

Project report

# Prajwal's

# Nutrition Assistant

[Modern Web Application]

Project by,

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## 1. Introduction

### 1.1 Overview

As there is improvement in people's standards of living, obesity rates are increasing at an alarming speed, and this is reflective of the risks to people's health. People need to control their daily calorie intake by eating healthier foods. However, most of food packaging comes with nutrition labels, it's still not very convenient for people to refer.

Most people understand the repercussions of eating fast food but sometimes the repercussions are unexpected and may require the services of a personal injury lawyer. Most of my favorite foods cause weight gain and if eaten consistently, could lead to diabetes. In the last several years, there have been a handful of displeased fast-food eaters who took legal action against the fast-food chains to either make an easy buck or hold them accountable for their lousy products.

### 1.2 Purpose

The main purpose of this Web application is to help people know the nutrient value of the food they eat. This web app provides a service where the user can feed the food image/ food name/image URL and the app provides the nutrient value of the food. The user can also feed the daily consumption of food with time and date. Then he can access the food details whenever required. The nutrient details are also sent to the user mail.

This application can be used personally to take care of one's health, recommended by hospitals or the doctors to track the user daily food consumption. We will know more about this further.

## 2. LITRATURE SURVEY

### 2.1 Existing problem

In this busy world people can't track the food they consume and it is difficult to find the nutrients of all the food they consume. Over consumption or under nutrition can lead to serious health issues. These may be calcium/ iron/vitamin deficiencies or the over consumption of carbohydrates and sugar that causes obesity and diabetes. Which may further lead to serious health issues. There is urgent action required to maintain a balanced diet in order to have a good immunity.

### 2.2 Proposed solution

Our web app used the food image given by the user then processes that to the nutrient values of the food then displays to the user. these can reduce the user's effort to enter the food details. he can simply capture the food image and enter into the web app.

The user can enter the food details that he consumes daily on the basis of time and date of consumption. we then add the food details into the user table. the user can then go to the diary page and view the data entered by him between any particular dates. He can also view the aggregate nutrient details. We have provided an email service where users will get the aggregate nutrient details.

This application can be used on the recommendation of the doctor or the hospitals where one can track all the data that the patient consumed to track the nutrient details of the patient.

## Our Services



**Food nutrient value**

If you enter the food name/ image/ image URL we will give the information about the food and its nutrients

[OPEN SERVICE](#)



**Daily nutrient tracker**

enter the food you consumed and we Will track the food and store the total nutrients . You can then watch the total intake of the day

fig : Our services from dashboard page

YOUR NUTRIENT ANALYST

### Get to know about your food intake

We provide you the information based on the food input.You can check the food contents by uploading the food image/ image URL/ food name.

We also provide the service to track your daily food and Nutrition intake. You can then view your total nutrient consumption per day or week.

[READ MORE](#)



fig : 'About Us' page from web app

Prajwal's Nutrition Assistant

[Dashboard](#)    [About Us](#)    [Food Services](#)    [Daily Tracker](#)    [Personal Diary](#)    [Logout](#)

# HEALTHY WORLD & HEALTHY PEOPLE



Our services provide you the nutrients details. Our aim is make aware of importance of nutrients. Every one should intake the sufficient amount of nutrients required as per the body requirements

[LEARN MORE](#)

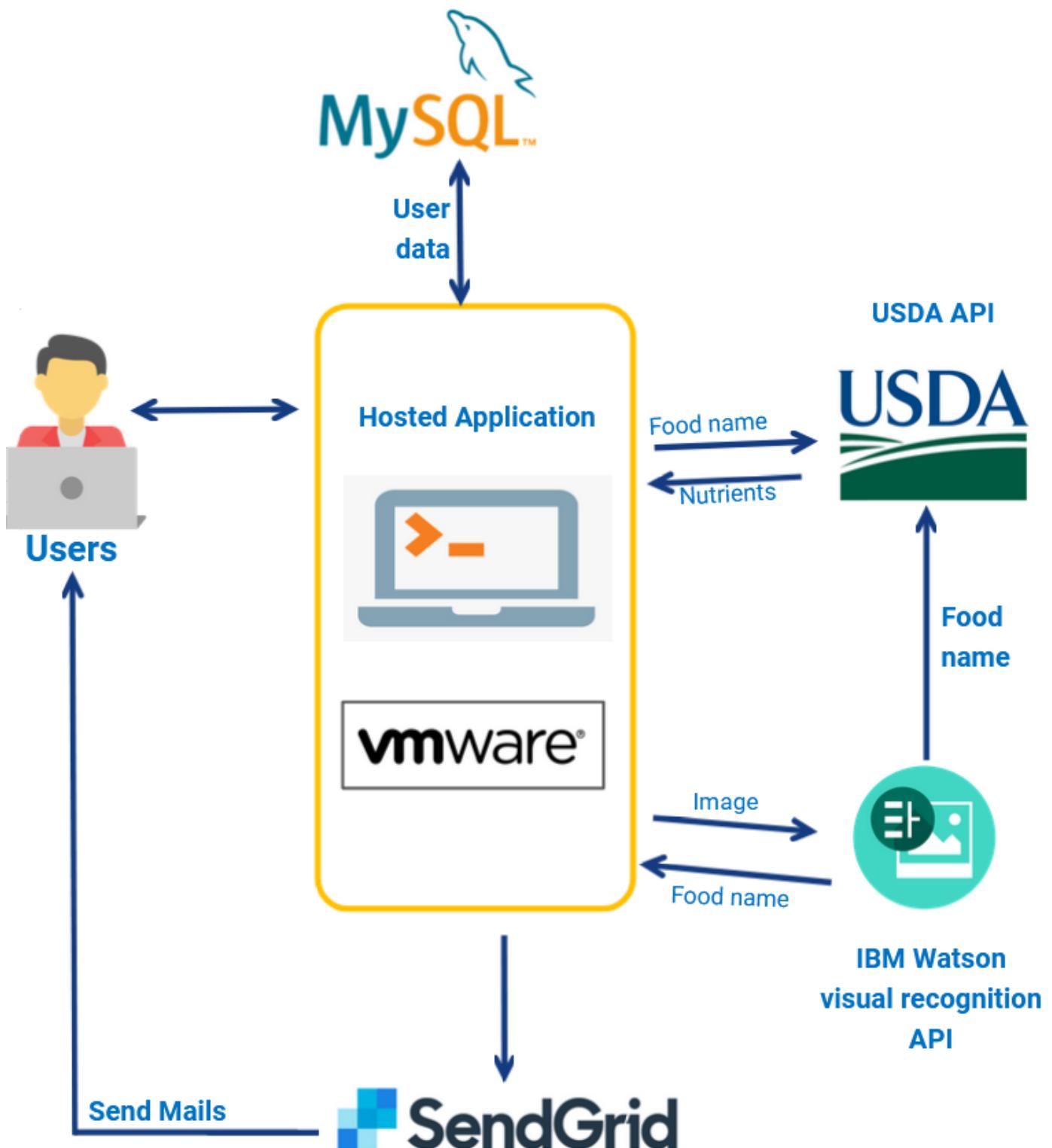
5

OneDrive  
Screenshot saved  
Action history  
The screenshot was saved to OneDrive settings to activate it.

6 B

### 3.THEORITICAL ANALYSIS

#### 3.1 Block diagram



## 3.2 Hardware/Software designing

This project aims at building a web App that automatically estimates food nutrients by the input image/name of the food. I have used the IBMs visual recognition-v3 Api to find the food by the given food image or the image URL.

Application then takes the processed data and then sends it to the USDA API which then estimates the nutrient values of the food and returns the nutrients and their nutrient value.Which we then process and store in the database if the user wants to enter.

I have used python for programming and HTML, CSS, JS for designing pages And SendGrid for email services.

## 3.3 Other Features

With all the above factors I have included some more services that would be useful to the user.some of these are listed below.

- A demo service where the user can just enter the food name and the web app will tell the nutrients.This can be accessed without the user registration whereas other pages can be accessed only after the user registration.

Welcome To Prajwal's

# Nutrition Assistant

Here you can also enter the food image/ food url/ food name that you want to find out. We then process and give you the food details. Hence can find about your healthy diet.

[Contact Us](#) [Food Ingredients](#)

*fig : User enter the food name in the Home page.*

Waiting for localhost...

Activate Windows  
Go to Settings to activate W

This is Just a Demo service for more services do register.  
!!!!!! scroll down !!!!!!

The entered food is PIZZA

Ingredients

Nutrition	Nutrition Value
Vitamin D (D2 + D3), International Units	0.0 IU
Protein	10.2 G
Total lipid	

Activate Windows  
Go to Settings to activate Windows.

fig : Output shown to the user.

- I have added a page COVID PRECATIONS.where user can get the information about the nutrients to consume in this pandemic according to the AYUSH Ministry.

This is a difficult time of Covid pandemic

## We must take care of our health

We need to follow all the guidelines provided by the WHO and the government.

We must maintain a good health in order to face the diseases. Increasing the immunity of our body is in our hands.It can be achived by following a proper nutritional diet.

Redirect to WHO page

These are the steps to increase the immunity. NOT TREATMENT FOR COVID 19

According to the  
Ministry of AYUSH

Recommended Measures

Activate Windows  
Go to Settings to activate Windows.

fig : A screen shoot from Covid precaution page.

- I have added a ABOUT US page which gives information about our webpage. NUTRIENT page gives information about the nutrient details.

## FOOD NUTRIENTS

### Nutrients

Nutrients are important to our body. It is very important to know the amount of nutrients that we consume. Excess intake may harm us. Less intake may also damage our body. It is very important to consume them in a limited manner.



Activate Windows  
Go to Settings to activate Windows.

fig : 'Nutrients details' from home page

## ABOUT US

We provide you the information based on the food input. You can check the food contents by uploading the food image/ image URL/ food name. We also provide the service to track your daily food intake and track the Nutrition intake. You can then view your total nutrient consumption per day or week.

[READ MORE](#)



Activate Windows

fig : 'About Us' from home page

- I have added the CONTACT US page from where the user can enter the Queries.

## CONTACT US

The image shows a contact form titled "CONTACT US". It features four input fields: "Your Name", "Email", "Phone Number", and "Message". Below these fields is a green "SEND" button. The form is set against a background of colorful, abstract shapes.

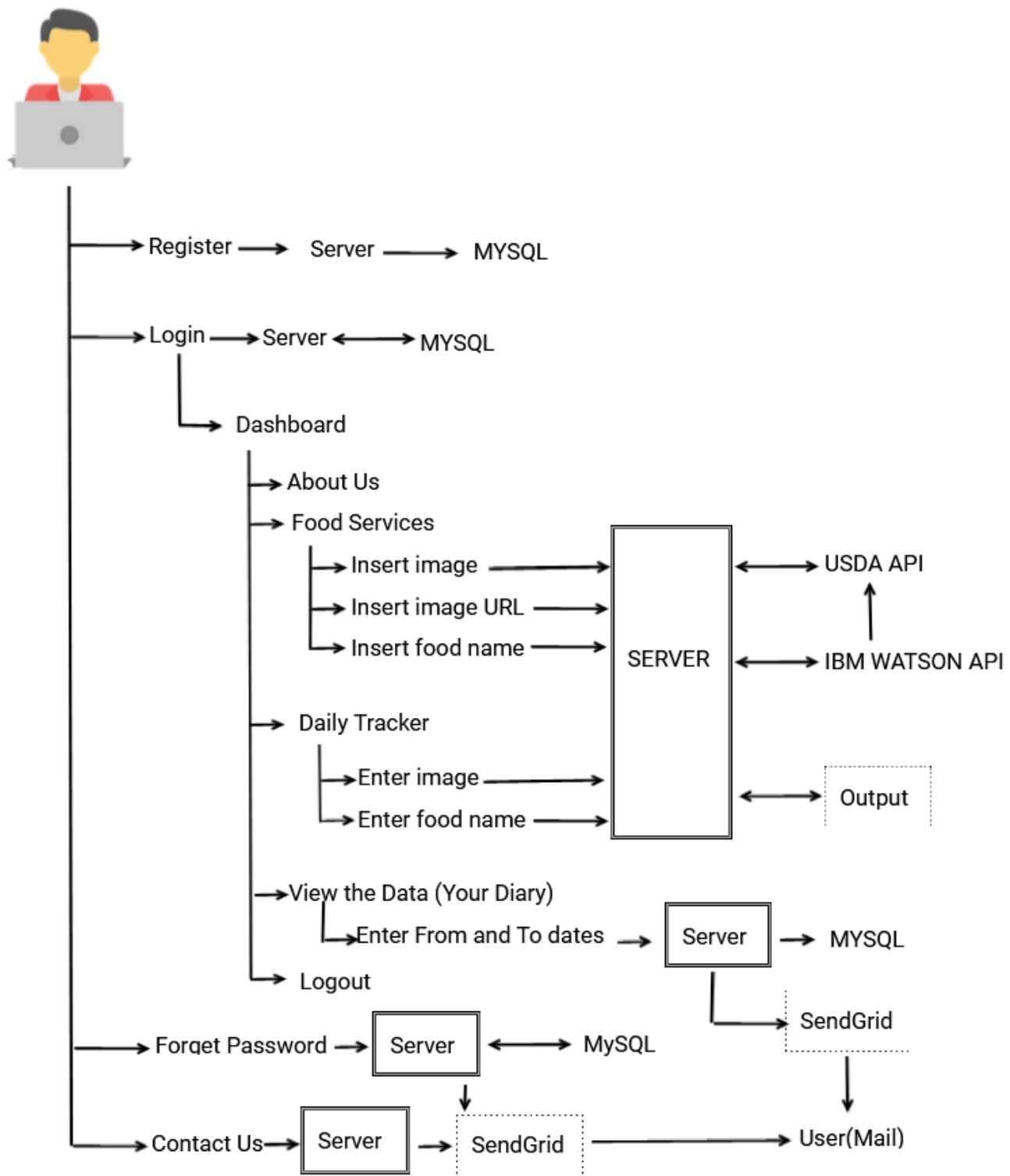
- I have added the email services using send grid. which sends the email to the user.the following are the email services.
  - As soon the user gets registered he will receive the mail.
  - If the user has forgotten the credentials he can get the user id and password to his mail.
  - Whenever the user watches his calorie consumption he get the nutrient details in his mail.
  - If the user uses our contact us page he gets the mail.

## 4. EXPERIMENTAL INVESTIGATIONS

While analyzing the problem , I found that as people in their busy life can't track the nutrients they consume, and can't find the nutrients of the food.Because it impacts badly on their health.

Hence I developed a web app which could track the food the user consumes and store the information and deliver the nutrient values to the user where he could make changes in the food habits.This app acts as a Nutrient assistant as well as nutrient tracker. even they can just find the nutrient values without entering the data into their dairy.

## 5. FLOWCHART



## 6. RESULT

This web app provides the food details if the food image/ URL/ Name is entered. It provides the nutrients involved in it and also the nutrient value.

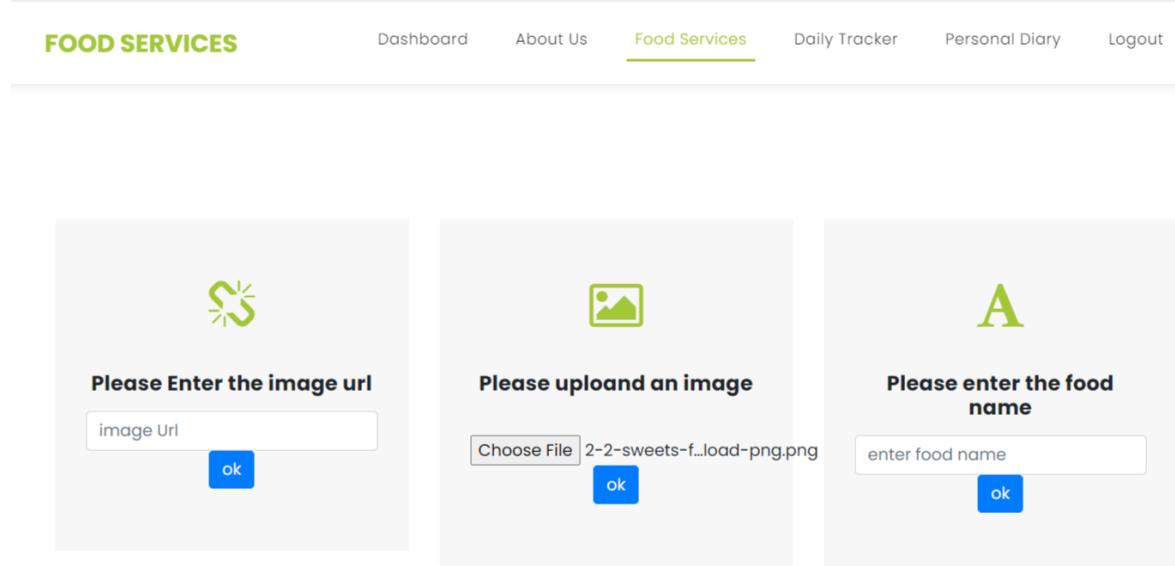


fig : web page to select the service image URL/ food image /food name.

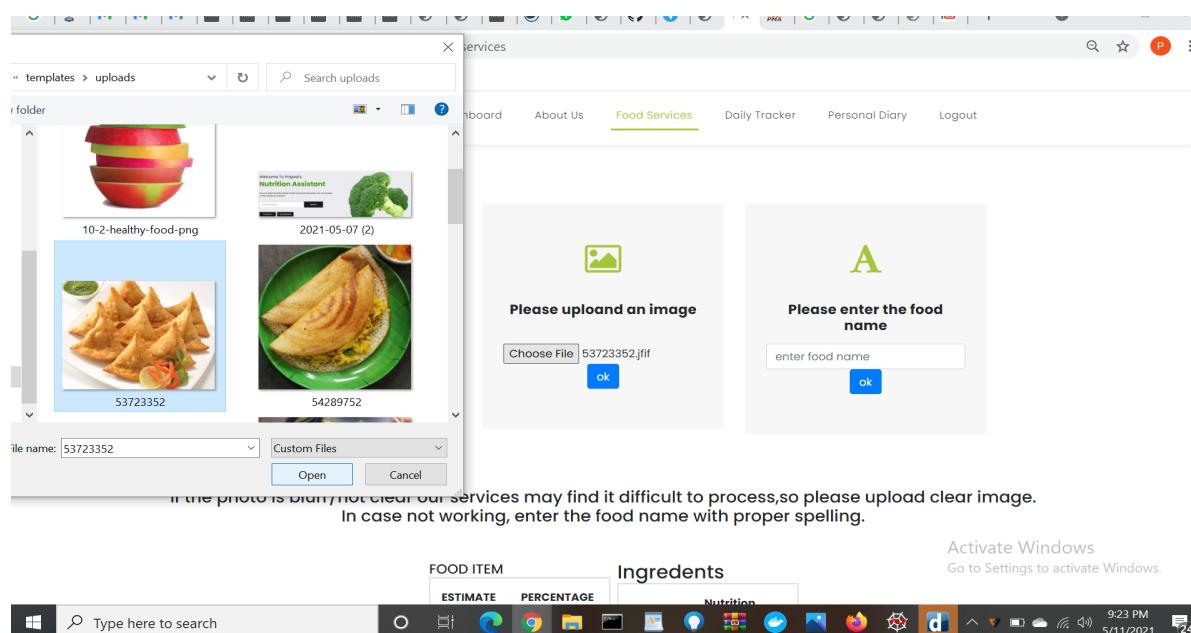


fig : Web page to choose the image

The screenshot shows two main sections. On the left, under 'FOOD SERVICES', there is a table titled 'FOOD ITEM' with columns 'ESTIMATE' and 'PERCENTAGE'. It lists three items: 'samosa' (0.9961227178573608), 'salsa' (0.9914050102233887), and 'sauce' (0.9837049841880798). Below this table, a message says 'Your entered food is samosa' with a value of '--'. On the right, under 'Food Services', there is a table titled 'Ingredients' with columns 'Nutrition' and 'Nutrition Value'. It lists various nutrients and their values: Protein (11.8 G), Total lipid (fat) (7.06 G), Carbohydrate, by difference (9.41 G), Energy (153 KCAL), Sugars, total including NLEA (2.35 G), Fiber, total dietary (2.4 G), Calcium, Ca (24.0 MG), Iron, Fe (1.27 MG), Sodium, Na (553 MG), and Vitamin A, IU (353 IU).

*fig : Showing the output of the food entered*

- Our another service provides the input of aggregate values of the nutrient consumed, as per the user requirements.

The screenshot shows the 'DAILY FOOD TRACKER' page. At the top, there are navigation links: Dashboard, About Us, Food Services, **Daily Tracker**, Personal Diary, and Logout. The main area is divided into two sections. The left section, titled 'To upload an image', contains fields for 'Your username' (with placeholder 'Enter Your username'), 'Your password' (with placeholder 'Enter Your Password'), 'Enter date' (with placeholder 'mm/dd/yyyy' and a calendar icon), 'Enter Time' (with a time picker), a file input field 'Choose File' with placeholder 'No file chosen', and a 'ok' button. The right section, titled 'To enter the food name', contains fields for 'Your username' (placeholder 'Enter Your username'), 'Your password' (placeholder 'Enter Your Password'), 'Enter date' (placeholder '05/12/2021' and a calendar icon), 'Enter Time' (placeholder '05:49 PM' and a time picker), a text input field containing 'rice', and an 'ok' button. At the bottom right, there are links 'Activate W' and 'Go to Settings'.

**Click here to submit the data**

*fig : Daily tracker page asking the user to enter the data.*

**Our Services** Use any ONE of these 2

We need to keep your data secured so ensure to enter user name and password every time you enter the food details

Food you had is = RICE

Click here to submit the data

**Submit**

fig : Web page asking the user to submit the data to database

**YOUR DIARY**

Dashboard    About Us    Food Services    Daily Tracker    **Personal Diary**    Logout

**I track your data~Select the dates that you desire to view**

We need to keep your data secured so ensure to enter user name and password every time

**Enter the details find your data**

Your username: pranav

Your password: .....

Enter from date: 05/05/2021

Enter to date: 05/10/2021

**ok**

fig : Diary page asking the user to enter the dates he wan to see he information

DASHBOARD	ABOUT US	FOOD SERVICES	DAILY TRACKER	PERSONAL DIARY	LOGOUT												
<b>Total Nutrients consumed</b>																	
Protein(g) lipid(g) Carbohydrate(g) Energy(kcal) Sugars(g) Fiber(g) Calcium(mg) Iron(mg) Sodium(mg) Vitamin A(iu) Vitamin C(iu) Cholesterol(mg) Fatty acids trans(g) Fatty acids saturated(g)																	
88.19	65.27	313.0	4673.0	58.28	25.74	0.72	22.1	1488.0	918.82	4943.0	2009.0	16.7	167.0				
<b>Your data</b>																	
Id	Date	Time	Food	Protein(g)	lipid(g)	Carbohydrate(g)	Energy(kcal)	Sugars(g)	Iron(mg)	Sodium(mg)	Vitamin A(iu)	Vitamin C(iu)	Cholesterol(mg)	Fatty acids trans(g)	Fatty acids saturated(g)	Calcium(mg)	P
2021-05-05	17	16:46	PIZZA	10.2	10.8	28.0	242.0	1.27	1.9	127.0	127.0	669.0	0.0	0.0	22.0	0.0	5

fig : Display page showing the aggregate details of the user food nutrients

Food Details & Nutrient																
Date	Time	Food Item	Calories	Fat	Carbohydrates	Protein	Sodium	Total Fat	Total Carbohydrates	Total Protein	Total Sodium	Total Carbohydrates	Total Protein	Total Sodium	Total Fat	
2021-17 05-05	16:46	PIZZA	10.2	10.8	28.0	242.0	1.27	1.9	127.0	127.0	669.0	0.0	0.0	22.0	0.0	5.1
2021-22 05-07	02:17	SAMOSA SEASONED WHOLE BLEND, SAMOSA	11.8	7.06	9.41	153.0	2.35	2.4	24.0	24.0	553.0	353.0	2.8	41.0	0.0	2.35
2021-23 05-07	22:54	WHOLE BLEND, SAMOSA	11.8	7.06	9.41	153.0	2.35	2.4	24.0	24.0	553.0	353.0	2.8	41.0	0.0	2.35
2021-24 05-07	Food you had is = 22:56	pizza	11.4	9.69	33.3	1110.0	3.58	2.3	188.0	2.48	598.0	358.0	1.4	17.0	0.241	4.46
2021-25 05-07	Food you had is = 23:02	Milk shakes, thick vanilla	3.86	3.03	17.8	112.0	17.8	0.0	146.0	0.1	95.0	91.0	0.0	12.0	0.0	1.89
2021-27 05-07	Food you had is = 23:32	PIZZA	11.4	9.69	33.3	1110.0	3.58	2.3	188.0	2.48	598.0	358.0	1.4	17.0	0.241	4.46
2021-28 05-07	23:54	PIZZA	11.4	9.69	33.3	1110.0	3.58	2.3	188.0	188.0	598.0	358.0	1.4	17.0	0.241	4.46
2021-29 05-08	12:52	RICE	3.47	2.43	26.4	139.0	1.39	1.4	28.0	1.88	465.0	69.0	2.5	0.0	0.0	0.0
2021-30 05-08	15:41	SUGAR	6.19	2.3	85.8	344.0	17.8	3.8	535.0	535.0	13.0	0.0	1.3	0.0	0.0	0.143
2021-32 05-10	02:40	RICE	3.47	2.43	26.4	139.0	1.39	1.4	28.0	1.88	465.0	69.0	2.5	0.0	0.0	0.0
2021-33 05-10	02:41	pea soup	3.2	1.09	9.88	61.0	3.19	1.9	12.0	12.0	336.0	0.0	0.6	0.0	0.0	0.524

fig : Display of user food details

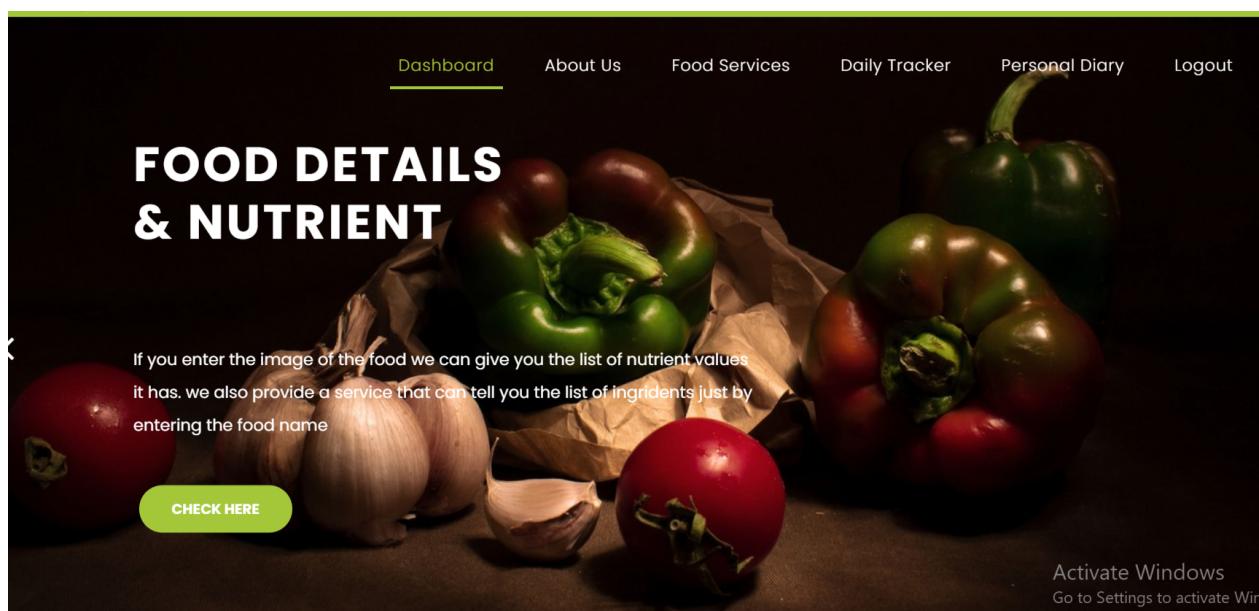


fig : Dashboard of the web app

Search mail ?

1 of 7

Prajwal's Nutrition Assistant

prajwalsassistant@gmail.com via sendgrid.net to me 5:47 PM (3 minutes ago) ☆



Hello pranav,

You have consumed the following nutrients From - 2021-05-05 To-2021-05-10,

Protein 88.19g,  
lipid 65.27g,  
Carbohydrate 313.0g,  
Energy 4673.0kcal,  
Sugars 58.28g,  
Fiber 25.74g,  
Calcium 0.72mg,  
Iron 22.1mg,  
Sodium 1488.0mg,  
Vitamin\_A 918.82iu,  
Vitamin\_C 4943.0iu,  
Cholesterol 2009.0mg,  
Fatty\_acids\_trans 16.7g,  
Fatty\_acids\_saturated 167.0g

We provide you the information based on the food input. You can check the food contents by uploading the food image/image URL/food name.  
We also provide the service to track your daily food intake and track the Nutrition intake. you can then view your total nutrient consumption per day or week.



Activate Windows  
Go to Settings to activate V

For any query, message to this mail  
or  
Visit our contact us page on website



Activate Windows

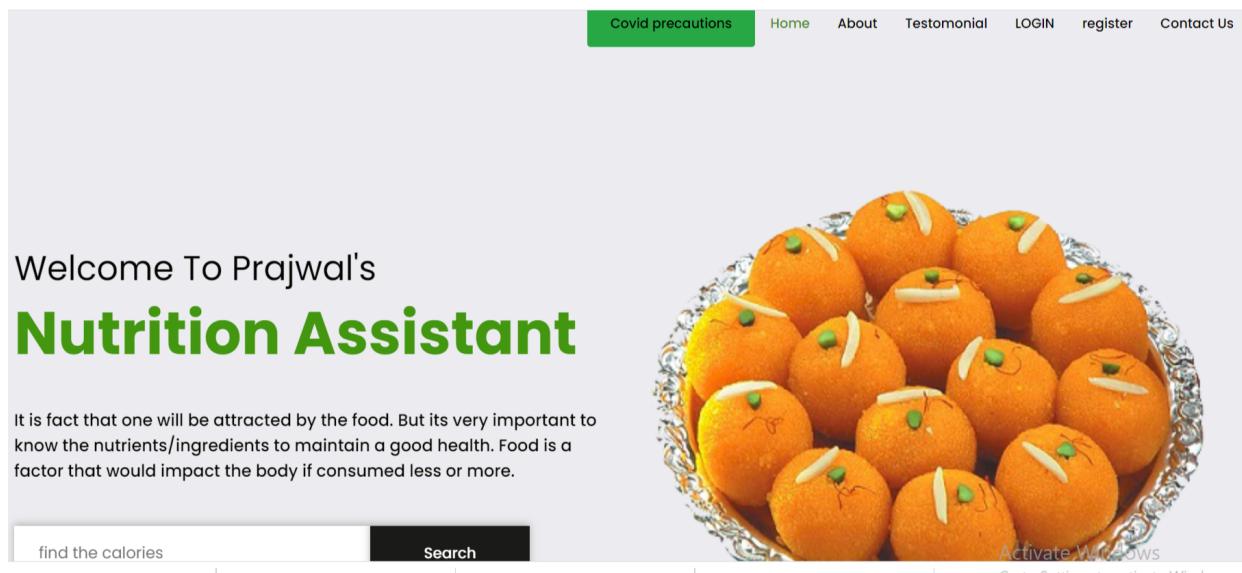
fig : Mail received by the app regarding the nutrient information

## 7. ADVANTAGES AND DISADVANTAGES

### 7.1 Advantage

Our web app uses the food image given by the user then processes that to the nutrient values of the food then displays to the user. The user can enter the food details that he consumes daily based on time and date of consumption. The user can then go to the diary page and view the data entered by him between any particular dates. He can also view the aggregate nutrient details.

This application can be used on the recommendation of the doctor or the hospitals where one can track all the data that the patient consumed to track the nutrient details of the patient.



*fig : Home page.*

## 7.2 Disadvantages

As the food around the world is very diverse, it is difficult to recognize some of the local foods. Both the APIs are having a very wide range of food images. But its difficult to find all the food images.

In order to overcome the above disadvantages I have given the field where one can directly enter the food name. We then process the name to the nutrient values.

## 8. APPLICATIONS

This application has the following applications.

- The uploaded food image is processed and then its the nutrient value is displayed.
- The URL/The food name can also be given as food input.
- The user can track the daily intake of food
- User can track the nutrient values of the food that He consume.
- User can store the data in his table in the database.
- He can access the data whenever he wishes.
- Users can watch their aggregate nutrients consumed and also received the mail of the aggregate report.
- This application can be recommended by the doctor/ hospitals who wishes to track the food/nutrient consumption of the patient.

## 9. CONCLUSION

As there is improvement in people's standards of living, there is neglect in the proper balanced diet and this is reflective of the risks to people's health. People need to control their daily calorie intake by eating healthier foods.

My web app keeps the record of what the user eat and displays the nutrients he consumed which makes the user to find what nutrients he consumed in what amounts.

## 10. FUTURE SCOPE

As people are in this fast and busy world, it becomes important to track the food details. I have planned to add a feature where the user can set the goal of taking the nutrients per day / week. then our app tells whether he has reached the goal.

I will also include the service where the user can update his weight and height based on which our app gives the Nutrients data that one needs to consume.

I have also planned to link the daily trackers in the mobiles like Google fit, from where we can get the calories lost and our web app give the data of nutrients to be consumed.

## 11. BIBILOGRAPHY

- I have used IBM Watson Visual recognition v3 API for Food Model for food recognition. Where it takes the food image/URL as input and give the food name as output.
- USDA API uses the food name given and then processes it to the nutrient list.

## APPENDIX

Source code: Github link:

<https://github.com/smartinternz02/SPS-9740-Nutrition-Assistant-Application>

Web application URL:

<http://prajwalsnutritionassistant.apps.pcfdev.in/>