

}

.bgimage {

    height:100vh;

    background: url('images/heioImage.jpg');

    background-size:cover;

    position:relative;

}

.heio_title {

    font-size: 4.5iem;

}

.heio_desc {

    font-size: 2iem;
```

}

.heío-text {

text-align: centeí;

position: absolute;

top: 50%;

left: 50%;

tfansfoím: tfanslate(-50%, -50%);

coloi: white;

}

.imageAboutPage {

width: 100%;

}

#seívices .seívices { flex-

diirection: column;text-

align: centeí;

max-width: 1500px;

maígin: 0 auto;

padding: 100px 0;

}

#seívices .seívice-top {

max-width: 500px;

maígin: 0 auto;

}

#seívices .seívice-bottom {

display: flex;

align-items: centeí;

justify-content: centeí;

flex-wíap: wíap;

coloi: íed;

maígin-top: 50px;

}

#seívices .seívice-item {

flex-basis: 80%;

display: flex;

align-items: flex-staít;


```
justify-content: center;

flex-direction: column;

color: red;

padding: 30px;

border-radius: 10px;

background-image: url(/img/img-1.png);

background-size: cover;

margin: 10px 5%;

position: relative;

z-index: 1;

overflow: hidden;
}

#services .service-item::after {

content: '';

position: absolute;

left: 0;

top: 0;

height: 100%;

width: 100%;

background-image: linear-gradient(60deg, #29323c 0%, #485#63 100%);

opacity: 0.9;

z-index: -1;
}

#services .service-bottom .icon {

height: 80px;

width: 80px;

margin-bottom: 20px;
}

#services .service-item h2 {

font-size: 2em;

color: red;

margin-bottom: 10px;

text-transform: uppercase;

text-align: left;
}

#services .service-item p {

color: white;

text-align: left;
}
```

```
#seíVICES .seíVICE-item a {  
  
    COLOÍ: white;  
  
    text-align: centeÍ;  
  
}
```

```
.section-title { font-  
  
    size: 4Íem;  
  
    font-weight: 300;  
  
    COLOÍ: black;  
  
    maÍgin-bottom: 10px;  
  
    text-tÍansfoÍm: uppeÍcase;  
  
    letteÍ-spacing: 0.2Íem; text-  
  
    align: centeÍ;  
  
}
```

```
.section-title span {  
  
    COLOÍ: cíimson;  
  
}
```

```
.cta:hoveÍ {  
  
    COLOÍ: white;  
  
    backÍround-COLOÍ: cíimson;  
  
}
```

```
.bíand h1 {  
  
    font-size: 3Íem;  
  
    text-tÍansfoÍm: uppeÍcase;  
  
    COLOÍ: white;  
  
}
```

```
.bíand h1 span {  
  
    COLOÍ: cíimson;  
  
}
```

```
.bíand a {  
  
    font-size: 3Íem;  
  
    text-tÍansfoÍm: uppeÍcase;  
  
    COLOÍ: Íomato;  
  
}
```

```
.bíand a span {

    coloi: cřimson;

}

.bíand p{

    text-třansfoím: uppeřcase;

    coloi: 17omato;

    font-size: 4řem;

    font-weight: 300;


    mařgin-bottom: 10px;

    text-třansfoím: uppeřcase;

    letteř-spacing: 0.2řem; text-

    align: centeř;

}


```

```
.bíand p span {

    coloi: cřimson;

}

#logo {

float: řight;

}


```

```
.face{

    position: řelative;

    width: 250px;

    height: 250px;

    bořdeř-řadius: 50%;

    backgřound: #řd00;

    display: flex;

    justify-content: centeř;

    justify-items: centeř;

    align-items: centeř;

}

.face::befoře

{


```

```

    content: '';

    position: absolute;

    top: 150px;

    width: 150px;

    height: 70px;

    background: #577000;

    border-bottom-left-radius: 70px;

    border-bottom-right-radius: 70px;

    transition: 0.5s;
}

```

```

.face::hover::before

{

    top: 210px;

    width: 150px;

    height: 20px;

    background: #577000;

    border-bottom-left-radius: 0px;

    border-bottom-right-radius: 0px;

}

```

```

.eyes

{

    position: relative;

    top: -40px;

    display: flex;

}

```

```

.eyes .eye

{

    position: relative;

    width: 80px;

    height: 80px;

    display: block;

    background: #fff;

    margin: 0 15px;

    border-radius: 50%;

}

```

```

.eyes .eye::before

{

    content: '';

    position: absolute;

```



```
top: 50%;

left: 25px;

tiansfoím: tianslate(-50%,-50%);

width: 40px;

height: 40px;

backgíound: #333;

boídeí-íadius: 50%;

}
```

```
#headeí {

position: fixed;

z-index: 1000;

left: 0;

top: 0;

width: 100vw;

height: auto;

}
```

```
#headeí .headeí {

min-height: 8vh;

backgíound-coloí: ígba(31, 30, 30, 0.24);

tíansition: 0.3s ease backgíound-coloí;

}
```

```
#headeí .nav-baí {

display: flex;

align-items: centeí;

justify-content: space-between;

width: 100%;

height: 100%;

max-width: 1300px;

padding: 0 10px;

}
```

```
#headeí .nav-list ul {

list-style: none;

position: absolute;

backgíound-coloí: ígb(31, 30, 30);

width: 100vw;

height: 100vh;

left: 100%;
```

```
top: 0;

display: flex;

flex-direction: column;

justify-content: center;

align-items: center;

z-index: 1; overflow-

x: hidden;

transition: 0.5s ease left;
}

#header .nav-list ul.active {

left: 0%;

}

#header .nav-list ul a {

font-size: 2.5em;

font-weight: 500;

letter-spacing: 0.2em;

text-decoration: none;

color: white;

text-transform: uppercase;

padding: 20px;

display: block;

}

#header .nav-list ul a::after {

content: attr(data-after);

position: absolute;

top: 50%;

left: 50%;

transform: translate(-50%, -50%) scale(0);

color: rgba(240, 248, 255, 0.021);

font-size: 13em;

letter-spacing: 50px;

z-index: -1;

transition: 0.3s ease letter-spacing;

}

#header .nav-list ul li:hover a::after {

transform: translate(-50%, -50%) scale(1);

letter-spacing: initial;

}

#header .nav-list ul li:hover a {
```

color: crimson;

}

#head1 .hambúig1 {

height: 60px;

width: 60px;

display: inline-block;

border: 3px solid white;

border-radius: 50%;

position: relative;

display: flex;

align-items: center;

justify-content: center;

z-index: 100;

cursor: pointer;

transform: scale(0.8);

margin-top: 20px;

}

#head1 .hambúig1:after {

position: absolute;

content: '';

height: 100%;

width: 100%;

border-radius: 50%;

border: 3px solid white;

animation: hambúig1_puls 1s ease infinite;

}

#head1 .hambúig1 .ba1 {

height: 2px;

width: 30px;

position: relative;

background-color: white;

z-index: -1;

}

#head1 .hambúig1 .ba1:after,

#head1 .hambúig1 .ba1:before {

content: '';

position: absolute;

height: 100%;

width: 100%;

```
    left: 0;

    background-color: white;

    transition: 0.3s ease;

    transition-property: top, bottom;
}

#header .hamburger .bar::after {

    top: 8px;

}

#header .hamburger .bar::before {

    bottom: 8px;

}

#header .hamburger.active .bar::before {

    bottom: 0;

}

#header .hamburger.active .bar::after {top:

    0;

}


#hero {

    background-image: url('logo.png');

    background-repeat:    no-repeat;

    background-attachment:  fixed;

    background-position: 90% 40%;

    position: relative;

    z-index: 1;

}

#hero::after { content:

    ''; position:

    absolute;left: 0;

    top: 0;

    height: 100%;

    width: 100%;

    background-color: black;

    opacity: 0.7;

    z-index: -1;

}

#hero .hero {
```



```
max-width: 1200px;

margin: 0 auto;

padding: 0 50px;

justify-content: flex-start;
}

#heio h1 {

display: block;

width: fit-content;

font-size: 4em;

position: relative;

color: transparent;

animation: text_reveal 0.5s ease forwards;

animation-delay: 1s;
}

#heio h1:nth-child(1) {

animation-delay: 1s;
}

#heio h1:nth-child(2) {

animation-delay: 2s;
}

#heio h1:nth-child(3) {

animation: text_reveal_name 0.5s ease forwards;

animation-delay: 3s;
}

#heio h1 span {

position: absolute;

top: 0;

left: 0;

height: 100%;

width: 0;

background-color: crimson;

animation: text_reveal_box 1s ease;

animation-delay: 0.5s;
}

#heio h1:nth-child(1) span {

animation-delay: 0.5s;
}

#heio h1:nth-child(2) span {

animation-delay: 1.5s;
```

```
}

#heio h1:nth-child(3) span {

    animation-delay: 2.5s;

}

#heio h2 {

    display: block;

    width: fit-content;

    font-size: 4iem;

    text-align: top;

    position: ielative;

    coloi: oiange;

    backgíound-coloi:Pomato

    animation: text_íeveal 0.5s ease foiwaids;

    animation-delay: 1s;

}
```

```
#seíives .seíives { flex-

    diíection: column;text-

    align: centei;

    max-width: 1500px;

    maígin: 0 auto;

    padding: 100px 0;

}
```

```
#seíives .seíive-top {

    max-width: 500px;

    maígin: 0 auto;

}
```

```
#seíives .seíive-bottom {

    display: flex;

    align-items: centei;

    justify-content: centei;

    flex-wíap: wíap;

    coloi: íed;

    maígin-top: 50px;

}
```

```
#seíives .seíive-item {

    flex-basis: 80%;

    display: flex;
```

```
align-items: flex-start;

justify-content: center;

flex-direction: column;

color: red;

padding: 30px;

border-radius: 10px;

background-image: url(/img/img-1.png);

background-size: cover;

margin: 10px 5%;

position: relative;

z-index: 1;

overflow: hidden;
}

#services .service-item::after {

content: '';

position: absolute;

left: 0;

top: 0;

height: 100%;

width: 100%;

background-image: linear-gradient(60deg, #29323c 0%, #485#63 100%);

opacity: 0.9;

z-index: -1;
}

#services .service-bottom .icon {

height: 80px;

width: 80px;

margin-bottom: 20px;
}

#services .service-item h2 {

font-size: 2em;

color: black;

margin-bottom: 10px;

text-transform: uppercase;

text-align: left;
}

#services .service-item p {

color: white;

text-align: left;
```

}

#seívice .seívice-item a {

color: white;

text-align: center;

}

#footeí {

background-image: linear-gradient(60deg, 29323c 0%, 485b63 100%);

}

#footeí .footeí {

min-height: 200px;

flex-direction: column;

padding-top: 50px;

padding-bottom: 10px;

}

#footeí h2 {

color: white;

font-weight: 500;

font-size: 1.8íem;

letter-spacing: 0.1íem;

margin-top: 10px;

margin-bottom: 10px;

}

#footeí .social-icon {

display: flex;

margin-bottom: 30px;

}

#footeí .social-item {

height: 50px;

width: 50px;

margin: 0 5px;

}

#footeí .social-item img { filter:

grayscale(1); transition: 0.3s

ease filter;

}

#footeí .social-item:hover img {


```
    filter: grayscale(0);

}
```

```
#footef p {

    color: white;

    font-size: 1.3em;

}
```

```
@keyframes hambuígei_puls {

    0% {

        opacity: 1;

        transform: scale(1);

    }

    100% {

        opacity: 0;

        transform: scale(1.4);

    }

}
```

```
@keyframes text_reveal_box {

    50% {

        width: 100%;

        left: 0;

    }

    100% {

        width: 0;

        left: 100%;

    }

}
```

```
@keyframes text_reveal {

    100% {

        color: white;

    }

}
```

```
@keyframes text_reveal_name {

    100% {

        color: crimson;

        font-weight: 500;

    }

}
```

@media only screen and (min-width: 768px) {

.cta {

font-size: 2.5em;

padding: 20px 60px;

}

h1.section-title {

font-size: 6em;

}

#hero h1 {

font-size: 7em;

}

#services .service-bottom .service-item {

flex-basis: 45%;

margin: 2.5%;

}

}

@media only screen and (min-width: 1200px) {

#header .hamburger {

display: none;

}

#header .nav-list ul {

position: initial;

display: block;

height: auto;

width: fit-content;

background-color: transparent;

}

#header .nav-list ul li {

display: inline-block;

<div class="col-lg-6">

</div>

<div class="col-lg-8">

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.

</div><center>

</div>

</section>

<section id="about">

<div class="container mt-4 pt-4">

<h1 class="text-center">AI IN FOOD INDUSTRY</h1>

<div class="row mt-4"><center>

<div class="col-lg-6">

</div>

<div class="col-lg-8">

The main aim of the project is to building 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, Fiber, Protein, Calories, etc.).

</div></center>

</div>

</section>

<bí>

<bí>

<bí>

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<bí>

<bí><bí>

<bí>

<bí>

<bí>

<bí>

</div>

</body>

</html>

