

A
PROJECT REPORT
ON
Personal Nutritionist

Submitted by

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**For Partial Fulfillment of the Requirements for Bachelor of Technology in
Information Technology**

Guided by
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AY: 2021-22, Semester I

CERTIFICATE

This is to certify that the project work entitled **Personal nutritionist** has been successfully carried out by **Om Patel (18IT420), Vishvrajsinh Rathod (18IT437) and Yash Joshi (18IT442)** for the subject **Project I (4IT31)** during the academic year 2021-22, Semester-I for partial fulfilment of Bachelor of Technology in Information Technology. The work carried out during the semester is satisfactory.

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Acknowledgement:

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Abstract:

Personal Nutritionist as the name suggests, the system can act as your personal nutritionist and give you the information about food and nutrition gain from it. You just have to enter your body measures and weight and it will give you a healthy diet plan recipes from the food from your liking and some exercise plan accordingly everything that's done will be online whilethis system can be used also by nutritionists gaining a lot of information and help in manyways.

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Chapter 1: Introduction

1.1 Brief overview of project:

In our hectic daily life, we should take care of our health by eating proper food which contains enough nutrition that our body needs. Our website provides different kind of food suggestions to users and gives them access to search different kinds of food and food recipes, user can also subscribe nutritionists who can help them in their diet by suggesting diet plan accordingly, we also provide nutrition value of foods so that user can choose or main their diet accordingly.

1.2 Objective:

Our website offers credible information to help you make healthful eating choices. Helping people lose weight, maintain a healthy weight, and prevent chronic disease by improving dietary habits requires providing education about food and nutrition, assuring access to healthier food options, and promoting the desire and ability to become physically active.

1.3 Scope:

It brings convenience to user as they do not have to leave home and only need to browse website online, especially subscribing famous nutritionists whom they do not have to meet physically.

Website contains many food recipes with their nutrition values and recipes of that foods so user can make that food dish on their own with almost same nutrition values. User can read blogs posted by Nutritionists and can learn more about how to maintain their health using different diet plans.

After filling their profile details and choosing diet plans users can get assistant on what to it and their daily food value reminders which will be convenient for the users and by providing assistance nutritionists can gain more acknowledgement.

1.4 Project Modules:

Admin:

- Add/Delete User
- Add/Delete Nutritionist

User:

- Set Profile
- Dash Board
 - Daily Progress
 - Diet plans
 - Saved blogs
 - Subscribed Nutritionists
 - Friends
- Food
- Recipes
- View Blogs

Nutritionist:

- Set Profile
- Dash Board
- Diet plan and food recipes.
- Create and post Blogs

1.5 Project Hardware/Software requirements:

Software Requirements:

- Windows 7 or higher
- Microsoft SQL Server
- Visual Studio

Hardware Components:

- Processor – Core i3
- Hard Disk – 160 GB
- Memory – 1GB RAM
- Monitor

Chapter 2: Literature review

2.1 NUTRITION [1]:

What is nutrition, and why does it matter?

- Nutrition is the study of nutrients in food, how the body uses them, and the relationship between diet, health, and disease.
- Nutritionists use ideas from molecular biology, biochemistry, and genetics to understand how nutrients affect the human body.
- Nutrition also focuses on how people can use dietary choices to reduce the risk of disease, what happens if a person has too much or too little of a nutrient, and how allergies work.
- Nutrients provide nourishment. Proteins, carbohydrates, fat, vitamins, minerals, fiber, and water are all nutrients. If people do not have the right balance of nutrients in their diet, their risk of developing certain health conditions increases.
- **Types of nutrition:**
 - **Macronutrients:**
 - Consuming the right balance of nutrients can help maintain a healthful lifestyle. Macronutrients are nutrients that people need in relatively large quantities.
 - **Carbohydrates:**
 - Sugar, starch, and fiber are types of carbohydrates.
 - Sugars are simple carbs. The body quickly breaks down and absorbs sugars and processed starch. They can provide rapid energy, but they do not leave a person feeling full. They can

also cause a spike in blood sugar levels. Frequent sugar spikes increase the risk of type 2 diabetes and its complications.

- Fiber is also a carbohydrate. The body breaks down some types of fiber and uses them for energy; others are metabolized by gut bacteria, while other types pass through the body.

➤ **Proteins:**

- Proteins consist of amino acids, which are organic compounds that occur naturally.
- There are 20 amino acids. Some of these are essential Trusted Source, which means people need to obtain them from food. The body can make the others.

➤ **Vitamins:**

- Eating a variety of healthful foods can provide the body with different vitamins.
- People need small amounts of various vitamins. Some of these, such as vitamin C, are also antioxidants. This means they help protect cells from damage by removing toxic molecules, known as free radicals, from the body.

Why is nutrition important for us?

- Nutrition plays a great role in our daily life. The food or liquids affect our body and health because each food or liquid contain particular nutrition which is very necessary for our physical and mental growth.
- A particular level of any particular nutrition is essential for our body. So we should know that what food we have to take, how much and what type of nutrition contain a particular food.
- Whenever we take any food or nourishing liquids, our body digests and absorbs the simple but essential minerals, vitamins, fats, proteins, carbohydrates, fats and water from these food or nourishing liquids and converts it into the bloodstream and energy that help our body to grow and keep it healthy.
- it is very important that we should be more aware of the foods or liquids whatever we take in our daily life. A large number of diseases occur only due to wrong diet. Some certain diet may itself cause some disease or alter the course of a known disorder such as diabetes, heart or kidney disease.

2.2 NUTRITIONIST [2]:

Definition:

- A nutritionist is a person who advises others on matters of food and nutrition and their impacts on health. Some people specialize in particular areas, such as sports nutrition, public health, or animal nutrition, among other disciplines.

Role of nutritionist:

- Proper nutrition is essential to healthy living and overall well-being. A nutritionist can play an important role in your health by evaluating your diet and offering you personalized advice.
- Based on your health goals or medical needs, the nutritionist can make recommendations and put together meal plans. Nutritionists work in many settings, including hospitals, schools, health departments and private practices.
- It is difficult to stay knowledgeable on the latest diet trends. If you are trying to lose weight or develop healthy eating habits, a nutritionist can provide guidance on how to safely and effectively reach your goals.
- Nutritionists develop meals plans, educate on portion control and are qualified to prescribe special diets for the treatment or prevention of diseases, such as heart disease and diabetes.

2.3 NUTRITION API [3]:

What it does?

- It fetches the data from the food page and gives the food image and nutrition's according to the input food

Components:

- **Nutrition & Recipe Analysis:**
 - It retrieves nutrition information on up to 258 nutrient parameters with access to over 800,000 generic, branded foods and recipes from its database.

- **Allergen Information:**

- It retrieves allergen information for foods in their database, or enrich your own database with allergens using our ingredient list Allergen Scanner.

- **Generate Food Labels:**

- Retrieve a compliant nutrition panel for foods or even your own recipes. Compatible regions.

2.4 SPOONCULAR RECIPE AND FOOD API [4]:

What it does?

- It fetches the recipes whole data like ingredients, recipes, nutrients, information.

How it does?

- **Search recipes:**

- We Search through hundreds of thousands of recipes using advanced filtering and ranking. This method combines searching by query, by ingredients, and by nutrients into one endpoint.

- **Search Recipes by Nutrients:**

- We can Find a set of recipes that adhere to the given nutritional limits. You may set limits for macronutrients (calories, protein, fat, and carbohydrate) and/or many micronutrients.

- **Get Recipe Information:**

- We can Use a recipe id to get full information about a recipe, such as ingredients, nutrition, diet and allergen information, etc.

- **Ingredient Search:**

- Search for simple whole foods (e.g., fruits, vegetables, nuts, grains, meat, fish, dairy etc.).

2.5 Food Safety and Standards Authority of India:

What is fssai?

- Food Safety and Standards Authority of India (FSSAI) is a statutory body established under the Ministry of Health & Family Welfare, Government of India. The FSSAI has been established under the Food Safety and Standards Act, 2006, which is a consolidating statute related to food safety and regulation in India.
- FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food safety.

2.6 BODY MASS INDEX [5]:

What is bmi?

- Body Mass Index (BMI) is a person's weight in kilograms divided by the square of height in meters. A high BMI can indicate high body fatness.
- BMI screens for weight categories that may lead to health problems, but it does not diagnose the body fatness or health of an individual.

Why is it important?

- Your BMI is a measurement that is a ratio of your weight and height. It's a good way to gauge whether your weight is in healthy proportion to your height. In fact, knowing your BMI can help you – and your GP – determine any health risks you may face if it's outside of the healthy range.
- Being overweight can lead to a range of chronic conditions including:
 - Type 2 Diabetes
 - High blood pressure
 - Heart or blood vessel problems

- Cardiovascular disease
- Musculoskeletal problems
- Being underweight can result in other like:
 - Risk of malnutrition
 - Osteoporosis
 - Anemia
- **How to calculate your BMI**
 - Simply divide your weight in kilograms by your height in meters squared.
 - For example, if you weigh 70kg and you are 185cm tall your BMI calculation will look like this:

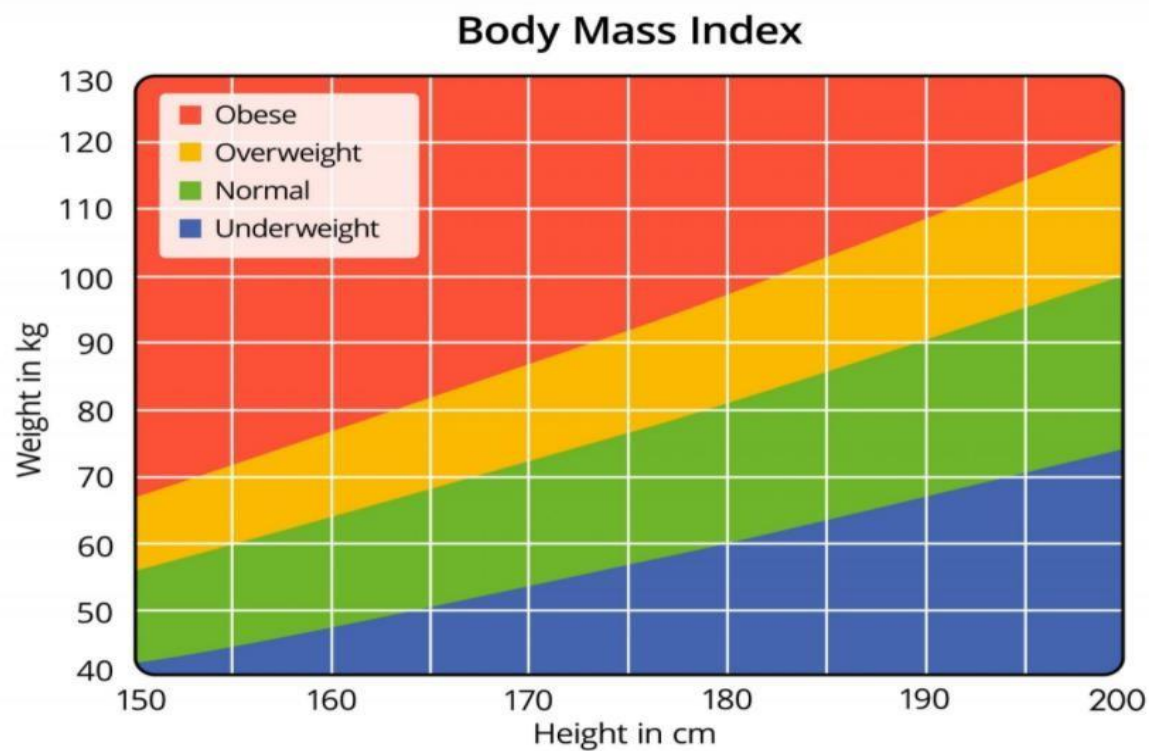


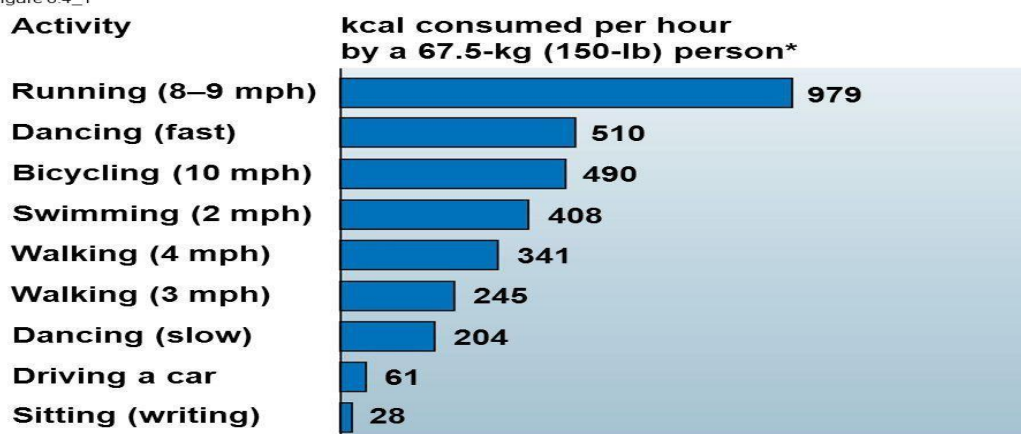
Figure 1

- **The BMI scale**
 - 18.5 to 24.9 = health
 - 25 to 29.9 = overweight
 - 30 and above = obese
 - 18.4 and under = underweight
- It's a good measure of your health, but not perfect
- While it may be a great guide to establishing the amount of body fat you carry, your BMI won't take into consideration your age, sex, ethnicity, or even muscle mass. It's also not appropriate in determining a healthy weight in the elderly, children, pregnant women or even athletes.

2.7 CALARIES BURN:

- Running is the winner for most calories burned per hour. Stationary bicycling, jogging, and swimming are excellent options as well.
- HIIT exercises are also great for burning calories. After a HIIT workout, your body will continue to burn calories for up to 24 hours.

Figure 6.4_1



*Not including kcal needed for body maintenance

© 2012 Pearson Education, Inc.

Figure 2

Chapter 3: System Analysis & Design

3.1 Comparison of Existing Applications with your Project with merits and demerits:

1. Carb Manager:

- Carb Manager is the low carb tracker and macros counter for anyone on a low carb diet or keto diet.
- They've compiled nearly 1 million verified foods in their database, including brand name products and restaurant fare, and created a low carb diet lifestyle.

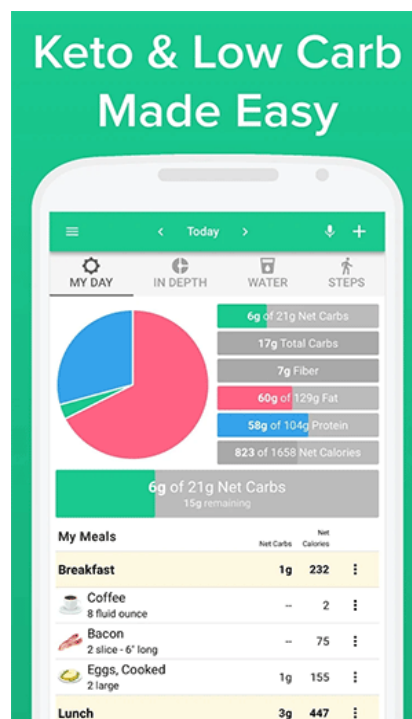


Figure 3

2. Create My Cookbook:

- With Create My Cookbook you can create your own physical cookbook with your own or your grandma's recipes. Next time the internet goes out you have a real book to open and cook something with, think about it.



Figure 4

3. Kitche:

- Kitche keeps track of your products and gives helpful reminders for food you have at home.
- It's make smart recipes based on food you have already bought.
- Kitche lets you filter recipes based on the food you have at home.
- To stop wasting your money & food.



Figure 5

Merits:

These applications whether only shows and records how much carbs or calories user has gained through his/her diet or lets user search and save recipes of different foods or lets them make list of food plan and save that data, when our website does more than just counting calories but also suggest appropriate diet plans according to their BMI, user can search appropriate recipes by applying many filters provided to them and lets them save blogs/recipes created and uploaded by nutritionists.

Demerits:

It shows accurate nutrition value that food contains while our website shows less accurate data because of slight variation value in our used food APIs. They are faster and has better data base servers by which they can utilize user data and suggest them their choices automatically.

3.2 Project Feasibility Study:

- **Feasibility Study:**

3.2.1. Technical Feasibility:

In this project technically it is possible for Customers to evaluate the diet plan by nutritionist (without being in physical contact with them). Customers get all kind of diet plan according to nutritionist. All this without visiting any nutritionist physically. The diet plan can be upgraded with account of customer's progress.

3.2.2. Operational Feasibility:

It is feasible for our project to make use of functions BMI (Body Mass Index) It is a measure to classify people under the following categories: underweight, normal weight, overweight and obese. It is the ratio of your weight in kilograms to the square of your height in meters. People with high BMI have too much body weight or body fat for their height.

3.2.3. Implementation Feasibility:

Implementing our project is very feasible as it is very user friendly, what it requires from us is to just connect few PCs in LAN and It brings convenience to user as they do not have to leave home and only need to browse website online, especially subscribing famous nutritionists whom they do not have to meet physically.

3.2.4. Economic Feasibility:

The system provides cost effective interface by considering less power consumption approach. It saves time and money for customer, Ex. Hiring a personal nutritionist and pay him accordingly but, in our case, customer just have to get information from our website and do the diet they suggested. No need to go to personal nutritionist physically every time.

3.2.5. Resource Feasibility:

It is also an essential part of a feasibility study. There will be no waste of time and Customer will gate their diet plan on website immediately and can follow as soon He/she can.

3.3 Project Timeline chart:

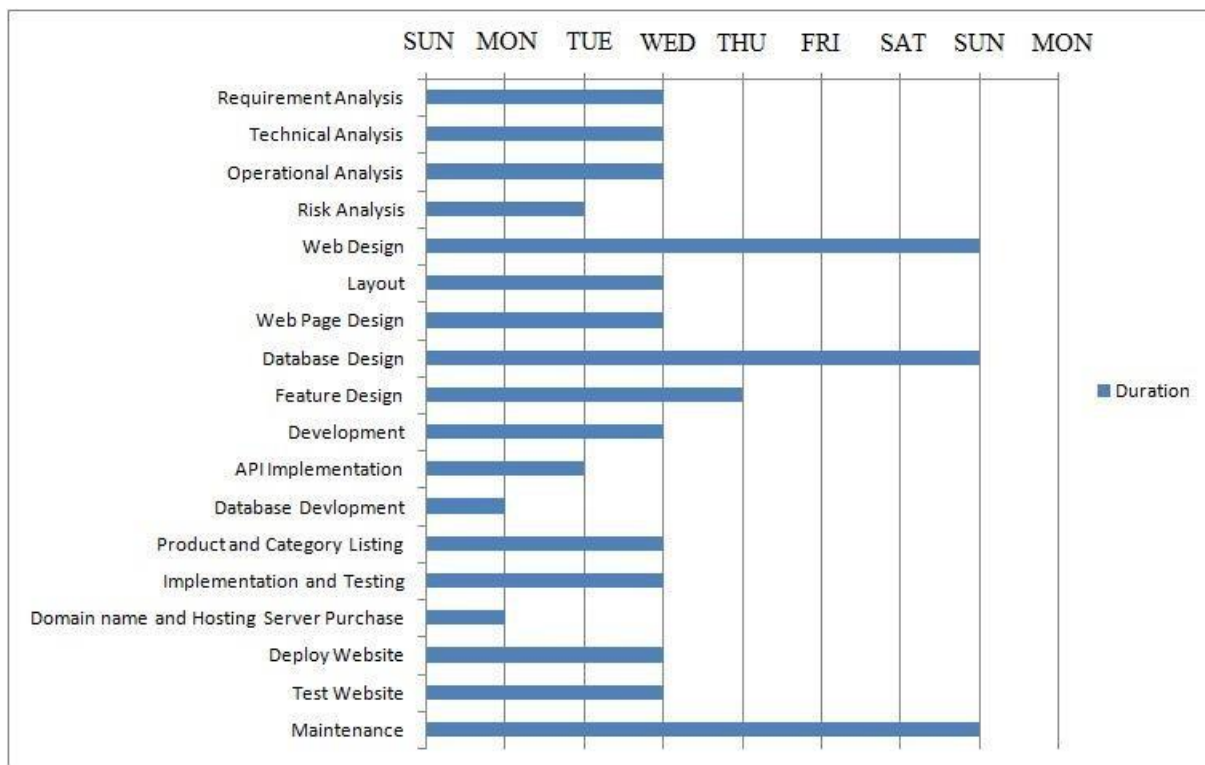


Figure 6

3.4 Detailed Modules Description:

3.4.1. User:

first user has to sign up into system if already sign up then they can login into system by just providing their mail and Password. After log in to system they can see the dashboard where they can see the sub module of user like Food, Recipes, blogs and about us.

Sub module of User:

3.4.2. Food:

In the food section user see the search bar where they can search about different foods and find how much calories, fat, protein, carbs, calcium, fiber it contains. And at the bottom side they also find out how they burn their calories by doing Yoga, Running, Gym, walking etc.

3.4.3. Recipes:

In the Recipes section user search about the recipes of some healthy foods, and in that one filter will be also provided by our system where user set the limit of calories, protein, fat etc. and then basis of that our system will provide the recipes.

3.4.4. Blogs:

In the blogs section user will see the different vlogs which uploaded by the nutritionist. If they like the blogs of nutritionist then they can subscribe their profile. Then they can see all the blogs of him and also see the diet plan given by them.

3.4.5. About us:

In the about us section user will see aim of our system and also see the front end and back-end team of our system.

3.4.6. Nutritionist:

first, they have to sign up into system if already sign up then they can login into system by just providing their mail and password. After log in to system they can see the dashboard where they can see the sub module of their like diet plans, blogs.

Sub module of Nutritionist:**3.4.7. Diet plans:**

In that section they can provide the diet plans to their subscriber with the use of information which will be taken from them. They will also provide one common diet plans and post it so as many as user will reach to him.

3.4.8. Blogs:

In that section they can create and post the blogs. They can create the blogs of diet plans, recipes etc. and post it in the system so as many as user will reach to them and subscribe their profile. They can also create blogs to provide the basic information of how to start or set the diet plans etc.

3.5 Project SRS :

3.5.1 USE CASE DIAGRAM:

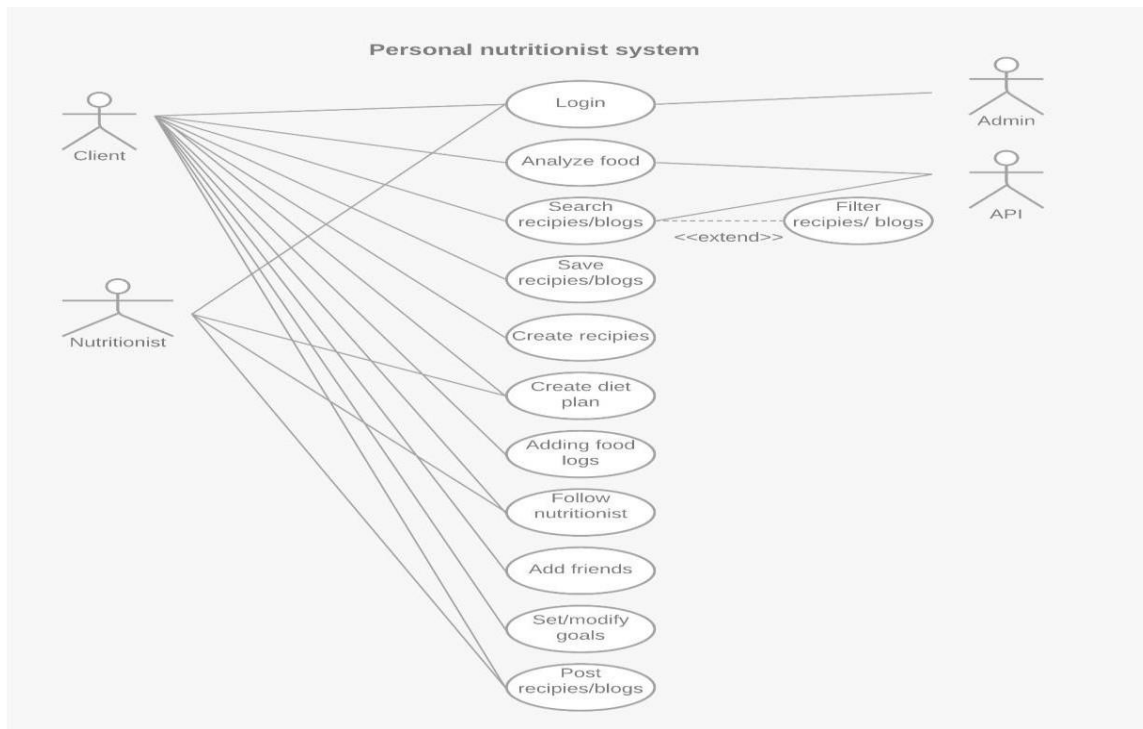


Figure 7

3.5.2 Data Flow Diagram:

- LEVEL 0 of DFD:

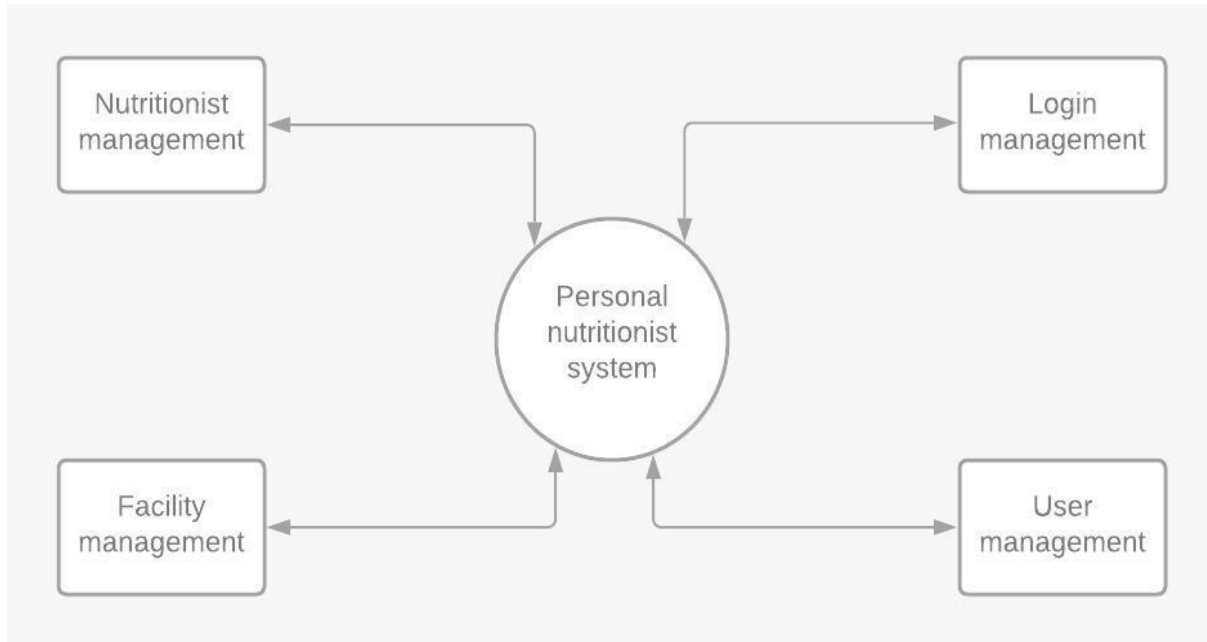


Figure 8

- **LEVEL 1 DFD:**

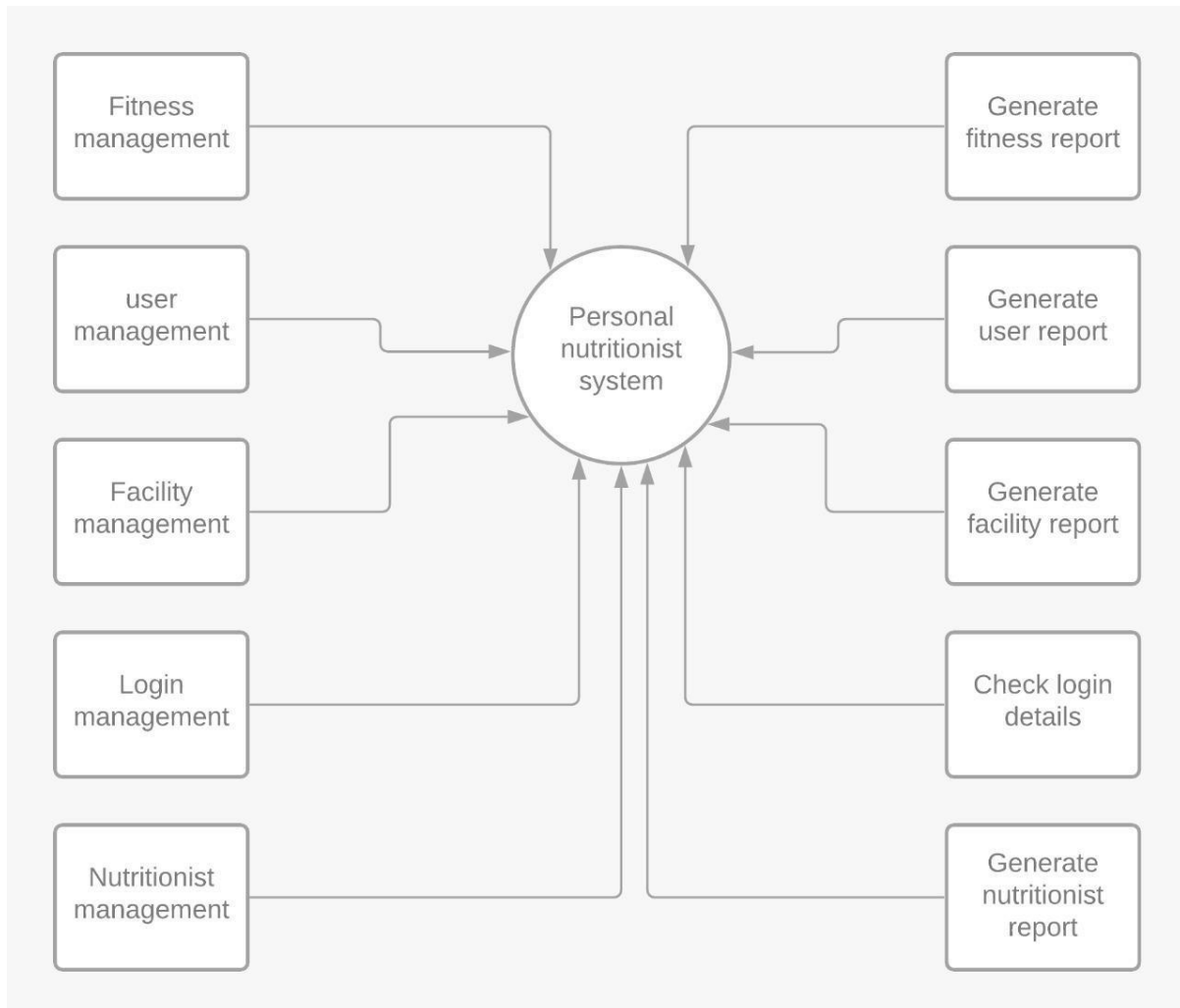


Figure 9

-LEVEL 2 DFD:

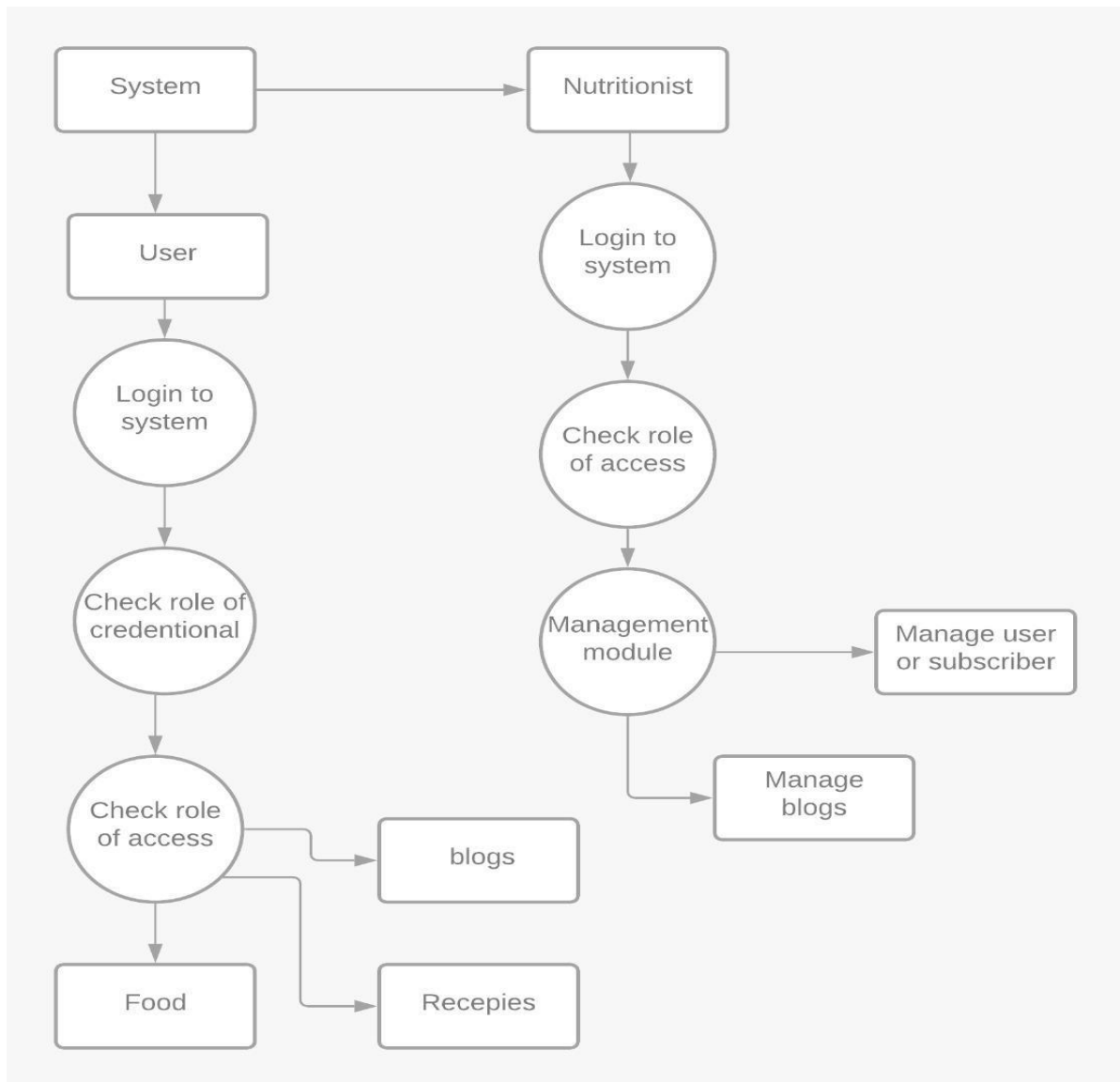
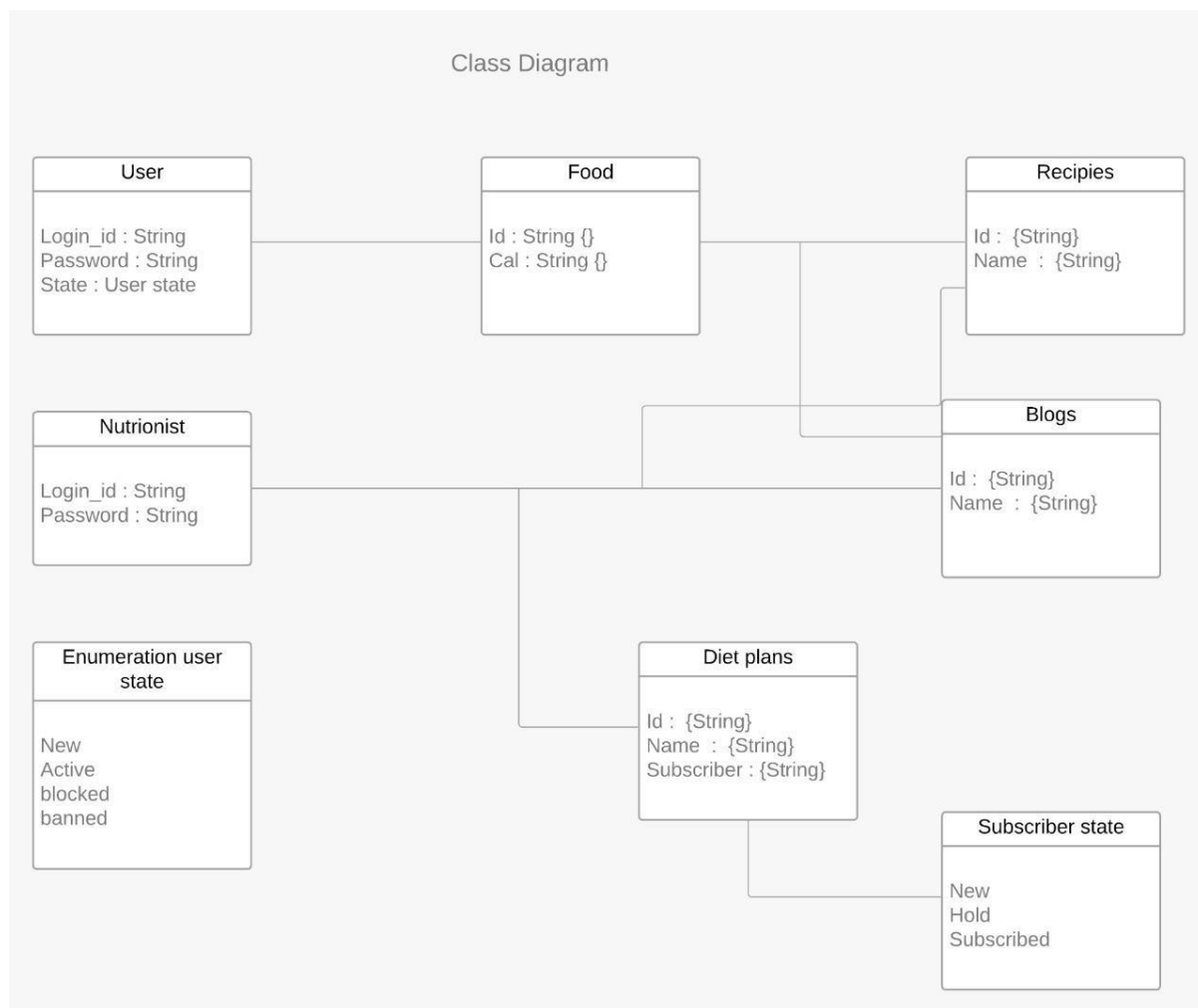
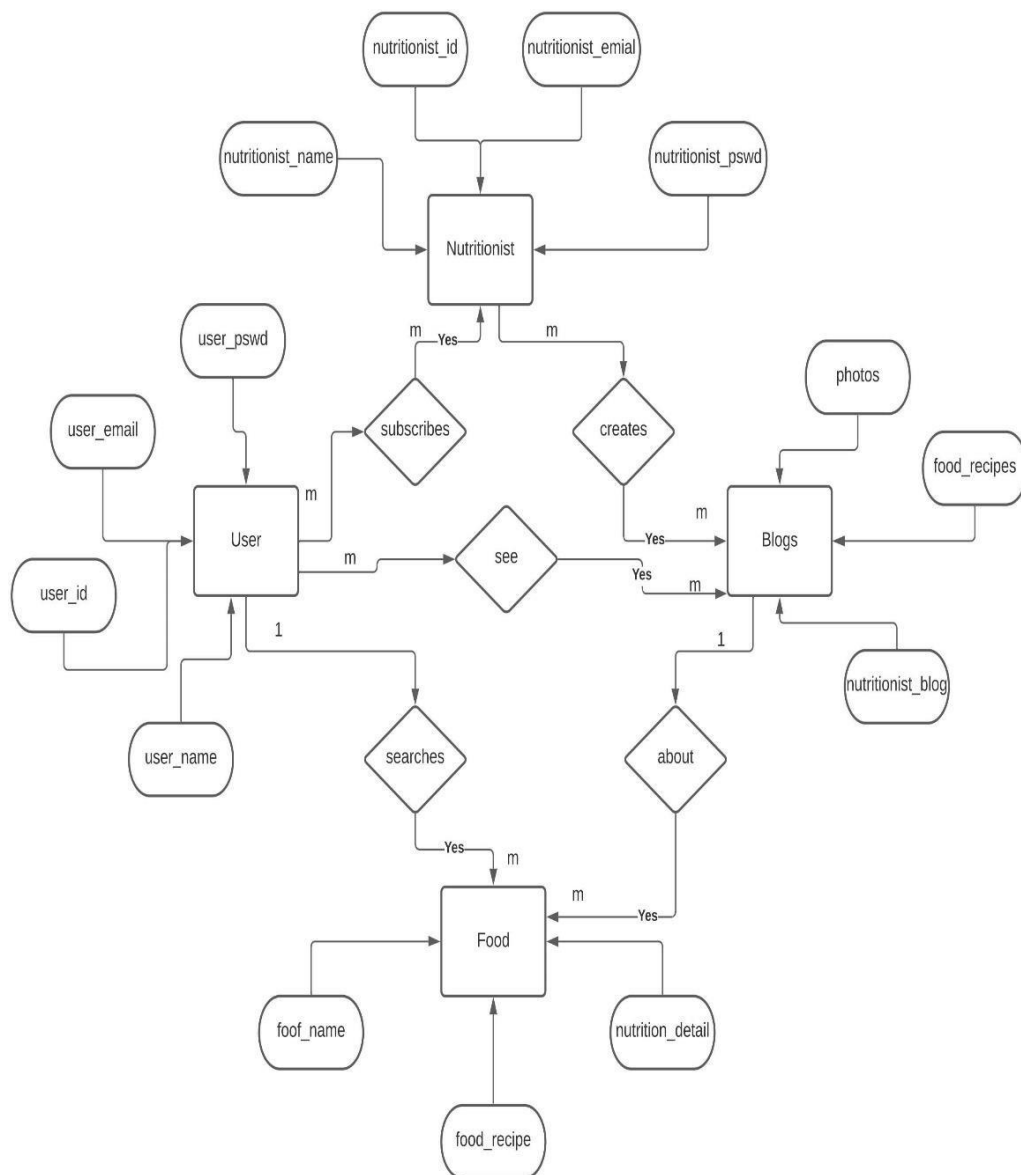
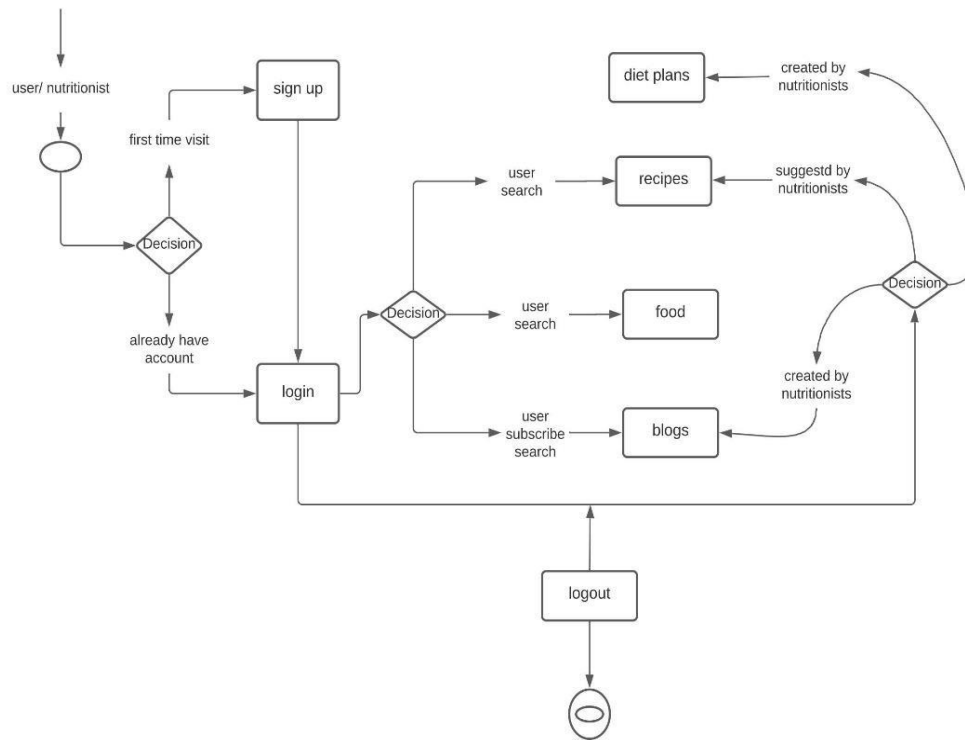


Figure 10

3.5.3 Class Diagram:**Figure 11**

3.5.4 Entity Relationship Diagram:**Figure 12**

3.5.5 State Diagram:**Figure 13**

3.6 Data Dictionary:

Database design and Normalization:

User Data:

No.	Field Name	Data Type	Constraints
1.	user_name	String	Not Null
2.	user_id	String	Primary key
3.	user_email	String	Not Null
4.	user_password	Password	Not Null
5.	Age	Number	Not Null
6.	Height	Number	Not Null
7.	weight	number	Not Null

Table 1

Nutritionist Data:

No.	Field Name	Data Type	Constraints
1.	nutritionist_name	String	Not Null
2.	nutritionist_id	String	Primary key
3.	nutritionist_email	String	Not Null
4.	nutritionist_password	Password	Not Null
5.	Qualification	String	Not Null

Table 2

Chapter 4: Implementation and Testing

4.1 User Interface and Snapshots:

4.1.1 Sign up module:

New register themselves in our website and creates their account in our data base. By entering their email id and password of this new account. There will be two different kinds of sign-ups, one for users and second for nutritionists. Because both the user and nutritionist will have a bit different UI and working mechanism.

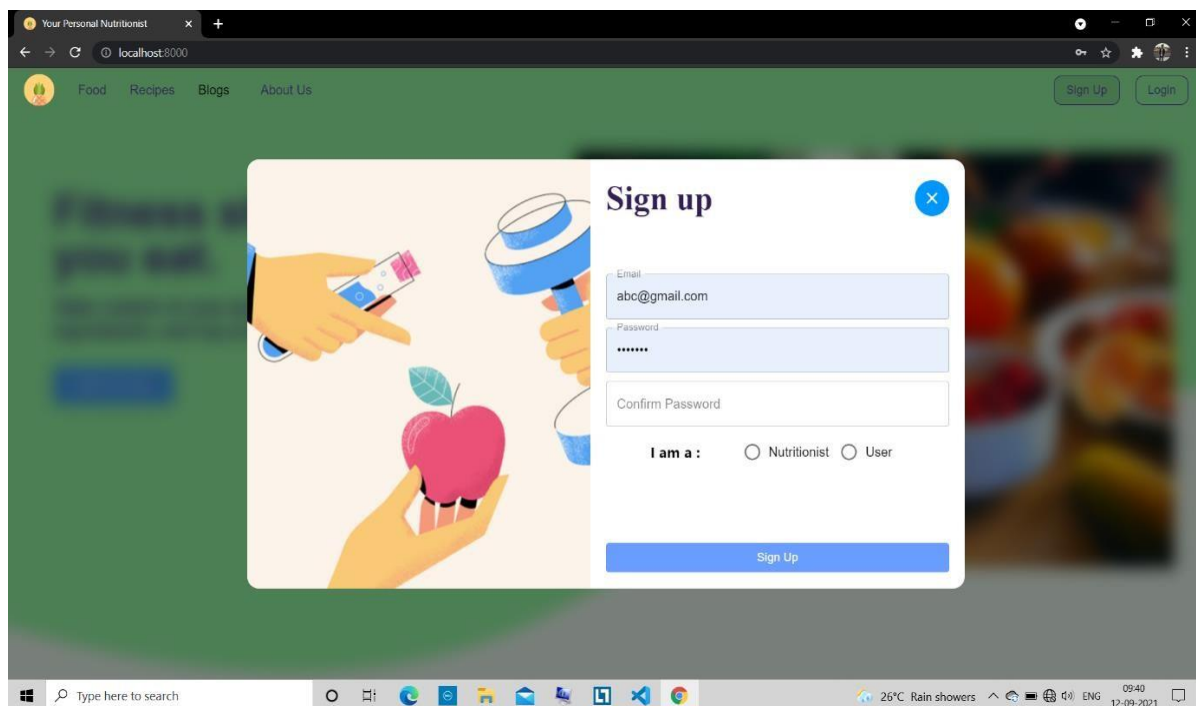


Figure 14

4.1.2 Login Page:

Once registered users/nutritionists' login through their account using their unique email id and password which they used during signup. If they enter wrong username or email id or password as input then error message will appear and will tell them enter correct input data.

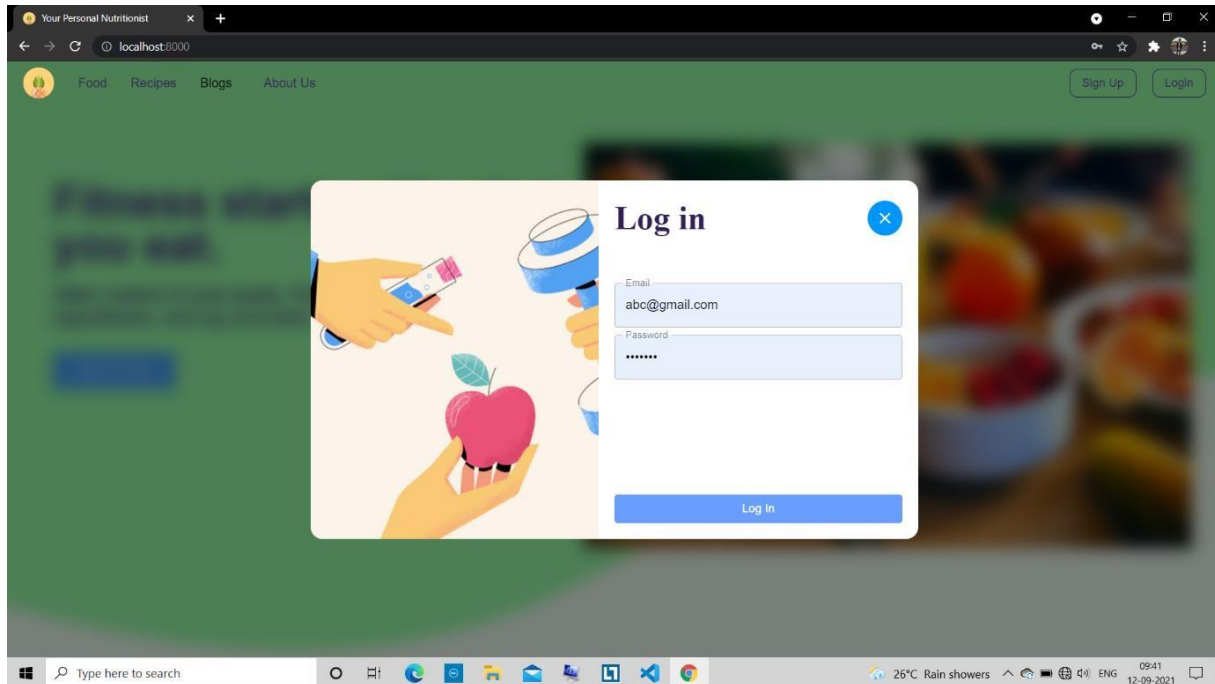


Figure 15

4.1.3 Home Page:

It is website's home page which includes menu bar which contains modules like home page, Signup/login page, Food page, Recipes page, about us page and logo to again go to intro/home page. It gives basic intro or information about the system of the website.

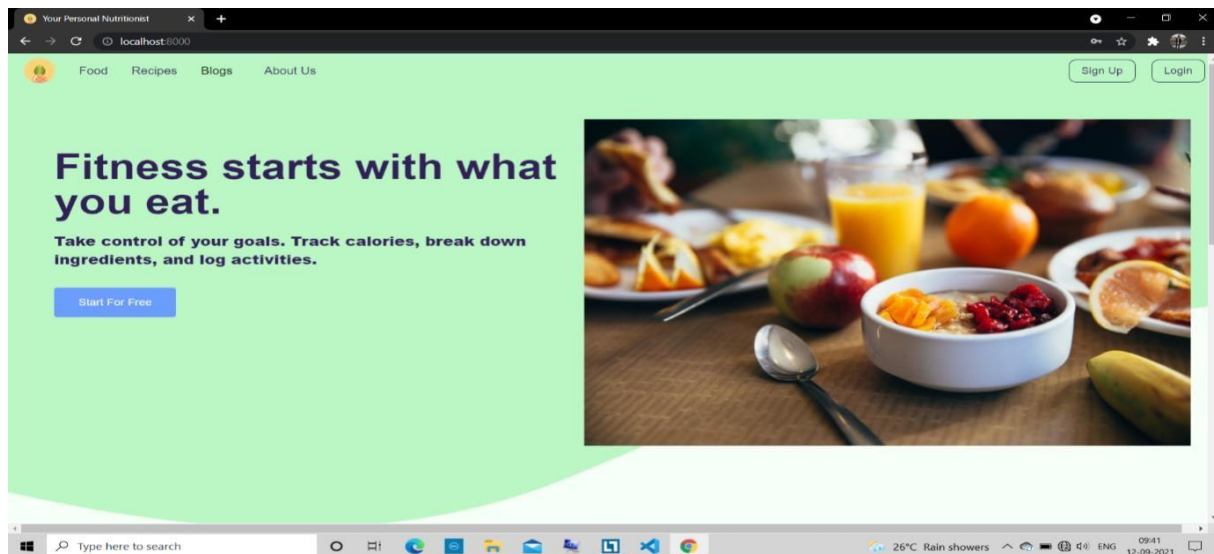
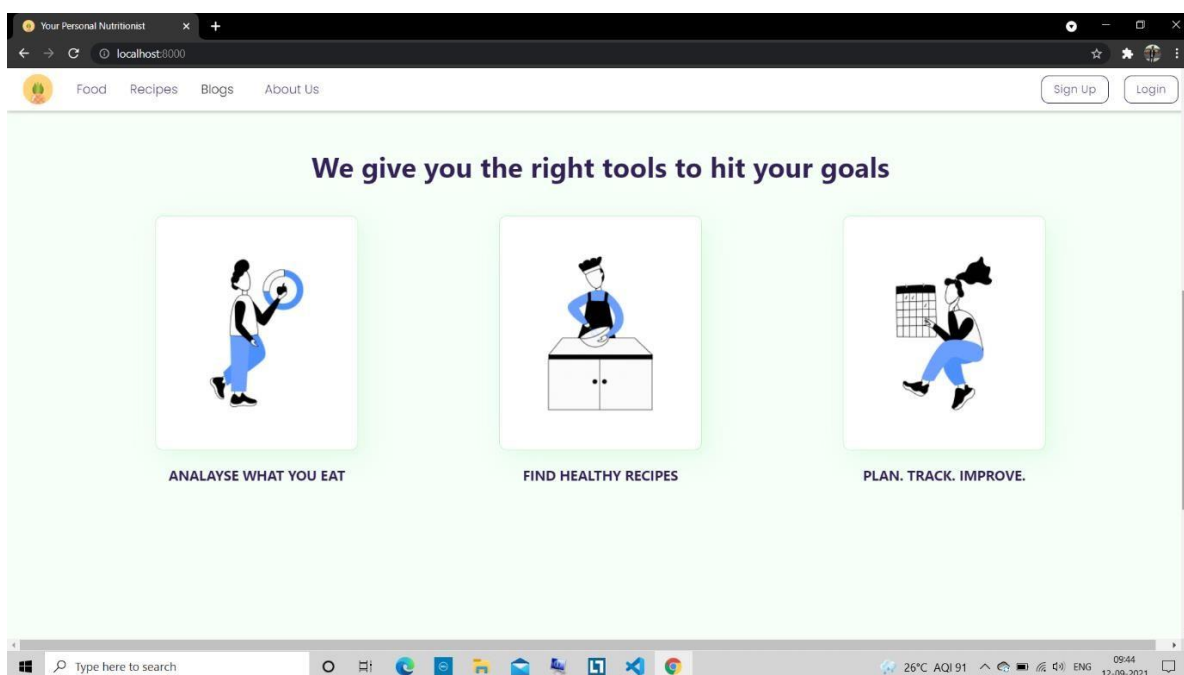
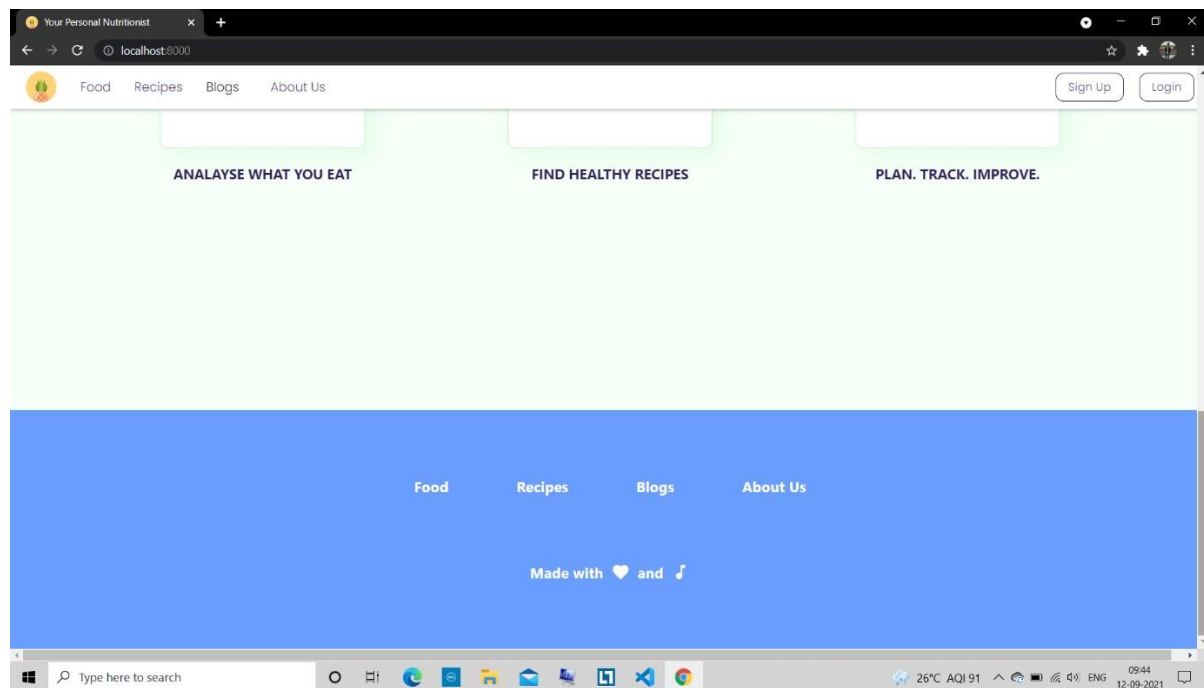


Figure 16

-Image shown below is a part of Introduction page of website.



-Image shown below is footer component of website.



4.1.4 Food Page:

In this page user can search different kinds of food by entering that food's proper name in search bar. The search result will show image of that food, nutrition values of that food, and appropriate exercise time to burn that much calories. Which is more convenient for users.

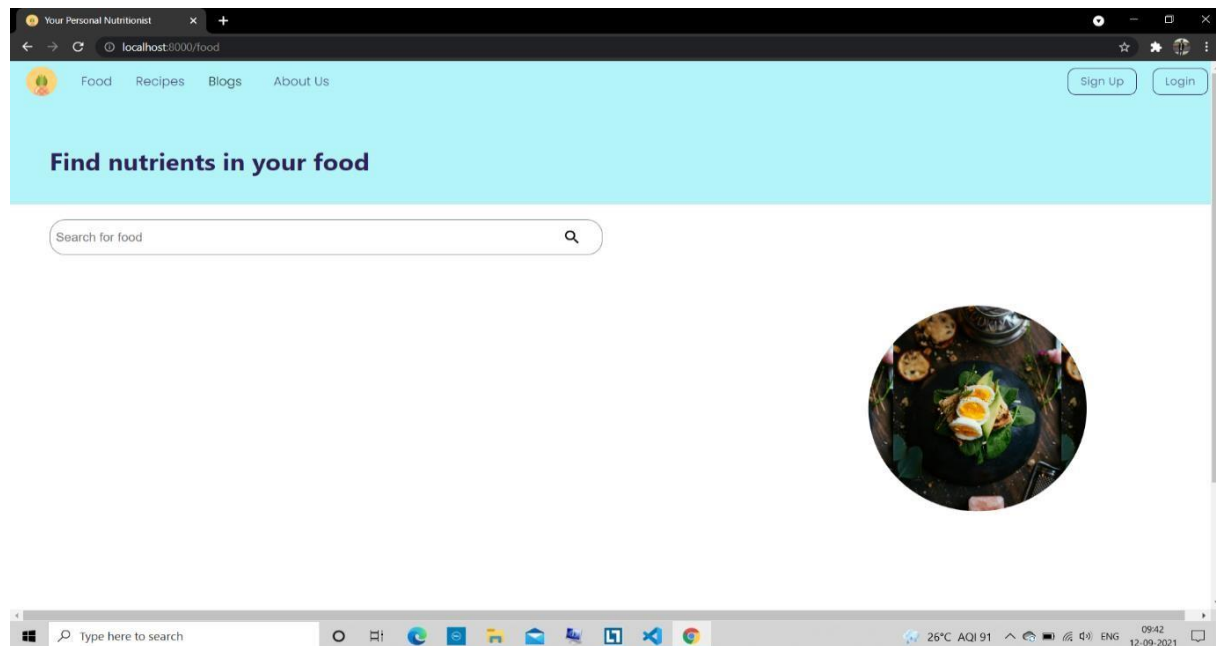
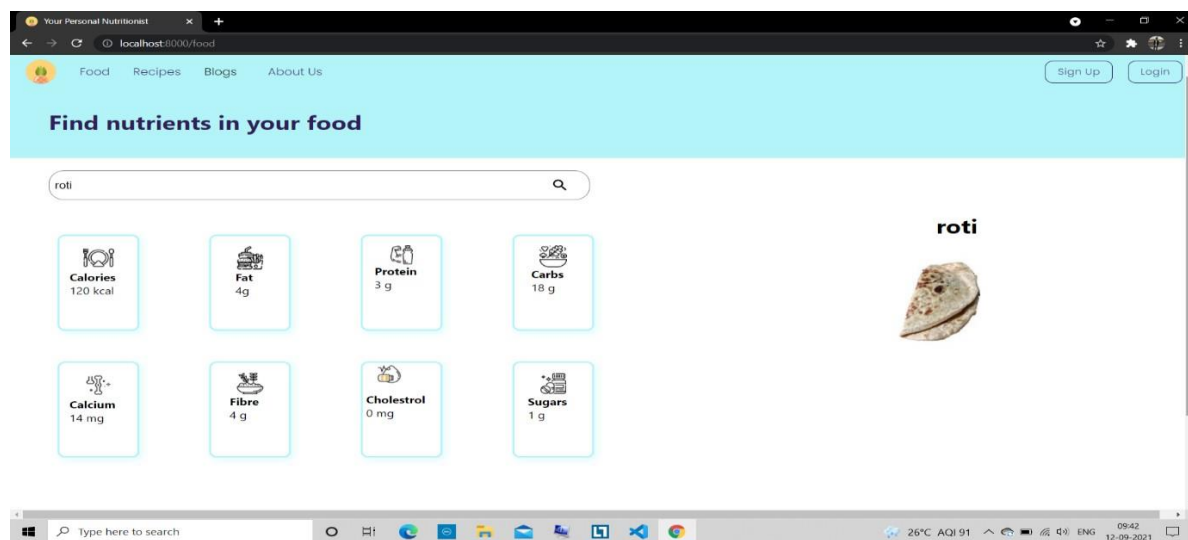
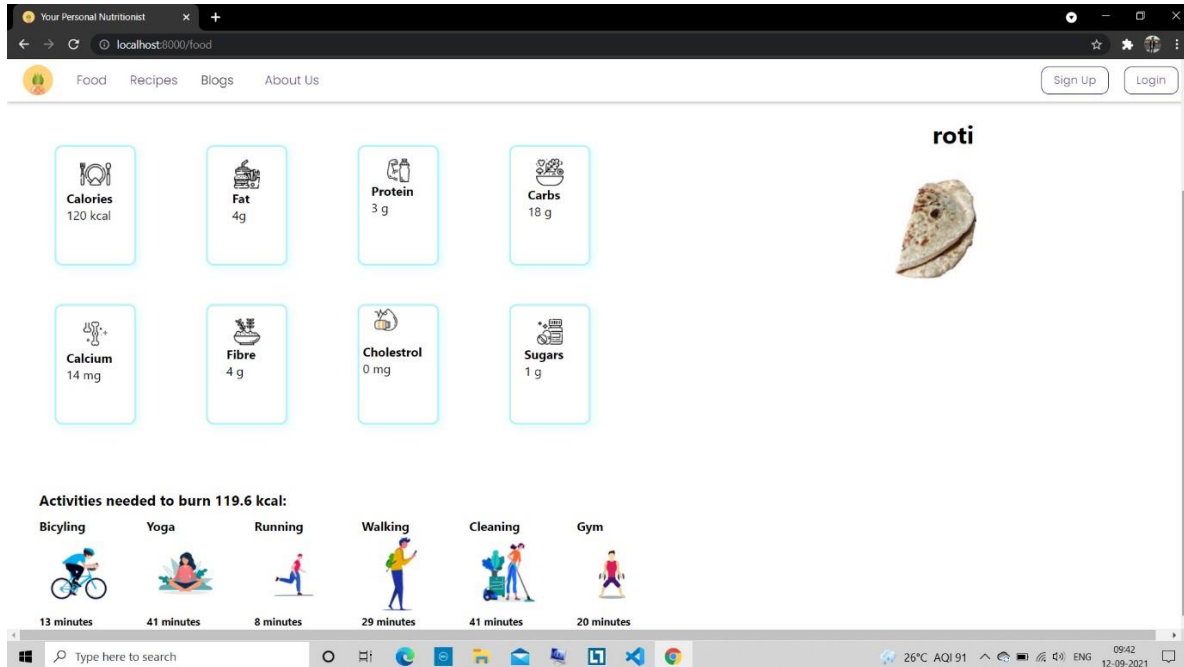


Figure 17

-This search result shows image of Roti and its nutrition values.



-This image shows exercise to burn this much calories.



4.1.5 Recipe's Page:

In this page/module user can search different kinds of recipes, they can also filter out different kinds of recipes that contains almost same kind of ingredients by entering filter values like calories, protein, fat or carbon limits. User can set min to max values of these nutrients to find that kind of recipe.

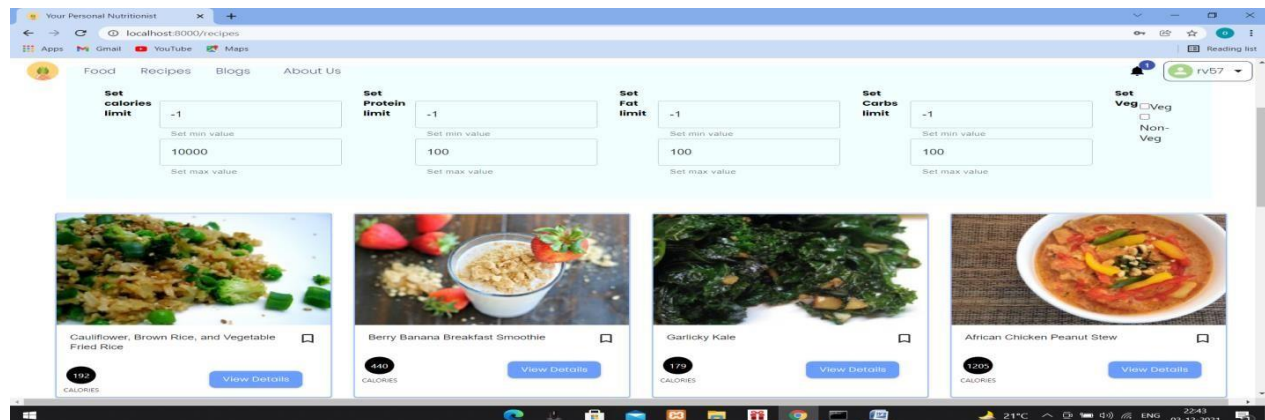
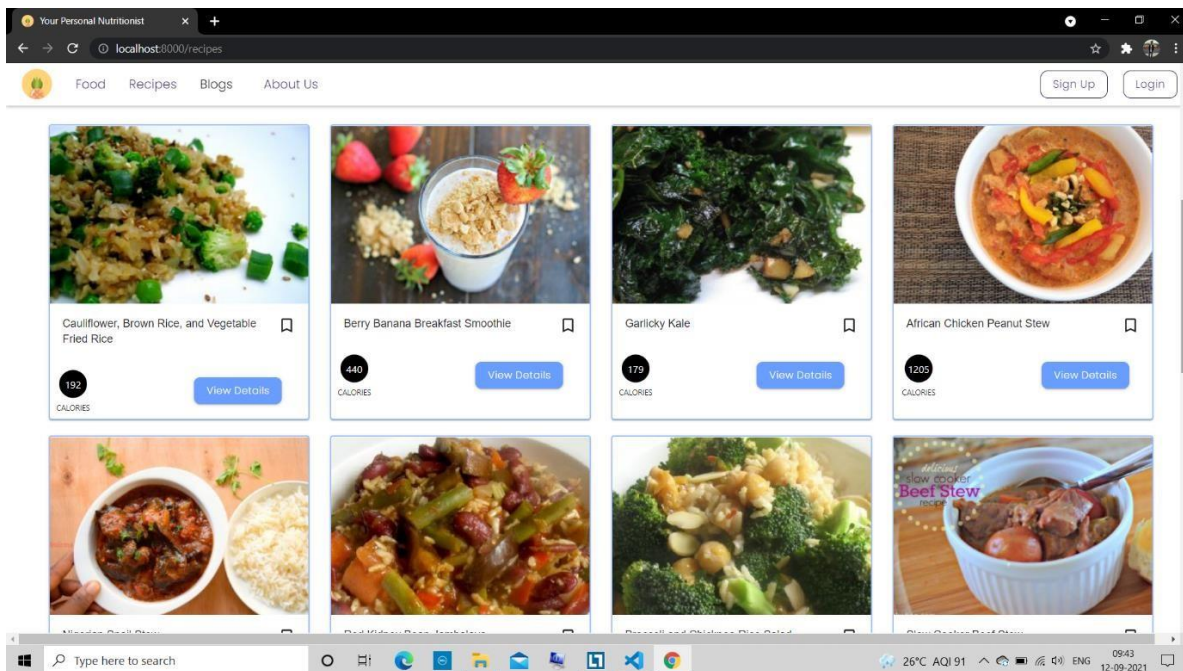
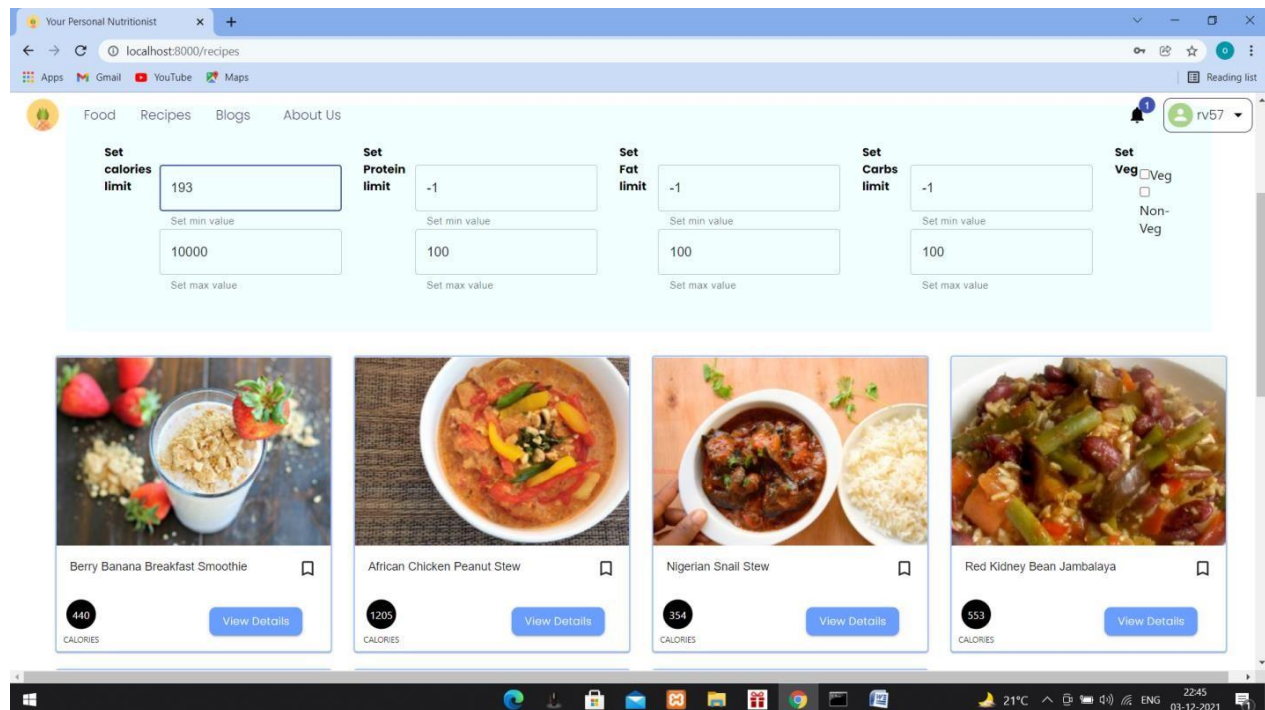


Figure 18

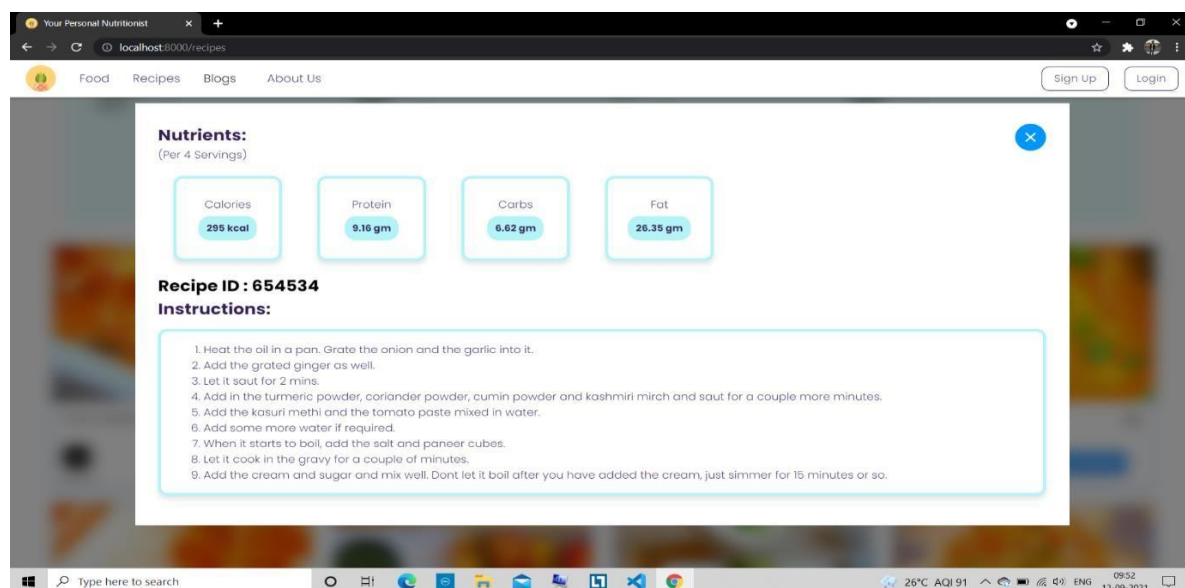
-The search result shows different kind of recipes on Tea. If we set limit on protein then the first recipe result will not show because of the protein limit filter.



-This image shows filter effect on recipe search.



-By clicking on show detail button of that searched recipe user can see nutrient value of that food and details of recipe how to make it step by step using all the ingredients. This recipe search algorithm will also show ingredient-based recipes. For example if we search milk in recipes it will show all the recipes in which milk is used as ingredient.



4.1.6 About us:

- This page contains details about this website and their owner's details. It also shows main purpose of website.

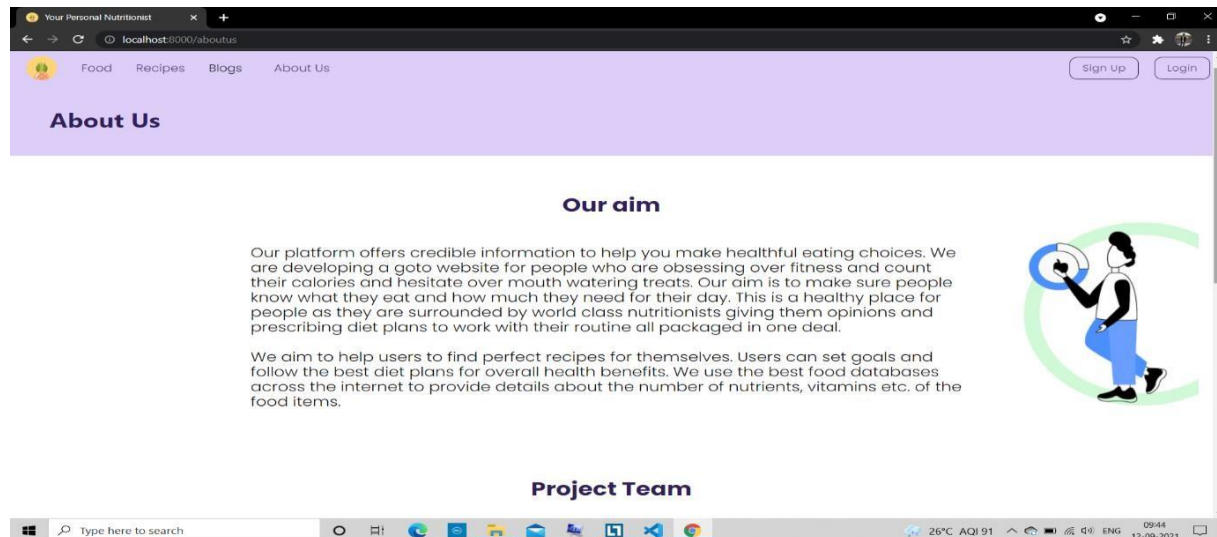
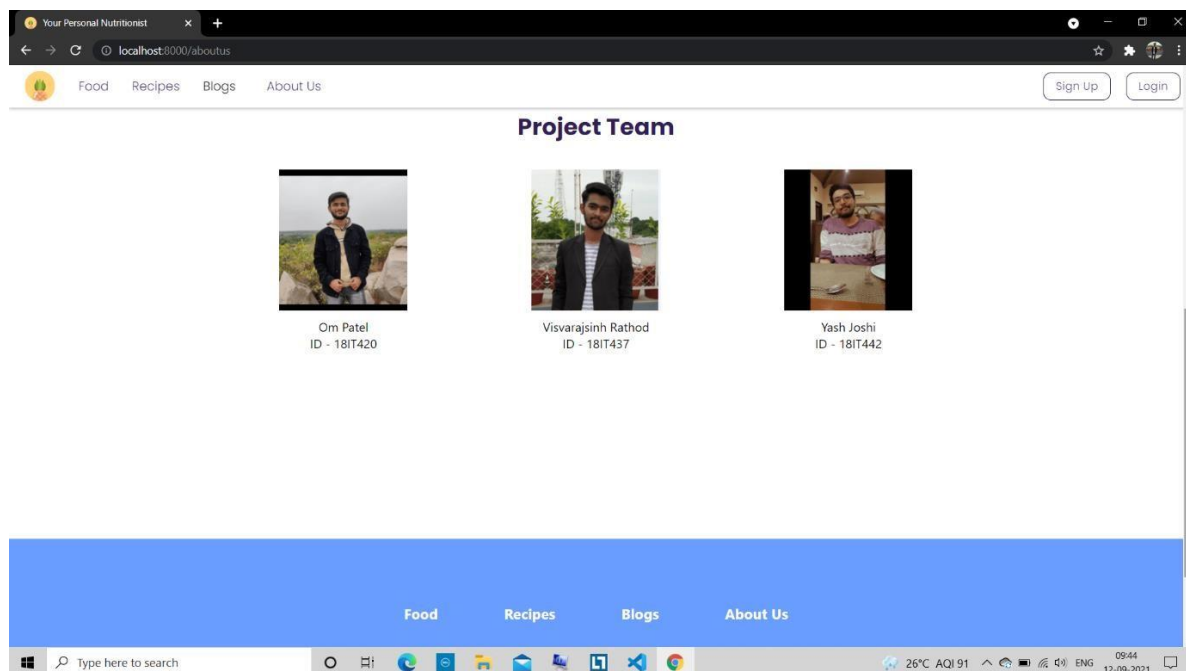
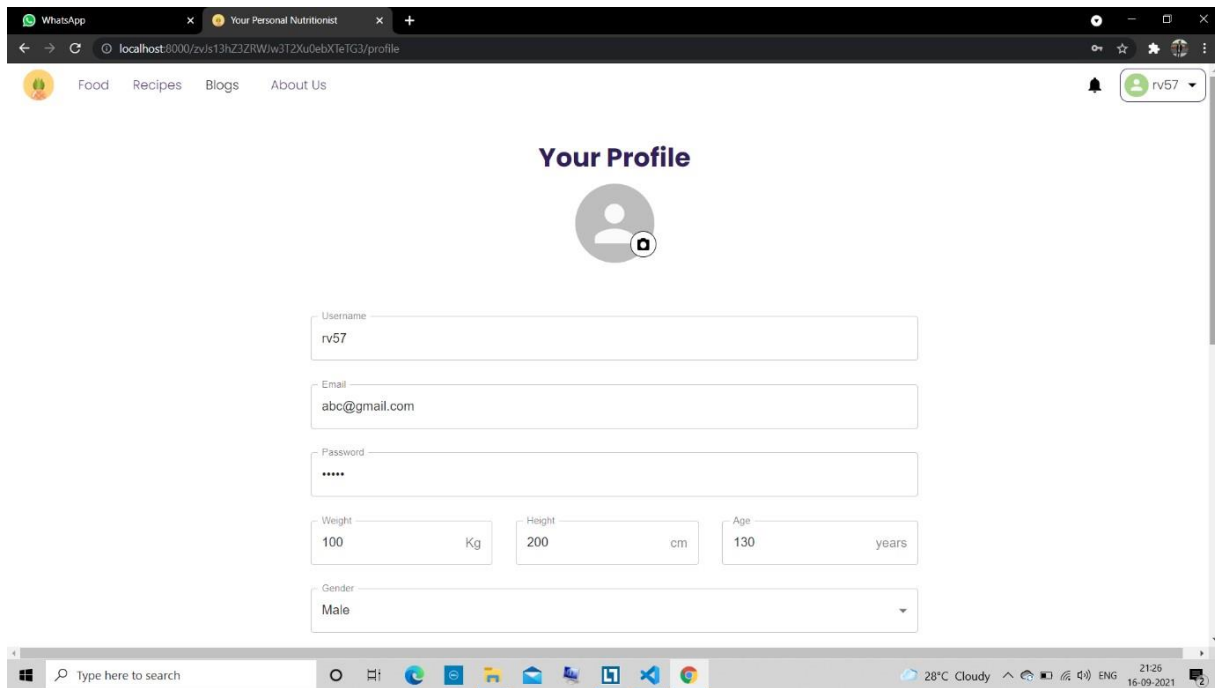


Figure 19



4.1.7 Dashboard

4.1.7.1 User Profile:



The screenshot displays a web browser window with the following elements:

- Browser Tabs:** WhatsApp, Your Personal Nutritionist.
- Address Bar:** localhost:8000/zv/s13hZ3ZRW/w3T2Ku0ebXTeTG3/profile
- Navigation Menu:** Food, Recipes, Blogs, About Us.
- User Profile Section:**
 - Title:** Your Profile
 - Profile Picture:** A circular placeholder with a camera icon.
 - Form Fields:**
 - Username:** rv57
 - Email:** abc@gmail.com
 - Password:** Masked with asterisks (****).
 - Weight:** 100 Kg
 - Height:** 200 cm
 - Age:** 130 years
 - Gender:** Male (dropdown menu)

The Windows taskbar at the bottom shows the search bar, task view button, and several application icons. The system tray indicates a temperature of 28°C, Cloudy weather, and the date/time as 21:25 on 16-09-2021.

Figure 20

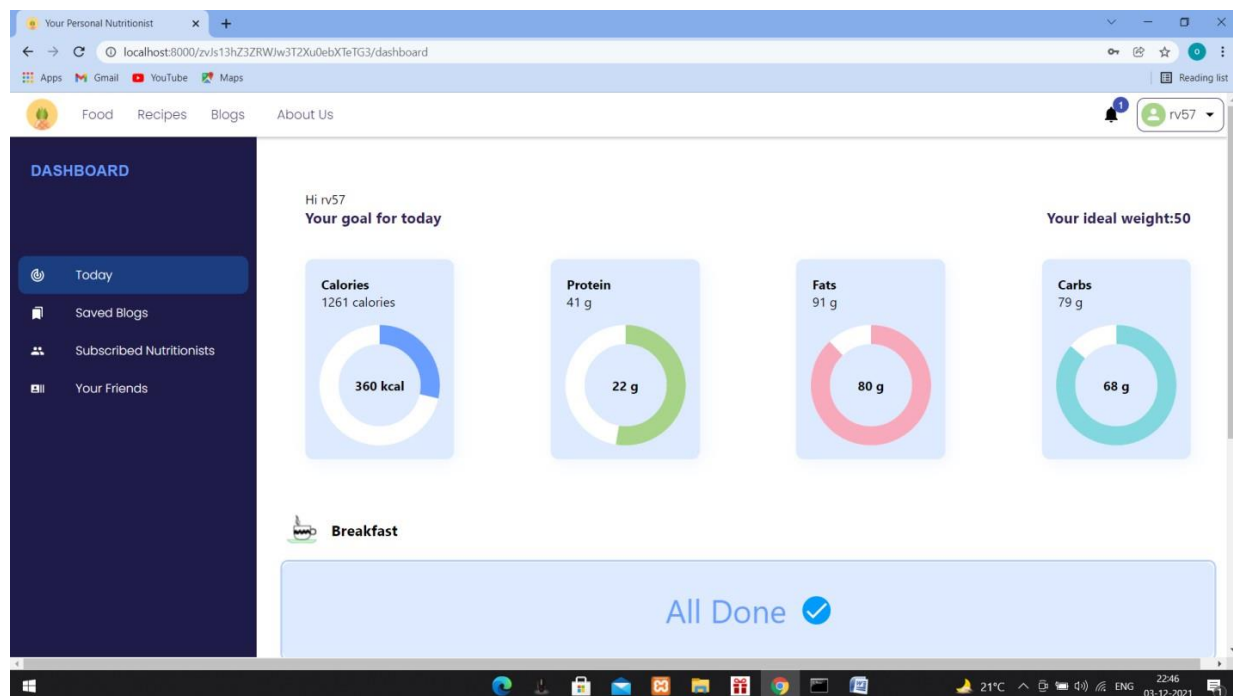
-Here Users set their profile data after login. They will enter their personal information like User name, weight (in kg), height (in cm) and age. They will then choose their goal that if they want to lose weight, gain weight or maintain weight by normal activity, light activity, or high activity.

The screenshot shows a web browser window with the URL `localhost:8000/zv/s13hZ3ZRW/w3T2Xu0ebXTeTG3/profile`. The page has a navigation bar with links: Food, Recipes, Blogs, and About Us. The profile form contains the following data:

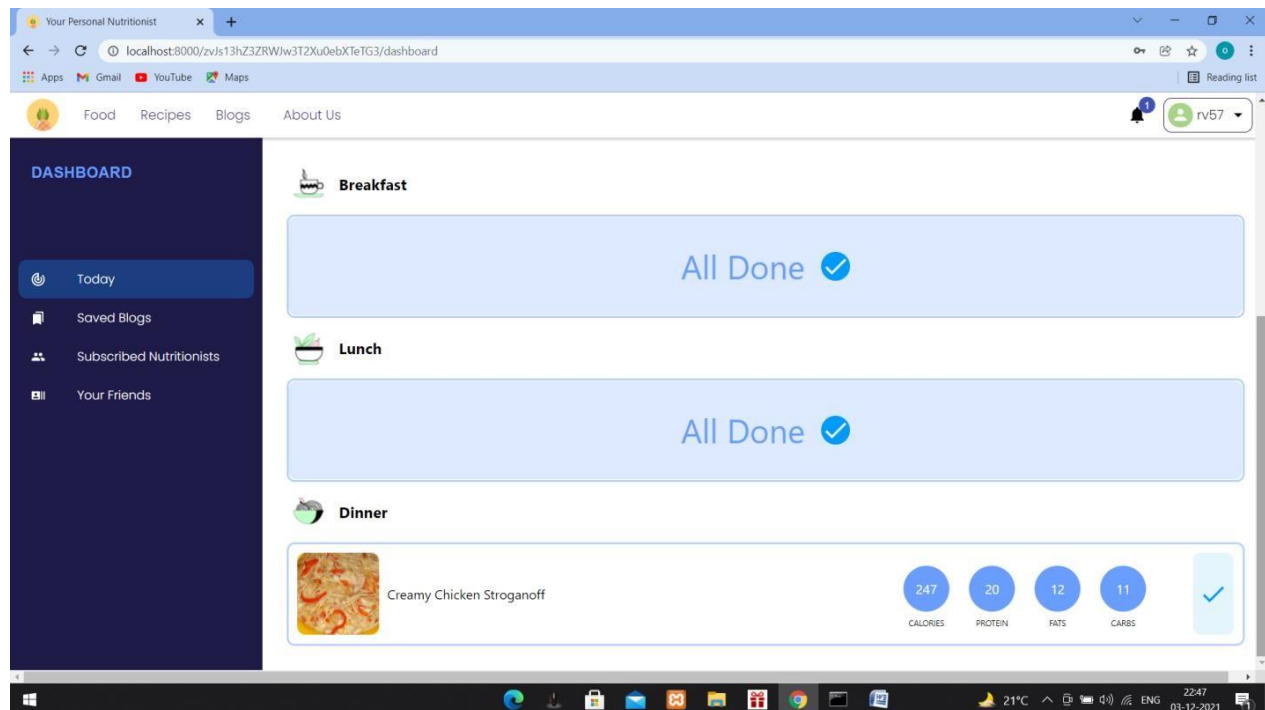
Email	abc@gmail.com		
Password	*****		
Weight	100	Kg	
Height	200	cm	
Age	130	years	
Gender	Male		
Goal	Lose weight		
Activity	Light active		

A blue 'Save Changes' button is located at the bottom of the form.

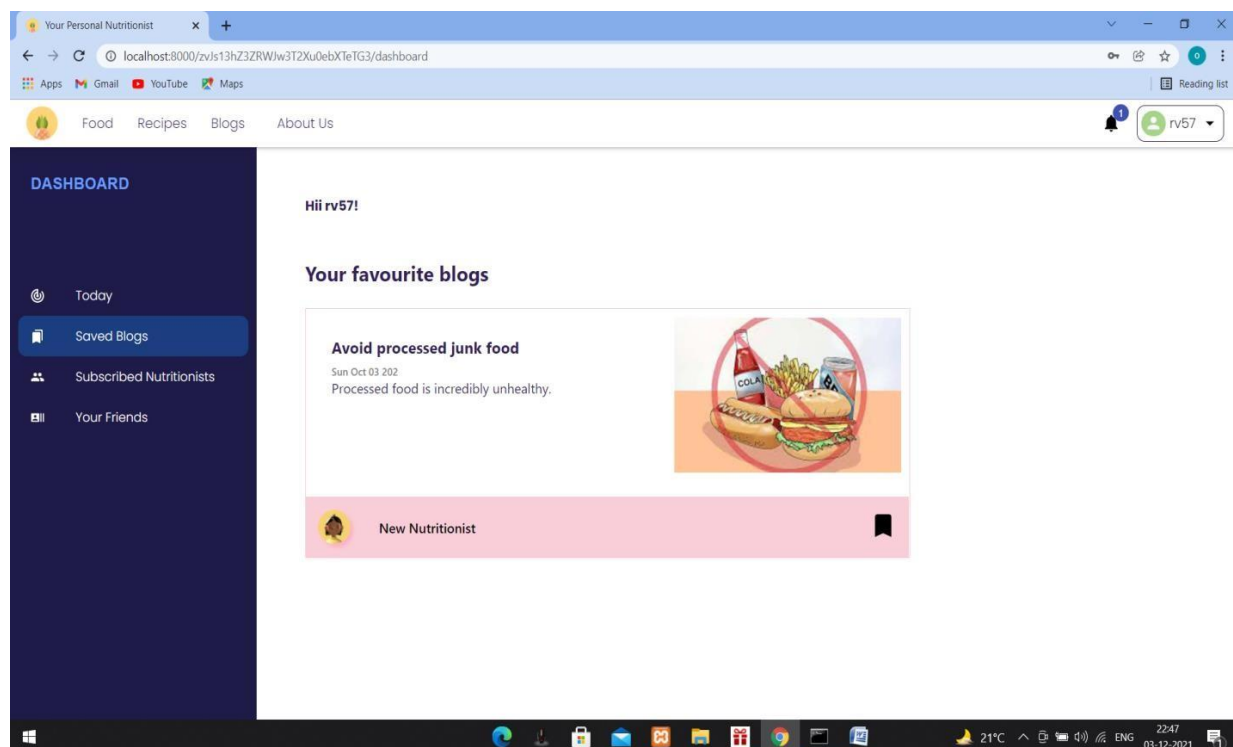
-The food recommendation in daily goal will be according to this user profile data.



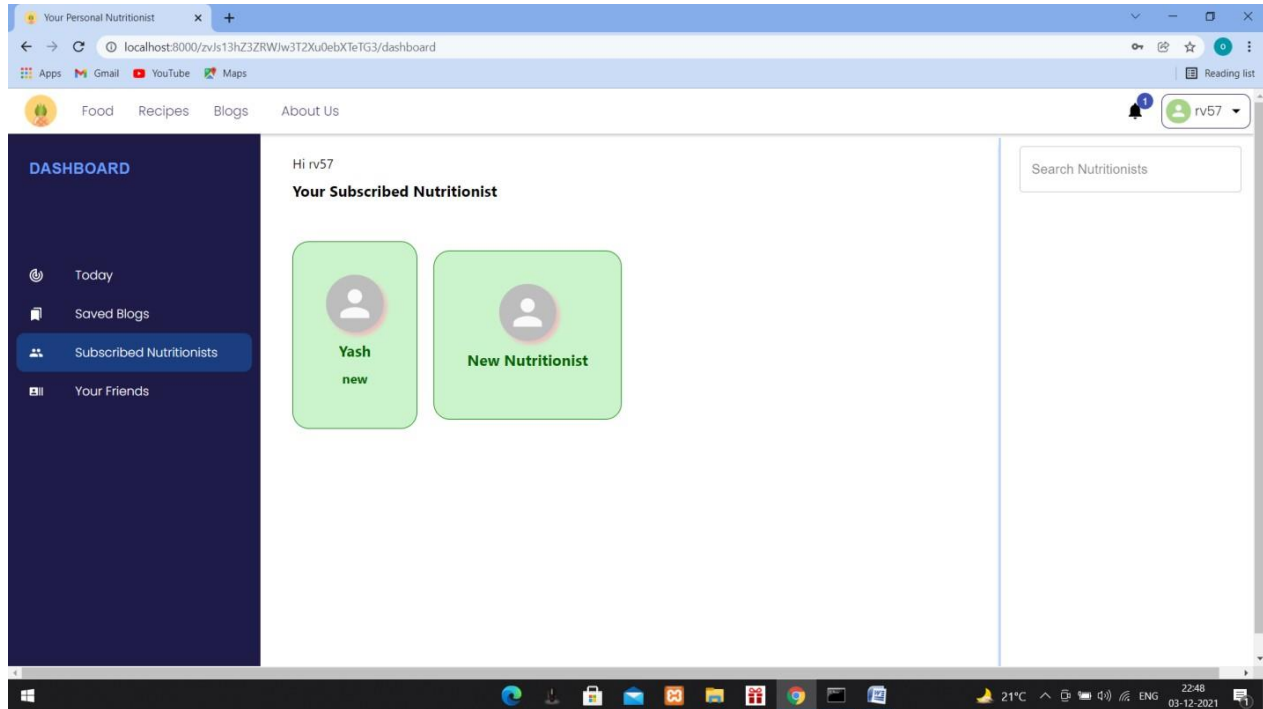
-Images shown here are daily progress page of dashboard of a user.



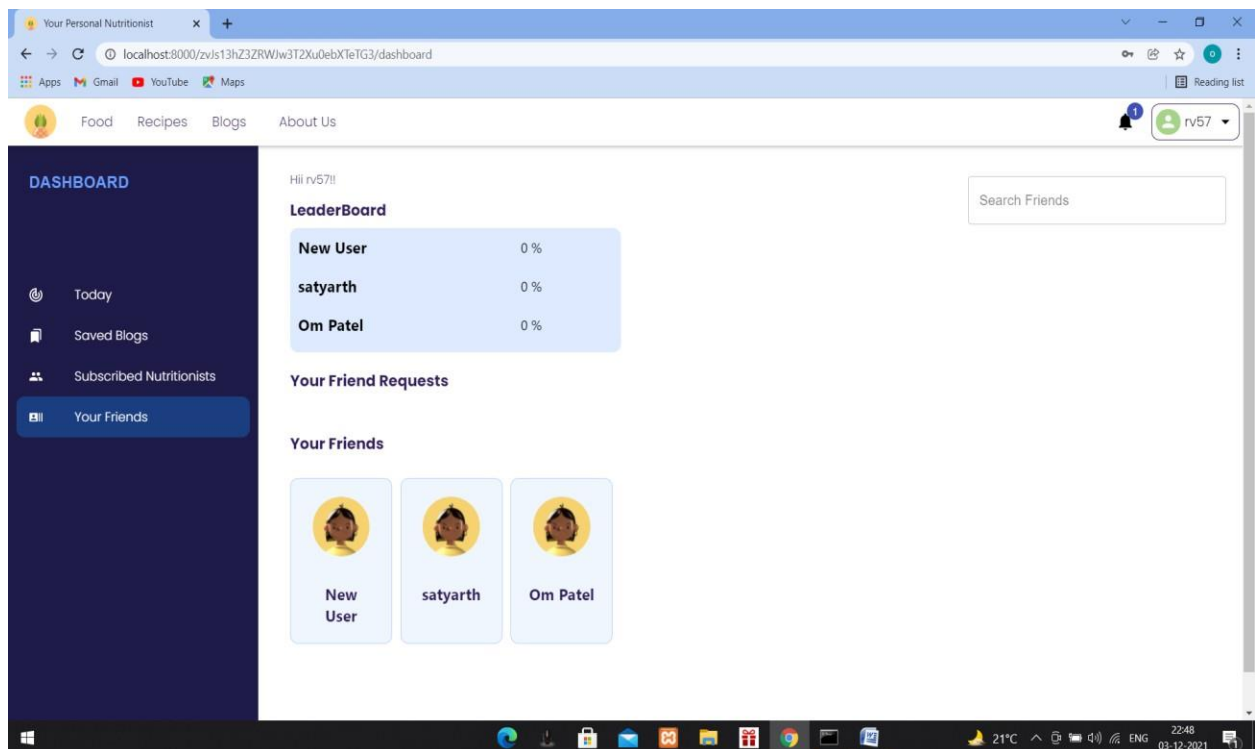
-Image below shown here saved blogs of user:



-Image below shown here nutritionist subscribed by user:



-Image below shown here friends of user.



4.1.7.2 Nutritionist's Profile:

WhatsApp Your Personal Nutritionist

localhost:8000/CKS4GuZybPSjGEvDiF5mXcs8AN2/Nutritionistprofile

Food Recipes Blogs About Us

New Nutritionist

Your Profile

Username
New Nutritionist

Email
test123@test.com

Password

Occupation

Qualification

Type here to search

28°C Cloudy 21:28 16-09-2021

Figure 21

-After admin's approval nutritionist will able to set their profile data shown in below image.

WhatsApp Your Personal Nutritionist

localhost:8000/CKS4GuZybPSjGEvDiF5mXcs8AN2/Nutritionistprofile

Food Recipes Blogs About Us

New Nutritionist

Username
New Nutritionist

Email
test123@test.com

Password

Occupation

Qualification

Experience
0 Years

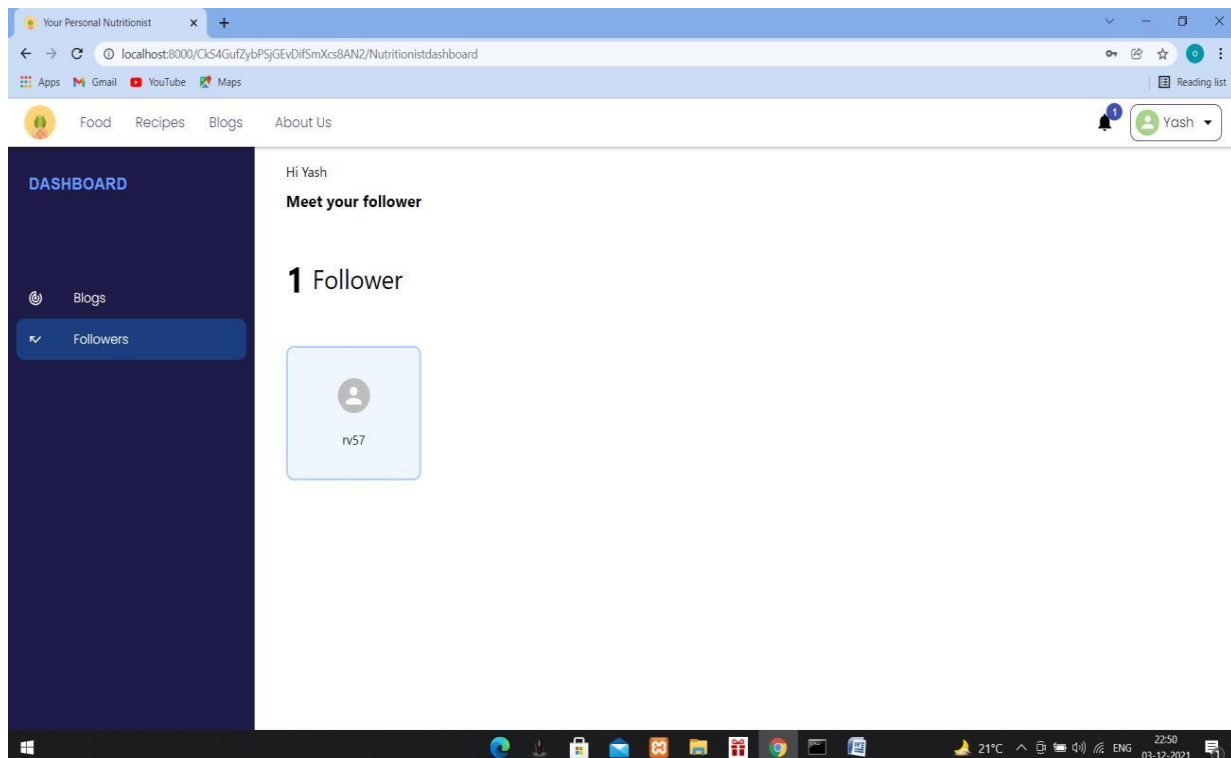
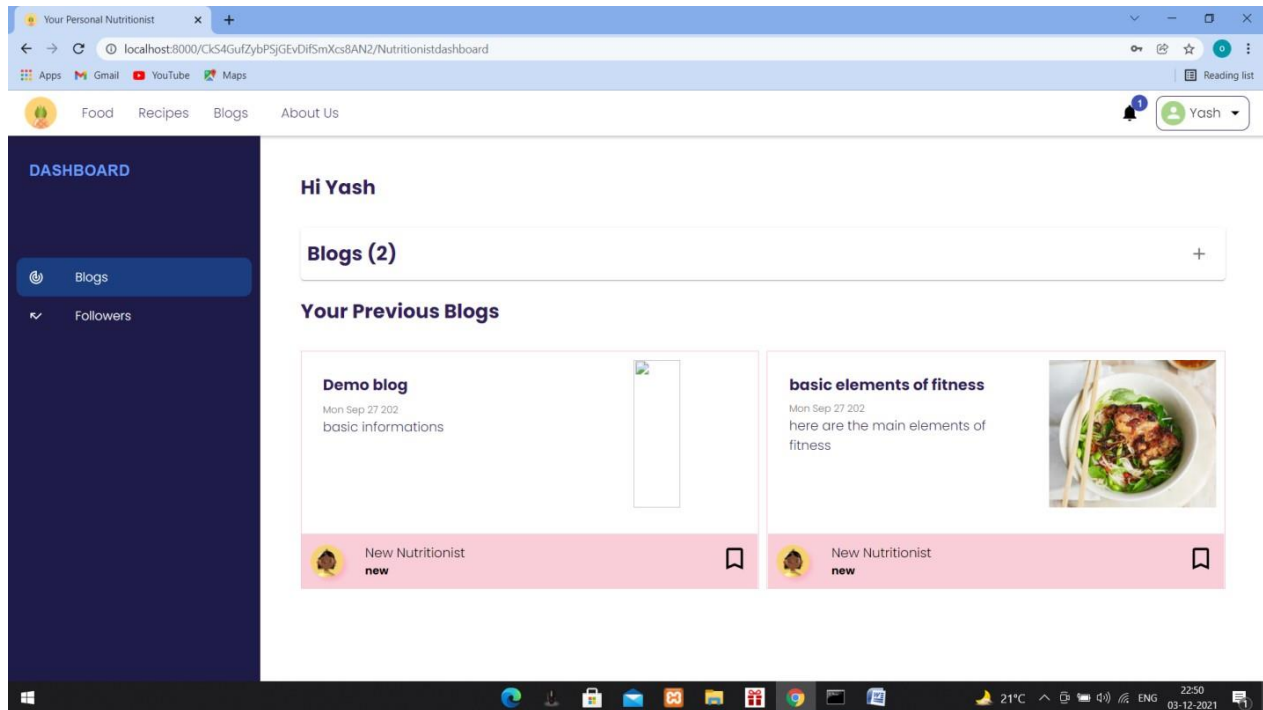
Bio

Save Changes

Type here to search

28°C Cloudy 21:28 16-09-2021

-As shown below Nutritionists can create their blogs and show status on whoever subscribes/follows them.



4.2 Testing using use cases

4.2.1 User or Nutritionist Sign up:

-If user doesn't provide role, then it gives following error

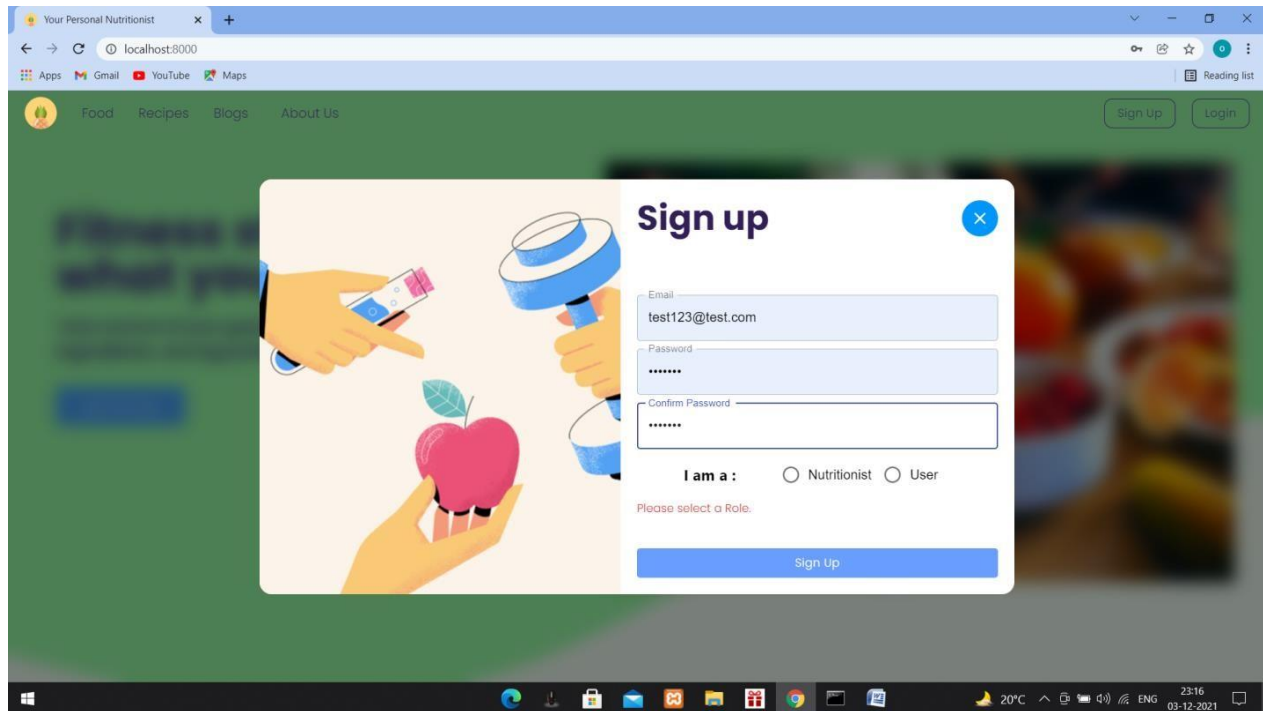


Figure 22

4.2.2 Nutritionist after Sign up:

-After Nutritionists Sign up they have to wait for several days for approval for server side:

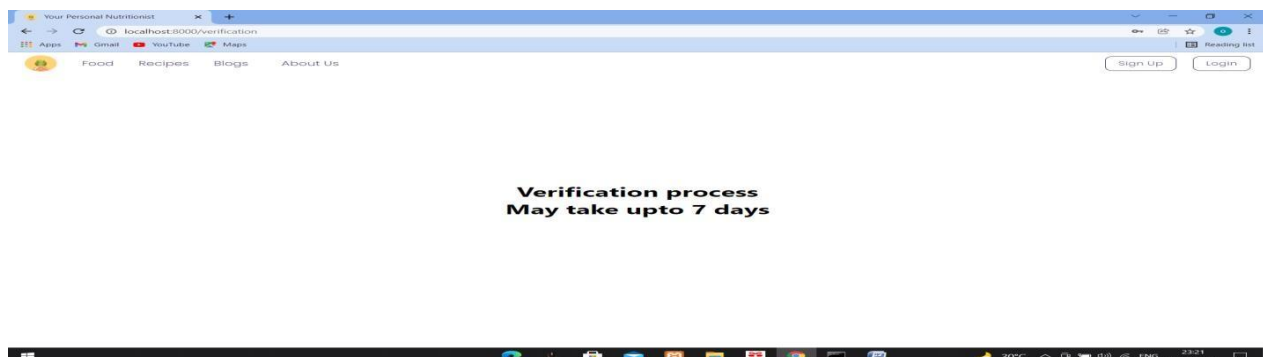


Figure 23

4.2.3 User or Nutritionist Login:

-If User or Nutritionist Provide a wrong password then also it gives error.

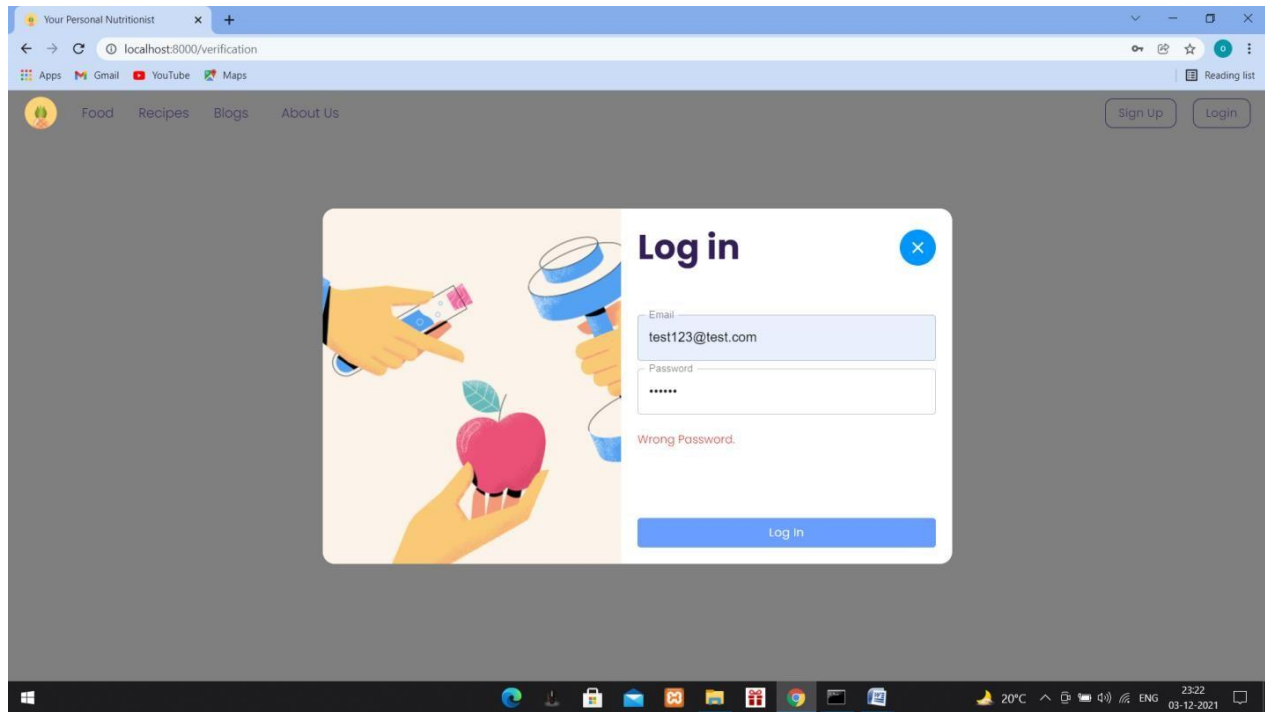


Figure 24

Chapter 5: Conclusion & Future work

Conclusion:

Good nutrition promotes not only better physical health and reduced susceptibility to disease, but has also been demonstrated to contribute to cognitive development and academic success. So, we should at least use any of these kinds of applications which provide such diet services.

In conclusion, we need a healthy lifestyle to build up a healthy immune system and to avoid disease. We should eat a variety of food and keep a balanced diet.

Future work:

Such kind of health and diet related applications are often useful for almost everyone so evolutions are necessary in this applicable model. We can add a chat service between user and their subscribed nutritionist, and friends.

We can gather more user data like what and which type of food dishes they prefer and add food suggestion algorithm, and also by using this data we can improve user profile by providing Graph or chart of that data so that user can understand their food track more accurately.

We can start paid subscriptions so potential nutritionist starts using applications.

We can use more efficient food APIs which provide more accurate food related data services.

Chapter 6: References

Reference:

- [1] **Nutrition:** Information about nutrition (<https://www.britannica.com/science/nutrition>)
- [2] **Nutritionist:** Roles and importance of nutritionist
(<https://www.livestrong.com/article/284404-what-is-the-role-of-a-nutritionist/>)
- [3] **Nutrition API:** Food nutrition information (<https://www.nutritionix.com/business/api>)
- [4] **Spoonacular API:** Recipe data (<https://spoonacular.com/food-api>)
- [5] **BMI index:** Information about Body mass index
(<https://www.cdc.gov/healthyweight/assessing/bmi/index.html>)
- [6] **React js:** (<https://www.reactjs.org/>)
- [7] **Node js:** (<https://nodejs.org/en/>)
- [8] **Lucid chart:** SRS diagram design (<https://www.lucidchart.com/>)
- [9] **Figma:** Template design (<https://www.figma.com/>)