PROJECT REPORT
NUTRITION ASSISTANT APPLICATION

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1.INTRODUCTION

PROJECT OVERVIEW:

Due to the ignorance of healthy food habits, 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, which is the most basic method to avoid obesity. However, although food packaging comes with nutrition (and calorie) labels, it's still not very convenient for people to refer to App-based nutrient dashboard systems which can analyze real-time images of a meal and analyze it for nutritional content which can be very handy and improves the dietary habits, and therefore, helps in maintaining a healthy lifestyle.

This project aims at building a web App that automatically estimates food attributes such as ingredients and nutritional value by classifying the input image of food. Our method employs Clarifai's AI-Driven Food Detection Model for accurate food identification and Food API's to give the nutritional value of the identified food.

PURPOSE:

NUTRITION ASSISTANT APPLICATION is a Application for a nutrition assistant Healthy habits and wellness have gained popularity. Fitness application interest and revenue are increasing at the same rate as the number of people who are trying to get in shape. You can access more than 365,000 recipes and 86,000 food items with the spoonacular Nutrition, Recipe, and Food API. We provide natural language recipe search utilising our food ontology and semantic recipe search engine. such as "low-fat vegan cupcakes" or "gluten-free brownies without sugar." Any dish's nutritional data can be automatically calculated. You can also examine recipe expenses and view ingredient lists. Find recipes based on your refrigerator contents, preferred ingredients, special diets, or nutritional needs. convert component amounts, categorise recipes according to their types and cuisines, or even compute a full.

2. LITRATURE SURVEY

EXISTING PROBLEM:

Being a sleeping person is great .But it can be fact be frustrating sometimes.

The android mobile user will not be able to insert or view details if the server goes down. Thus there is disadvantages of single point failure.

Nutritious foods that are difficult to access for certain segments of the population.

REFERENCES:

"PERSONAL HEALTH ASSISTANT ON ANDROID MOBILE DEVICE" **by R.Afshar, A.Emany, N.Shavandi, effects of intradialyctic aerobic training on slip quality,iran J kidney Dis.5(2011)119-23.**

• "HOW TO BUILD A DIET AND NUTRITION APP"**by Marina Korobka, light it global, F.Richards, J.Charles.**

• "ANDROID AI DIET CONSULTANT"**by nevon solutions pvt.ltd, 709, 710.Paul Humming, T.Hendry(AI nutritient).**

• "EFFECTS AND CHALLENGES OF USING NUTRITION ASSISTANT SYSTEM"**by Hanna Hauptmann, Martin Lurz, Groh&Helmut krcmar(user modelling and user adapted intractions)**.

PROBLEM STATEMENT DEFINITION

WHY WE NEED NUTRITION ASSISTANT APPLICATION ?

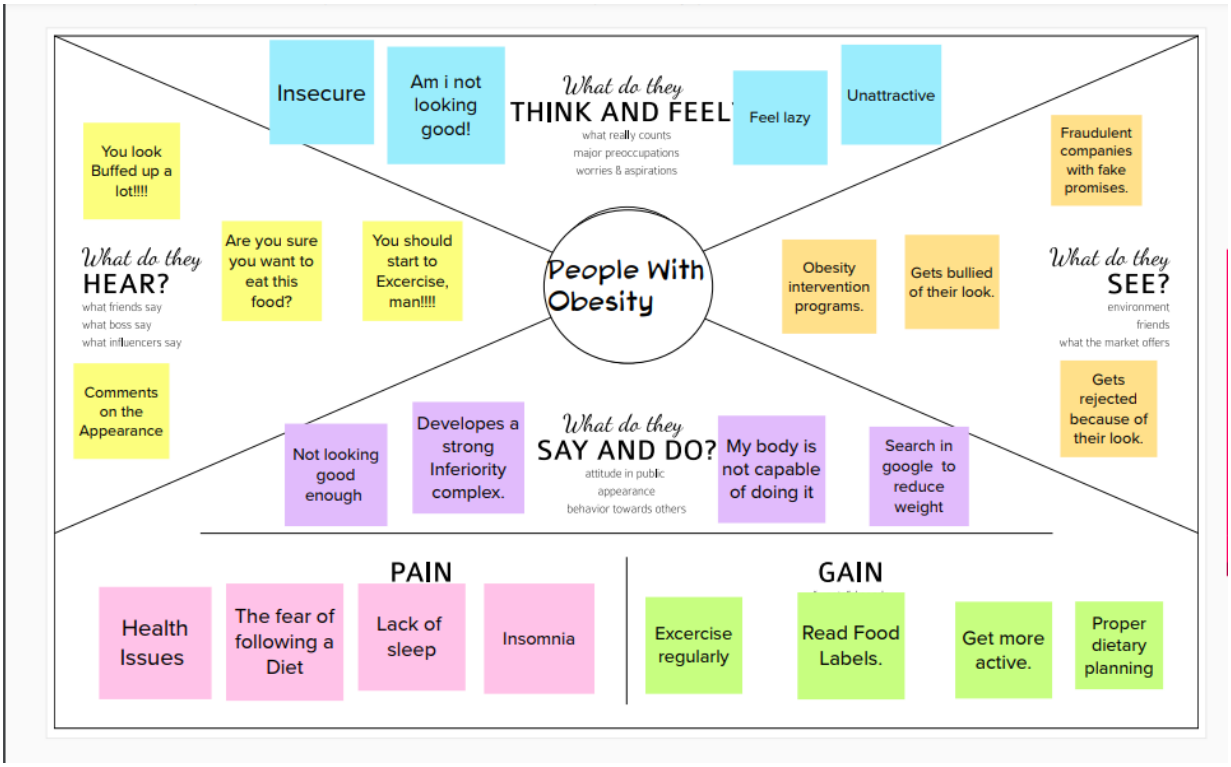
The nutrition assistant application has promote a healthy diet throughout life promotes, supports normal growth, development and ageing, helps to maintain a healthy body weight, and reduces the risk of chronic disease leading to overall health and well-being.

OUR PLANS FOR NUTRITION ASSISTANT APPLICATION :

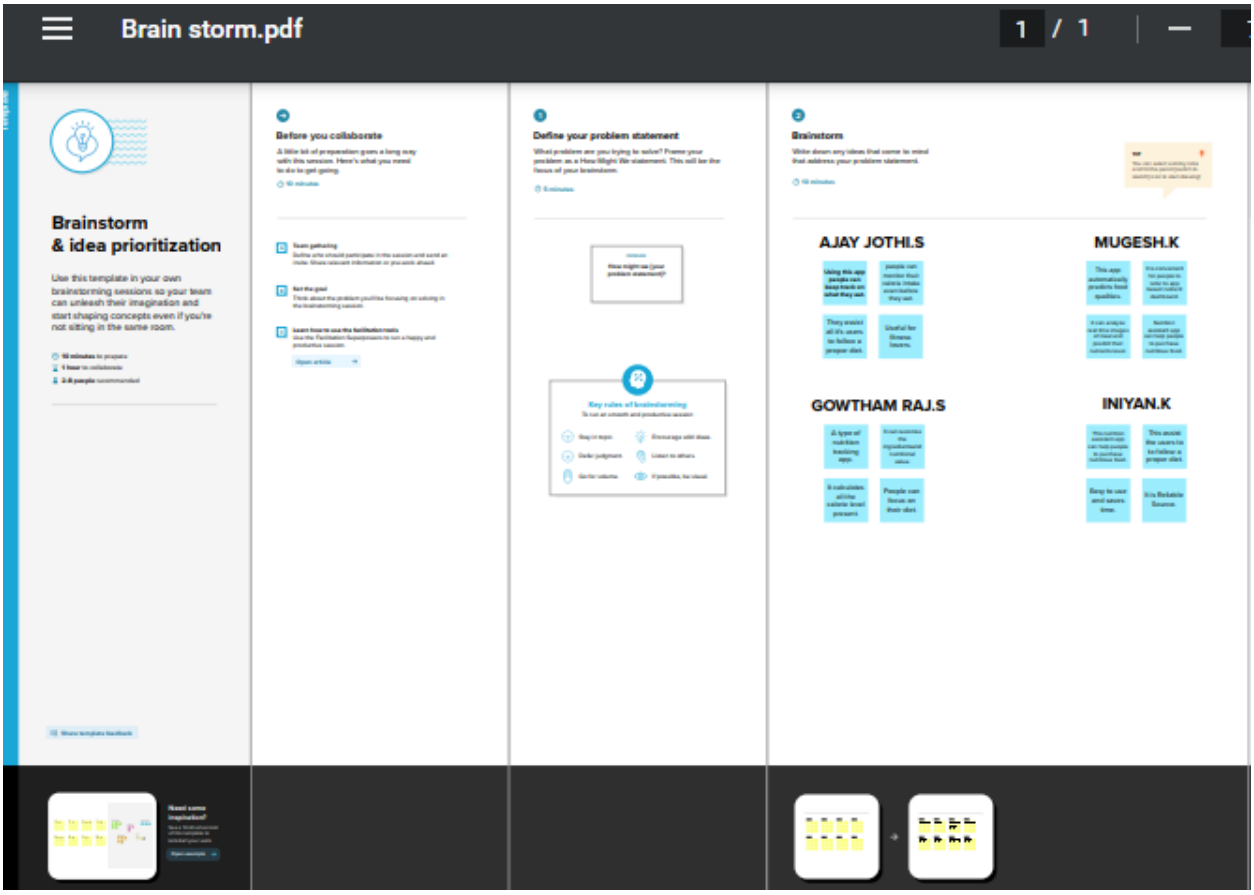
- User interacts with the Web App to Load an image.
- The image is passed to the server application, which uses Clarifai's AI-Driven Food Detection Model Service to analyze the images and Nutrition API to provide nutritional information about the analyzed Image.
- Nutritional information of the analyzed image is returned to the app for display.

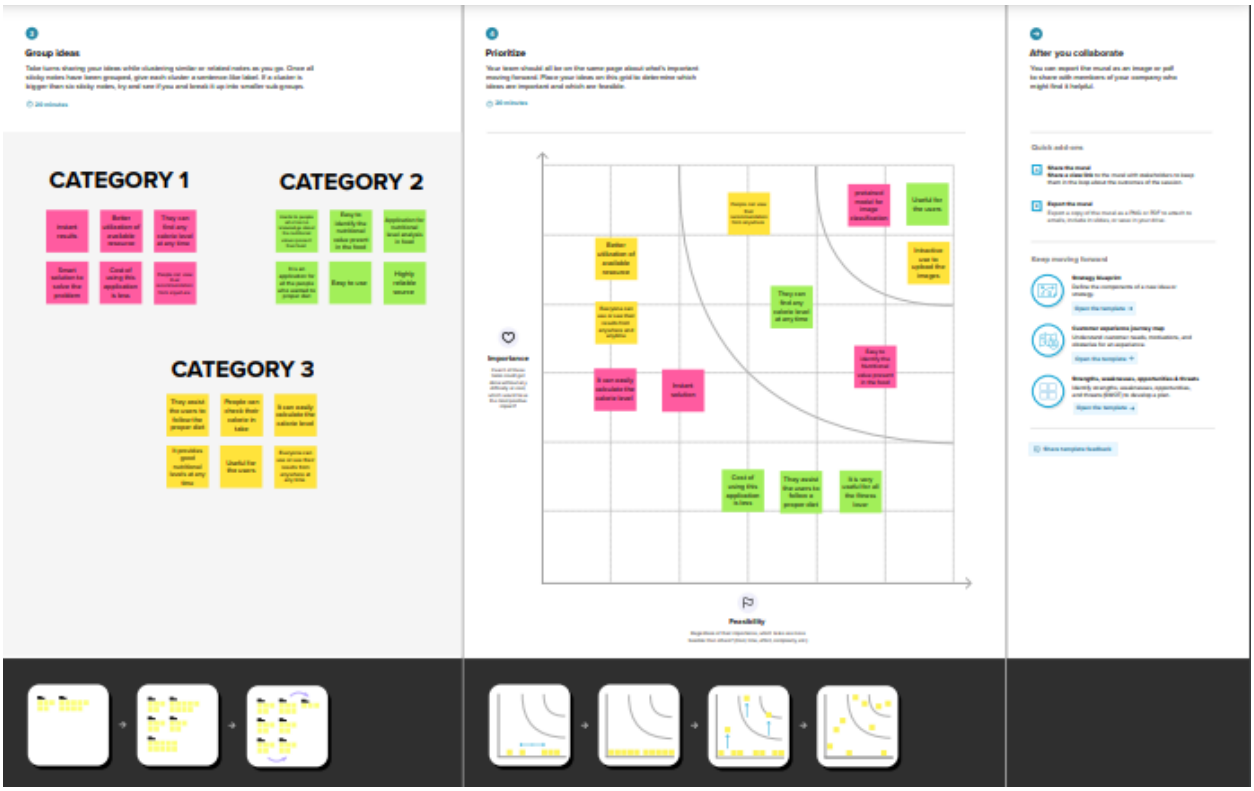
3.IDEATION & PROPOSED SOLUTION

Empathy Map Canvas :



Ideation & Brainstorming :





4. REQUIREMENT ANALYSIS

Functional Requirement :

S.NO	FUNCTIONAL REQUIREMENT (EPIC)	SUB REQUIREMENT (STORY/SUB-TASK)
1	USER INTERFACE	HTML, CSS, JavaScript / Angular Js
2	APPLICATION LOGIC - 1	Python
3	CLOUD DATABASE	IBM DB2, IBM Cloudant
4	FILE STORAGE	IBM Block Storage or Other Storage Service or Local File system
5	INFRASTRUCTURE (SERVER/CLOUD)	Local, Cloud Foundry, Kubernetes

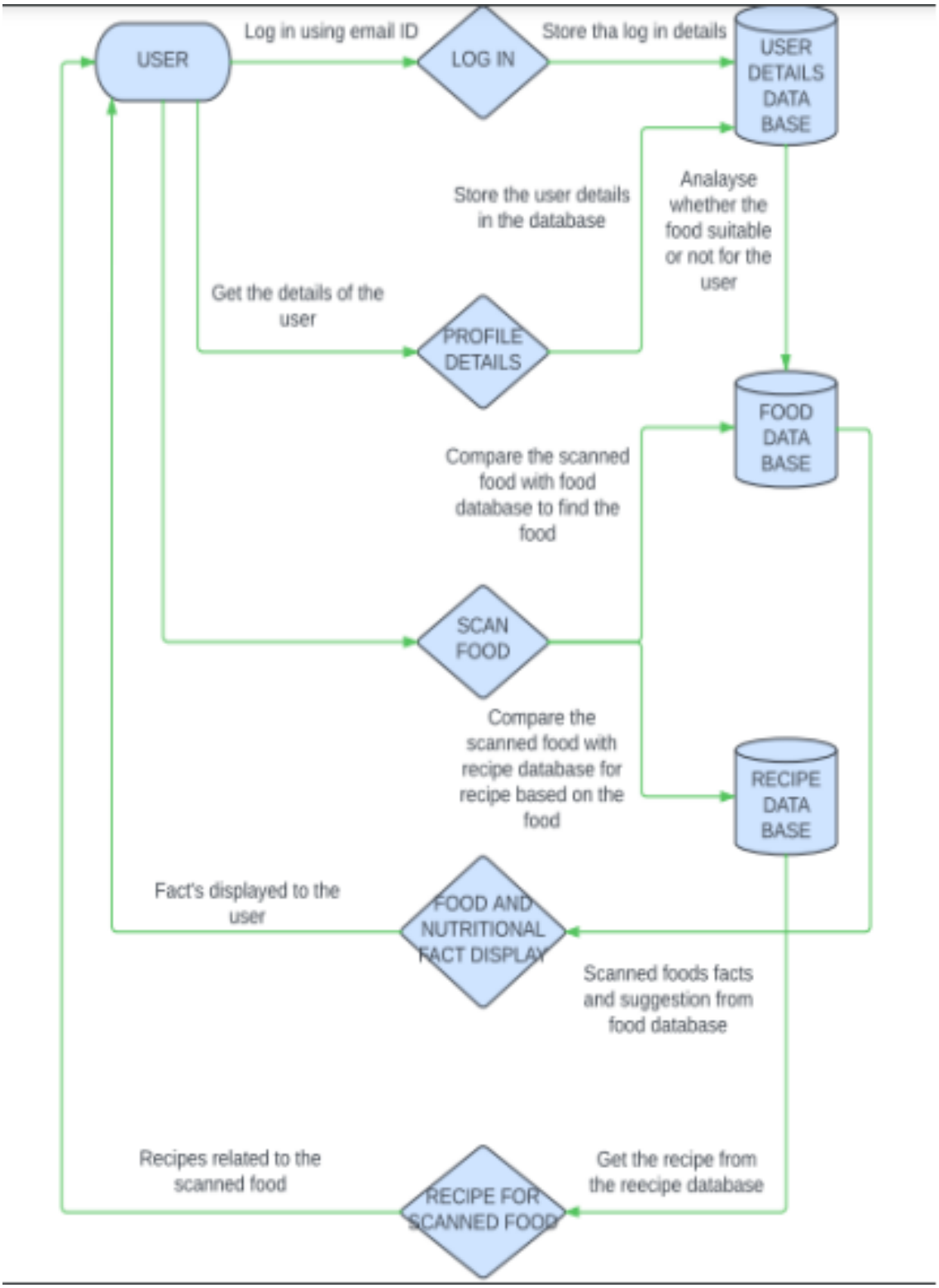
Non Functional Requirement :

S.NO	NON FUCTIONAL REQUIREMENT	DESCRIPTION
1	USABILITY	Python flask
2	SECURITY	SHA-256, Encryptions, IAM Controls
3	SCALABILITY	IBM cloud, IBM database
4	AVAILABILITY	IBM cloud
5	PERFORMANCE	IBM cloud

5. PROJECT DESIGN

Data Flow Diagrams :

A Data flow diagram (DFD) is a Traditional Visual Representation of the information Flows with in a System . A Neat and Clear DFD Can depict the Right Amount of the System Requirment Graphically. It Shows how Data Enters and Leaves the System , What Changes the information and Where Data is Stored .


USER
Log in using email ID
LOG IN
Store tha log in details
USER DETAILS DATA BASE
Store the user details in the database
Analayse whether the food suitable or not for the user
Get the details of the user
PROFILE DETAILS
FOOD DATA BASE
Compare the scanned food with food database to find the food
SCAN FOOD
Compare the scanned food with recipe database for recipe based on the food
RECIPE DATA BASE
Fact's displayed to the user
FOOD AND NUTRITIONAL FACT DISPLAY
Scanned foods facts and suggestion from food database
Recipes related to the scanned food
RECIPE FOR SCANNED FOOD
Get the recipe from the reecipe database

User Stories :

USER TYPE	FUNCTIONAL REQUIREMENT (EPIC)	USER STORY NUMBER	USER STORY / TASK	ACCEPTANCE CRITERIA	PRIORITY	RELEASE
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard.	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application.	I can receive confirmation email & click confirm.	High	Sprint-1
	Login	USN-3	As a user, I can log into the application by entering email & password.	I can access the Dashboard and the application.	High	Sprint-1
Customer (Web user)	Upload Photo	USN-4	As a user , I can upload the food photo.	I can get the nutrition details.	High	Sprint-1
Administrator	User details	USN-5	As a user , I can fill the Details.	I can get whether the scanned food is suitable or not.	High	Sprint-2
	Push notification	USN-6	As a user, I will search the food items.	I can get the notification, related to my search.	High	Sprint-2
	Shown the nutrition details	USN-7	As a user, I can scan the food.	I can get the nutrition details of the scanned food.	High	Sprint-1
	Recipe shown	USN-8	As a user ,I want to get the recipe for the scanned food.	I can get the recipe about the food.	Low	Sprint-2

ADAVANTAGES & DISADVANTAGES

ADAVANTAGES :

The nutrition assistant application has promote a healthy diet throughout life promotes, supports normal growth, development and ageing, helps to maintain a healthy body weight, and reduces the risk of chronic disease leading to overall health and well-being.

CONCLUSION

It recognized that good nutrition is fundamental for children's current and future health, as well as their development and learning. The benefits of developing healthy dietary and lifestyle patterns from an early age onwards can positively impact on people's nutrition and health throughout their adult lives, and enhance the productivity of individuals and nations. Nutrition education is an important element in an overall strategy aimed at improving food security and preventing all forms of malnutrition. Schools (from pre-school to secondary) are ideal settings for promoting lifelong healthy eating habits and lifestyles.

Most countries in the region implement school health and nutrition programmes, including school feeding, deworming, vitamin and mineral supplementation, etc. Innovative, creative and effective school nutrition education programmes exist in some countries in the region. However, these are often small-scale and implemented as pilot projects, focus on children with special needs and prioritize the transfer of knowledge over the promotion of active learning and the creation of appropriate attitudes, life skills and behaviors. Generally, nutrition education is not systematically integrated into school curricula in the region.

FEATURE SCOPE

Due to the ignorance of healthy food habits, 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, which is the most basic method to avoid obesity. However, although food packaging comes with nutrition (and calorie) labels, it's still not very convenient for people to refer to App-based nutrient dashboard systems which can analyze real-time images of a meal and analyze it for nutritional content which can be very handy and improves the dietary habits, and therefore, helps in maintaining a healthy lifestyle.

The benefits of developing healthy dietary and lifestyle patterns from an early age onwards can positively impact on people's nutrition and health throughout their adult lives, and enhance the productivity of individuals and nations. Nutrition education is an important element in an overall strategy aimed at improving food security and preventing all forms of malnutrition. Schools are ideal settings for promoting lifelong healthy eating habits and lifestyles.

APPENDIX

Source Code :

App.py

```
from flask import Flask,render_template
 app=Flask(__name__)
@app.route('/')
def base():
    return render_template('base.html')
@app.route('/signup')
def signup():
    return render_template('signup.html')
@app.route('/login')
def login():
    return render_template('login.html')
@app.route('/home')
def home():
    return render_template('home.html')
@app.route('/blog')
def blog():
    return render_template('blog.html')
if __name__=='__main__':
    app.run(host='0.0.0.0',port=8080,debug=True)
```

base.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <link rel="stylesheet" href="/static/style1.css">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/css/bootstrap.min.css">
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/js/bootstrap.bundle.min.js"></script>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    {% block head %}
    {% endblock %}
    <style>
        .nav-link{
  color:white;
  font-size: 20px;
  padding:18px ;
}
.nav-item{
    padding-left: 5px;
    justify-content: left;
}
```

```
.btn{
    font-size: 20px;
}
.nav-link:hover{
   color: #009900;
 }
    </style>
</head>
<body>
    <nav class="navbar navbar-expand-lg bg-dark">
        <div class="container-fluid">
            <a style="color:#009900;" class="navbar-brand" href="#"><b style="font-family: 'Franklin Gothic Medium', 'Arial Narrow', Arial, sans-serif;">NUTRASSI</b></a>
                        <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarScroll" aria-controls="navbarScroll" aria-expanded="false" aria-label="Toggle navigation">
          <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarScroll">
          <ul class="navbar-nav me-auto my-2 my-lg-0 navbar-nav-scroll" style="--bs-scroll-height: 100px;">
            <li class="nav-item">
              <a   class="nav-link" aria-current="page" href="/home">Home</a>
             </li>
            <li class="nav-item">
              <a  class=" nav-link " href="/blog">Blog</a>
            </li>
```

```
            <li class="nav-item">
              <a  class="nav-link " href="/signup">Signup</a>
            </li>
             <li class="nav-item">
              <a  class="nav-link" href="/login">Login</a>
            </li>
          </ul>
        </div>
      </div>
    </nav>
    {% block body %}
    {% endblock %}
 </body>
</html>
```

Style.css

```
*{margin:0;padding:0;box-sizing:border-box;-webkit-font-smoothing:antialiased}
body{background:#e35869;font-family:rubik,sans-serif}
.form-control,#inputEmail3,#inputPassword3,#inputname3{
    width:10cm;
 }
 .container
{
     width:500px;
```

```
    height:500px;
    display: grid;
    padding: 100px ;
    margin: 10px;;
}
.content{
    color: black;
   display: -webkit-box;
   display: flex;
   -webkit-box-orient: vertical;
   -webkit-box-direction:normal;
   flex-direction:column;
   border-radius:4px;
   box-shadow:0 1px 25px rgba(0,0,0,.2);
   width:650px;margin:65px auto;
   padding: 50px 50px 50px 50px;
   text-align: center;
   height: 350px;

}
.content1{
    color: black;
   display: -webkit-box;
   display: flex;
```

```
    -webkit-box-orient: vertical;
   -webkit-box-direction:normal;
   flex-direction:column;
   border-radius:4px;
   box-shadow:0 1px 25px rgba(0,0,0,.2);
   width:650px;margin:65px auto;
   padding: 50px 50px 50px 50px;
   text-align: center;
   height: 475px;
 }
.button{
    border-style:inherit;
    border-radius: 12px;
  color: rgb(22, 19, 19);
  padding: 15px 32px;
  text-align: center;
  text-decoration: none;
  display: inline-block;
  font-size: 16px;
  margin: 4px 4px;
  cursor: pointer;
 }
  .button1:hover {
    background-color: #26dc6f; /* Green */
```

```
  }
 .button2:hover {
   background-color: #26dc6f; /* Green */
}
.button1 {
          background-color: #2696bb;
      float: left;}
.button2 {background-color: #2696bb;
         float: right;}
a{
   text-align: center;
   color: black;
}
```

GitHub & Project Demo Link

GitHub Link : IBM-EPBL/IBM-Project-7554-1658890619

Project Demo Link : https://youtu.be/_nnnUxCBCaw