NUTRITION ASSISTANT APPLICATION

1.Introduction

1.1 Overview

Evaluation of nutritional status is critical, either to identify if an individual has nutritional imbalance due to an underlying condition or to assess if an individual is likely to develop a pathological condition due to nutritional imbalance. A detailed, systematic evaluation of a patient's nutritional status conducted by healthcare providers in a team-based setting to diagnose malnutrition and identify underlying pathologies to plan intervention constitutes nutritional assessment. This article provides an overview of nutritional evaluation, including components of nutritional assessment, factors that affect nutritional status, and the role of inter professional teams involved in managing patients at nutritional risks.

Due to being ignorant of healthy food habits, obesity rates, diabetes, sleep apnea, fatty lever, etc. are increasing at an alarming speed which is reflective of the risks to people's health. According to CBS News large study, poor diet is associated with 1 in 5 deaths worldwide which is equivalent to 11 million deaths a year that makes unhealthy eating habits responsible for more deaths than tobacco and high blood pressure. People need to control their daily nutritional intake by eating healthier foods which is the most basic method to avoid these risks. However, although food packaging comes with nutrition labels, it's still not very convenient for people to refer packaged food due to the use of various preservatives which are not good for health.

Therefore, we developed a web-based nutrient dashboard system which can analyze real-time images of a meal for nutritional content which can be very handy and improves the dietary habits, and thus helps in maintaining a healthy lifestyle.

1.2 Purpose

Our purpose is that every food vendor and clients will be aware of the meal's quality and the nutrients that are present in the food in an instant. Previously before starting a good diet clients had to study about the nutritional components of each of the food material and calculate the overall nutritional supplements present in an individual food before consuming it. That is too much time consuming and false knowledge in this matter can lead to having unbalanced diet which can be rather cost effective.

But with this application clients can easily get to now about the nutritional components that is present in the food just by using our web application and by clicking a capture of image of the food or upload the food's picture from the galary in the module and the module will give you the nutrients that is present in that food as output.

2. Literature Survey

2.1 Existing System

Nutrient deficiencies are prevalent worldwide. Diseases and morbid conditions have been described to result from nutritional deficiencies. It is essential to address nutrient deficiencies as these may lead to chronic long-term health problems such as rickets, iron deficiency Anemia, Goiter, Obesity, coronary heart disease, type 2 diabetes, stroke, cancer and osteoporosis. In the present review we surveyed the extent and severity of nutritional deficiencies in Israel through a selective and comprehensive

Medline review of previous reports and studies performed during the last 40 years. Israeli populations have multiple nutritional deficiencies, including iron, calcium, zinc, folic acid, and vitamins B12, C, D and E, spanning all age groups, several minorities, and specific regions. In Israel, some of the nutrients are mandatorily implemented and many of them are implemented voluntarily by local industries. We suggest ways to prevent and treat the nutritional deficiencies, as a step to promote food fortification in Israel.

2.2 Proposed Solution

We are developed web application to take a picture of the food that is being served, the picture is stored in internal memory and automatically applied to the module. And that model is capable of predicting the kind of food image. after that the predicted output will be match to the dataset of composition of food nutrients. The output will be displayed as composition of all the nutrients present inside the particular food. on the web and mobile application's display once the process is complete.so, any people know the type nutrients and its composition of the food.

2.3 Hardware / Software designing

Hardware

1. No Hardware is required for this project.

Software

1. There is only one web application needed.
2. For application deployment, we use Red Hat OpenShift and docker-file.
3. We use Virtual Studio code for writing the code.

3.Experimental Investigation

Vitamin deficiencies remain major etiological factors in the global burden of disease, especially in low- and middle-income countries. The purpose of this state-of- the-art review was to update current information on deficiencies of vitamins and public health approaches to addressing them. Some stages of life present a higher risk of deficiency than others: risks are higher in pregnant women, children (from conception to young childhood), adolescents, the elderly, and all of the over 800 million people globally who are undernourished. At risk are approximately 125 million preschool children with vitamin A deficiency, as well as sub-populations at risk of deficiencies of folate,thiamine, vitamin B12, niacin, riboflavin, other B vitamins. and vitamin D. Addressing micro nutrient deficiencies requires identifying those at risk and then working to prevent and manage that risk.

Public health approaches include improved, diversified diets; supplementation; fortification and bio fortification; and other supportive public health measures.

Therefore, we have made the decision to create a user-friendly device. to assist folks who do not know the nutritional value of the food while they are purchasing. They buy food accordingly to their nutrient needs. In the field of medical, the equipment is quite beneficial.

By using the developed web application to take a picture of the food that is being served, the picture is stored in internal memory and automatically applied to the module. And that model is capable of predicting the kind of food image. after that the predicted output will be match to the dataset of composition of food nutrients. The output will be displayed as composition of all the nutrients present inside the particular food. on the web and mobile application's display once the

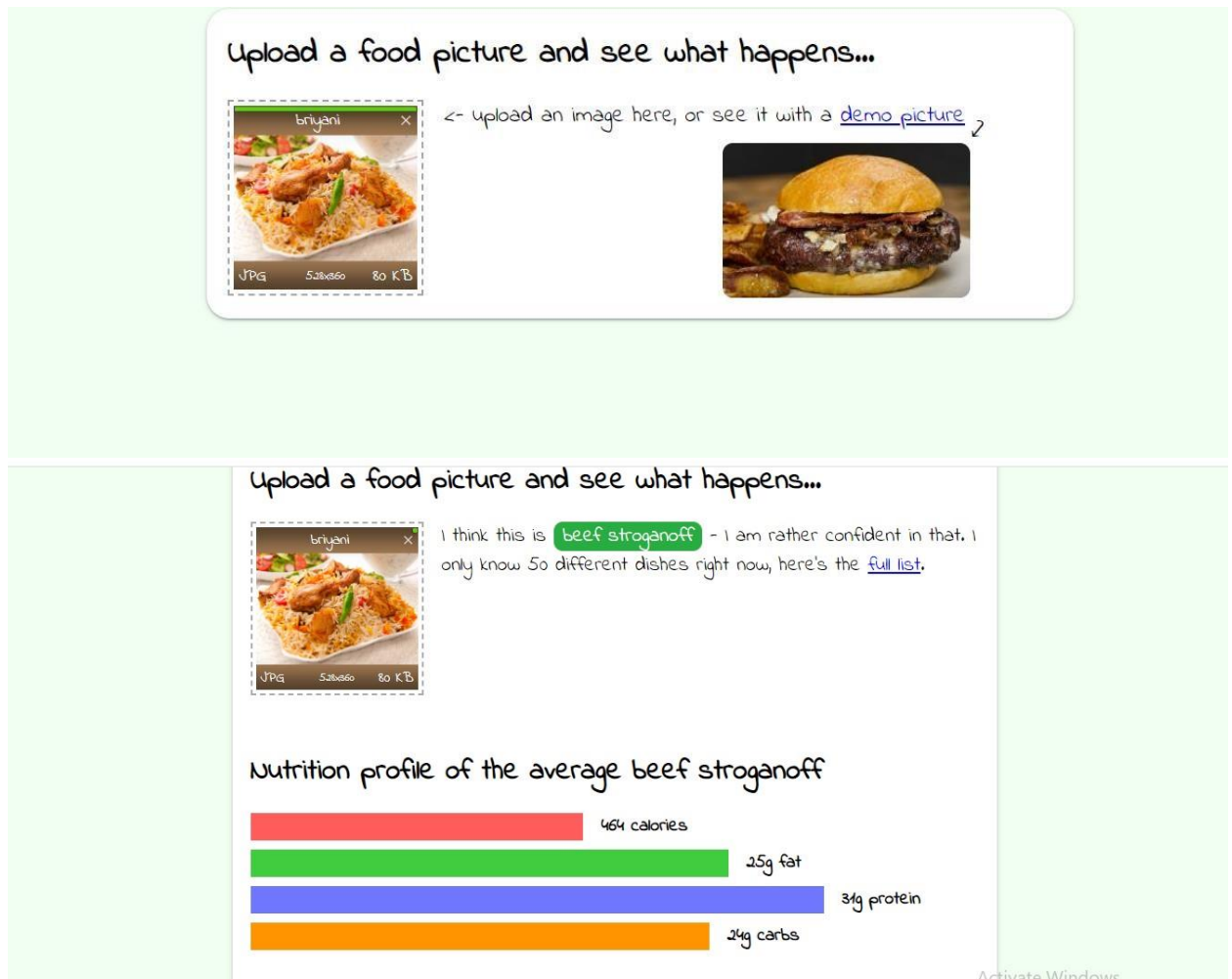process is complete.so, any people know the type nutrients and its composition of the food.

4.Flow chart of login
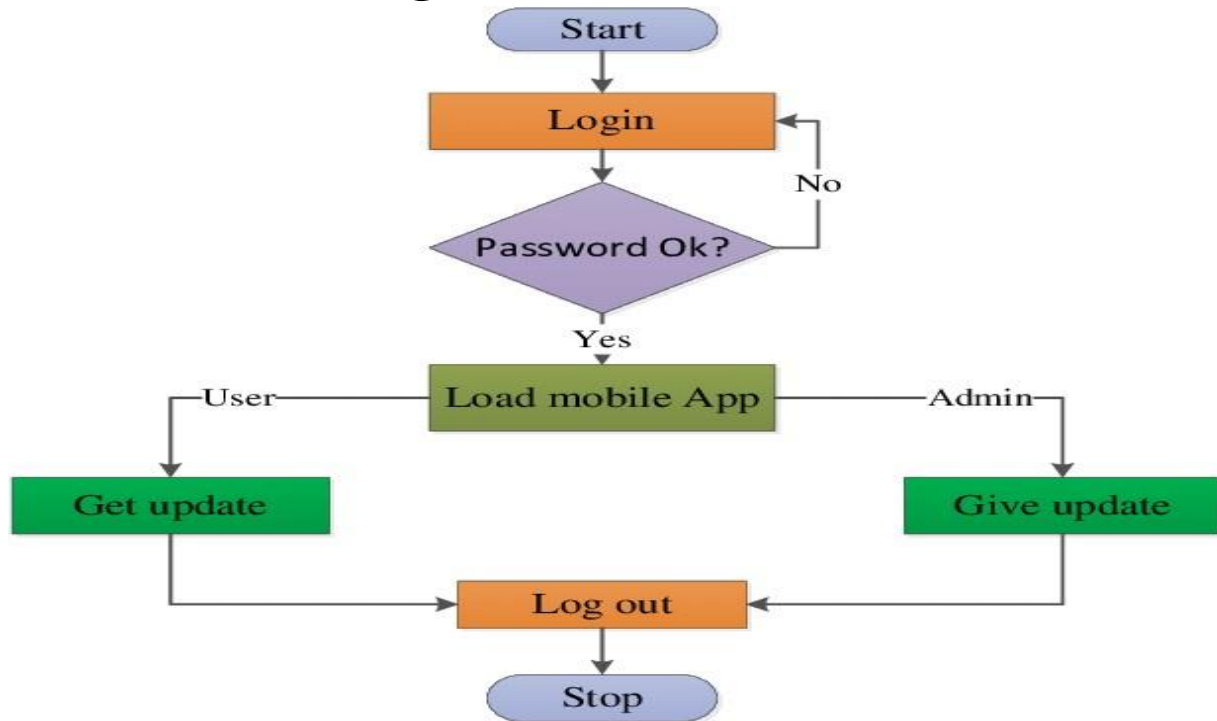
5.Architecture
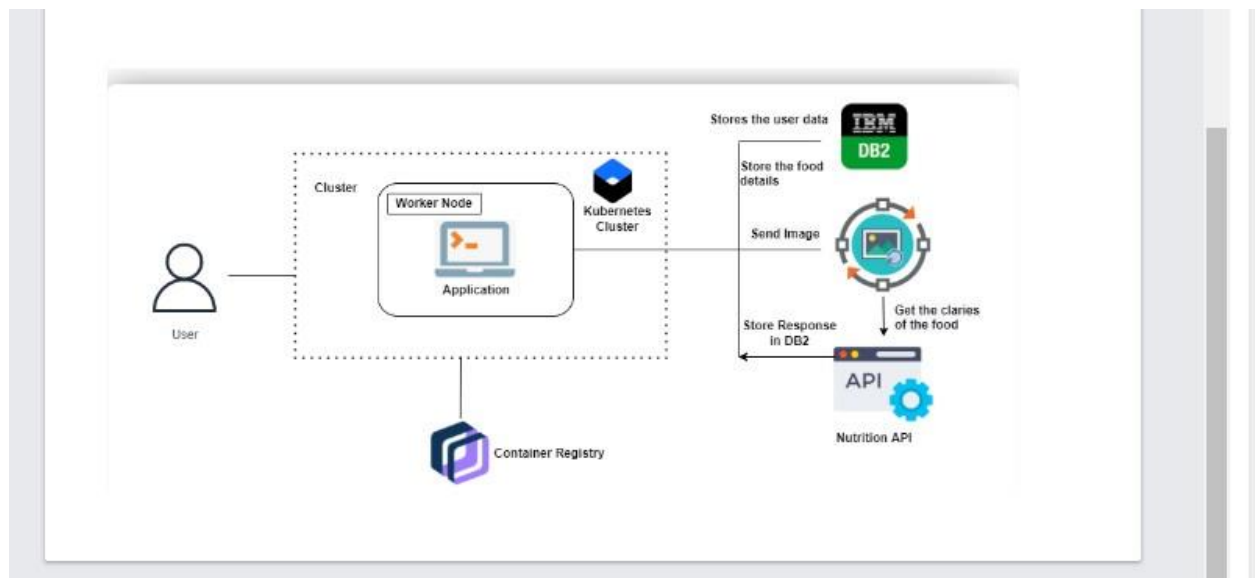
6.Result

7.Advantages and disadvantages

Advantages:-

1. This device is user friendly.
2. Its only required the image of the food.
3. To know the different type of nutrients present in food.
4. And also know that how much composition of the nutrients are present.
5. Output of the screen is easy understandable.

Disadvantage:-

1. This device is not able to predict the multiple image as input.
2. The internet is only necessary for opening the web application. (After converting the mobile app internet is not necessary for opening .)

Source Code

Homepage.html

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Healthchoice</title>
    <link rel="stylesheet" href="style.css" class="rel">
    <link rel="preconnect" href="https://fonts.googleapis.com">
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
    <link

href="https://fonts.googleapis.com/css2?family=Poppins:ital,wght@0,100;0,200;0,
300;0,400;0,500;1,100&display=swap"
        rel="stylesheet">
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/@fortawesome/fontawesome-
free@6.2.0/css/fontawesome.min.css">
    <!-- CSS only -->
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css"
rel="stylesheet"
        integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi
" crossorigin="anonymous">
</head>

<body>
    <nav class="header row container-fluid bg-light">
        <div class="title col-5">
            <h1>Healthchoice</h1>
```

```html
      </div>
      <div class="nav-links col-5">
        <ul>
          <li>
            <a href="registration.html">REGISTER</a>
          </li>
          <li>
            <a href="Login.html">LOGIN</a>
          </li>
          <li>
            <a href="https://spoonacular.com/food-api/image-analyzer-demo">UPLOAD IMAGE</a>
          </li>
          <li>
            <a href="#">HISTORY</a>
          </li>
        </ul>
      </div>

  </nav>

  <div class="text-box p-4 ">
    <h1 class="my-5">
      NUTRITION ASSISTANT APPLICATION
    </h1>
    <p>
      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.
    </p>
```

```html
      </div>
      <br>
    </section>
    <!-------data-->
    <section class="data ">
      <h1 class="pb-5">
        Nutrition Food
      </h1>
      <div class="row ">

        <div class="data-col">
          <p class=" p-4 ">
            Providing dieticians with the facility's meal and menu planning.
            Obtaining dietary information and assessing the nutritional habits of
patients.
            Recording individual risk factors or dietary restrictions that might
impact meal planning.
            Coordinating meal plans with nutritionists and healthcare
professionals.
            Performing ongoing nutrition assessments, including the measurement
of caloric intake and activity
            levels.
            Facilitating immediate interventions for signs of malnutrition, allergic
reactions, or refusal to
            eat.
            Assisting in meal distribution, ensuring correctly delivered, and timely
served meals.
            Maintaining proper sterilization protocols in the clearing away and
cleaning of plates and utensils.
            Safely discarding leftover portions to prevent the spread of disease.
            Instructing patients and families on nutrition plans and healthy eating
habits.

          </p>

        </div>
        <div class="col">
          <img src="Images/Benefits.jpg" width="300" height="250">
        </div>
      </div>
```

```html
        <br>
        <div class="row">
            <div class="col">
                <img src="Images/healthy-food.jpg" width="300" height="250">
            </div>
            <div class="data-cols p-4">
                Nutrient-dense foods are rich in vitamins, minerals and other nutrients important for health, without
                too much saturated fat, added sugars and sodium. We're talking fruits, vegetables, whole grains, non-fat
                and low-fat dairy, fish and seafood, unprocessed lean meat and skinless poultry, nuts and legumes.Water
                is the best choice for quenching your thirst. etes, and obesity.
            </div>
        </div>

    </section>
    <section class="upload">
        <h1>
            Nutrition Benefits
        </h1>
        <br>

        <div class="m-auto">
            <div class="upload-col">
                <img src="Images/Benefits.jpg">
                <div class="layer">
                    <h3><i><b>Food is essential</b></i><br> It provides vital nutrients for survival, and helps the body
                        function and stay healthy
                        A healthy diet throughout life promotes healthy pregnancy outcomes, 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.
                    </h3>
                </div>
            </div>
        </div>
    </section>
```

```
    </section>
    <div class="container-fluid bg-dark footer " data-wow-delay="0.1s">
        <div class="container py-5">
            <center class=" g-5">
                <div class="col-lg-3 col-md-6">
                    <h1 class="fw-bold text-primary mb-4">Healthchoice</h1>
                    <p class="text-white">Enjoy the taste of Eating right.<br> We are
assisting you to eat the delicious
                    food...</p>

                </div>
            </center>
        </div>
    </div>
    </div>
</body>

</html>
```

Login.html

```
<!DOCTYPE html>
<!-- Coding By CodingNepal - youtube.com -->
<html lang="en" dir="ltr">
 <head>
   <meta charset="utf-8">
   <title>Animated Login Form | CodingNepal</title>
   <link rel="stylesheet" href="css/Login.css">
 </head>
 <body>
   <div class="center">
     <h1>Login</h1>
     <form method="post">
       <div class="txt_field">
         <input type="text" required>
         <span></span>
         <label>Username</label>
       </div>
       <div class="txt_field">
         <input type="password" required>
         <span></span>
```
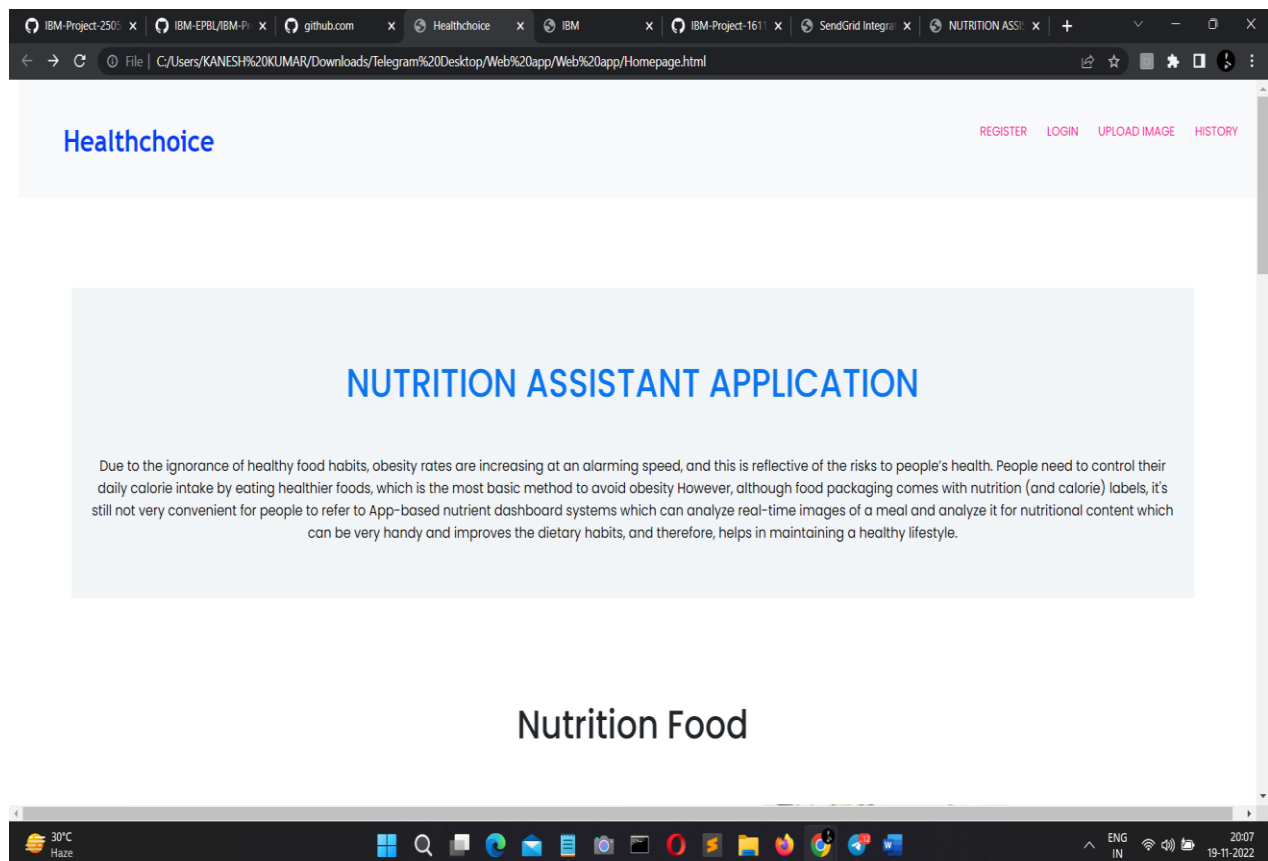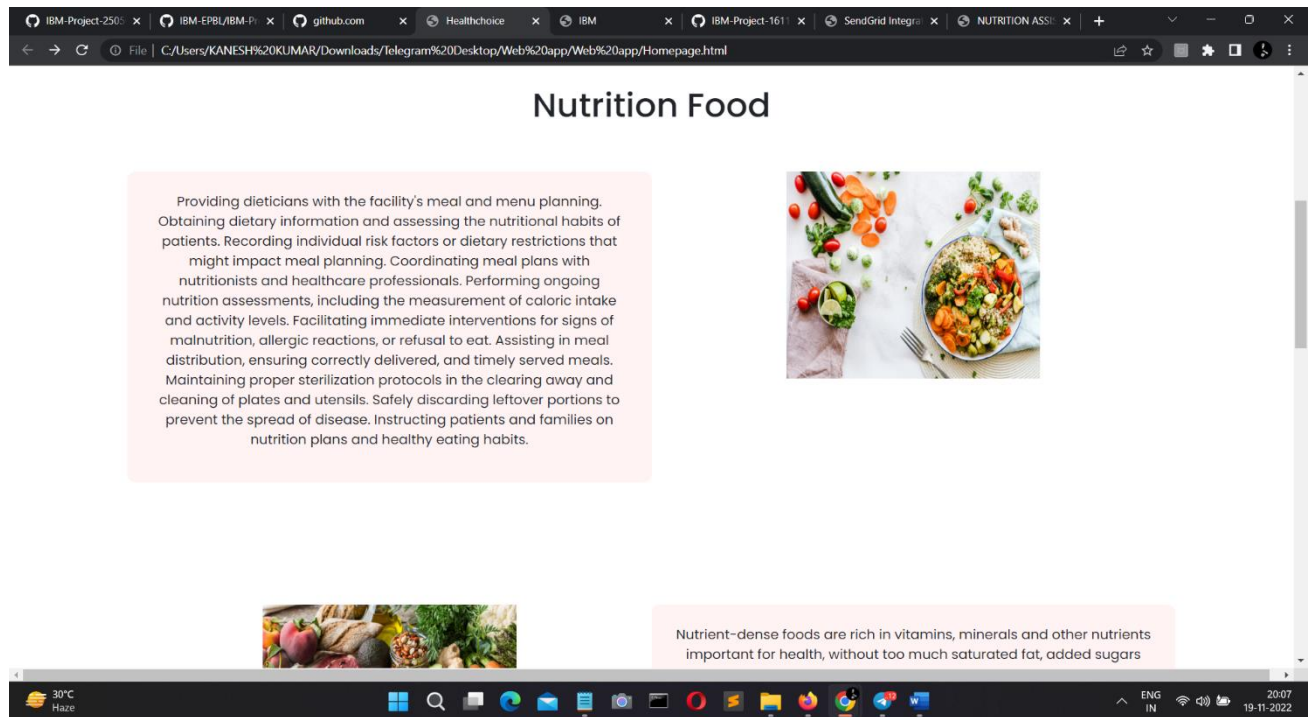
```html
      <label>Password</label>
    </div>
    <div class="pass">Forgot Password?</div>
    <input type="submit" value="Login">
    <div class="signup_link">
      Not a member? <a href="#">Register now</a>
    </div>
   </form>
  </div>
 </body>
</html>
```

Registration.html

```html
<!DOCTYPE html>
<html lang="en" dir="ltr">
 <head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="css/registration.css">
 </head>
<body>
 <div class="wrapper">
  <h2>Registration</h2>
  <form action="#">
   <div class="input-box">
    <input type="text" placeholder="Enter your name" required>
   </div>
   <div class="input-box">
    <input type="email" placeholder="Enter your email" required>
   </div>
   <div class="input-box">
    <input type="password" placeholder="Create password" required>
   </div>
   <div class="input-box">
    <input type="password" placeholder="Confirm password" required>
   </div>

   <div class="input-box button">
    <input type="Submit" value="Register Now">
```

```
    </div>
    <div class="text">
      <h3>Already have an account? <a href="Login.html">Login now</a></h3>
    </div>
  </form>
 </div>
</body>
</html>
```

Screenshots

UI Page

Registration Page

Login Page