Nutrition-Assistant-Application

Team Info

Team Lead

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Introduction:

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 Califia's AI-Driven Food Detection Model for accurate food identification and Food API's to give the nutritional value of the identified food.

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 of one's health, recommended by hospitals or the doctors to track the user daily food consumption, We will know more about this further.

Nutrition Assistant Application

Team id:PNT2022TMID43156

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 label, 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. Obesity rates are increasing, this is reflective to the risks in people's health they need to control daily calorie intake by healthier food We are providing a proper consultant for each of the customer about their health and also a proper diet plan or meal plan.

LITERATURE SURVEY

Author	Paper title	Year	Journal	Critics
Doustmohamm adin,A. et al	Food and nutrition literacy(FNLIT)	2019	Nutrition &Food Science Research (NFSR)	Absence of randomization, unbalanced baseline, andinadequate education inter-vention duration.
Rebecca Copeland	Food and Nutrition Technical Assistance Project Assessment	2002	Health and nutrition Bureau for global programs	Nutrition screening include not validating tools for specific patient populations, Inaccurate information and the use of invalidated laboratory values.
Alberto March	Nutritional care and support for patients with tuberculosis	2013	World Health Organization(WHO)	In patients with tuberculosis, it leads to reductionsatiety, micronutrient mal absorption and altered metabolism

				leading to wasting.

Hauptman . H	Effects and Challenge of using a nutrition assistance system	2021	Effects and Challenge of using a nutrition assistance System	About the system influence on the user physique, nutrition behavior, System interaction as well as the contextual limitations in real-life.
Heather Suzanne	Development of a Personal Diet Plan Database Application For Persons With Serve Food allergies	2005	Regis University	The major Development issue encountered were a direct result of the fact that the student was not an experienced java developer, Further more,all of her java experience was classroom based instead of real-world.

Robert Casey, N. Redel	Nutrition assistant programs	2019	United states government accountability office GOA	In include insufficient household food security, inadequate social, insufficient health service and unhealthy environment.

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 consumptionor 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.

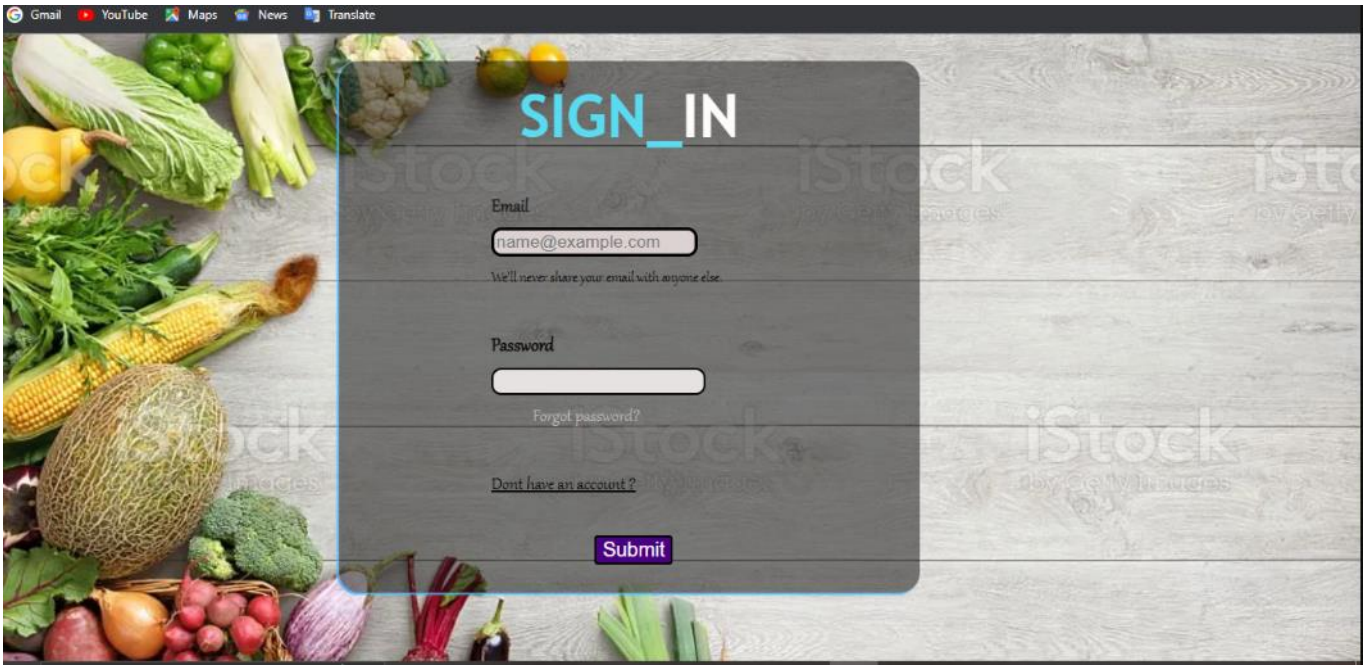
Proposed solution

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 andenter 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: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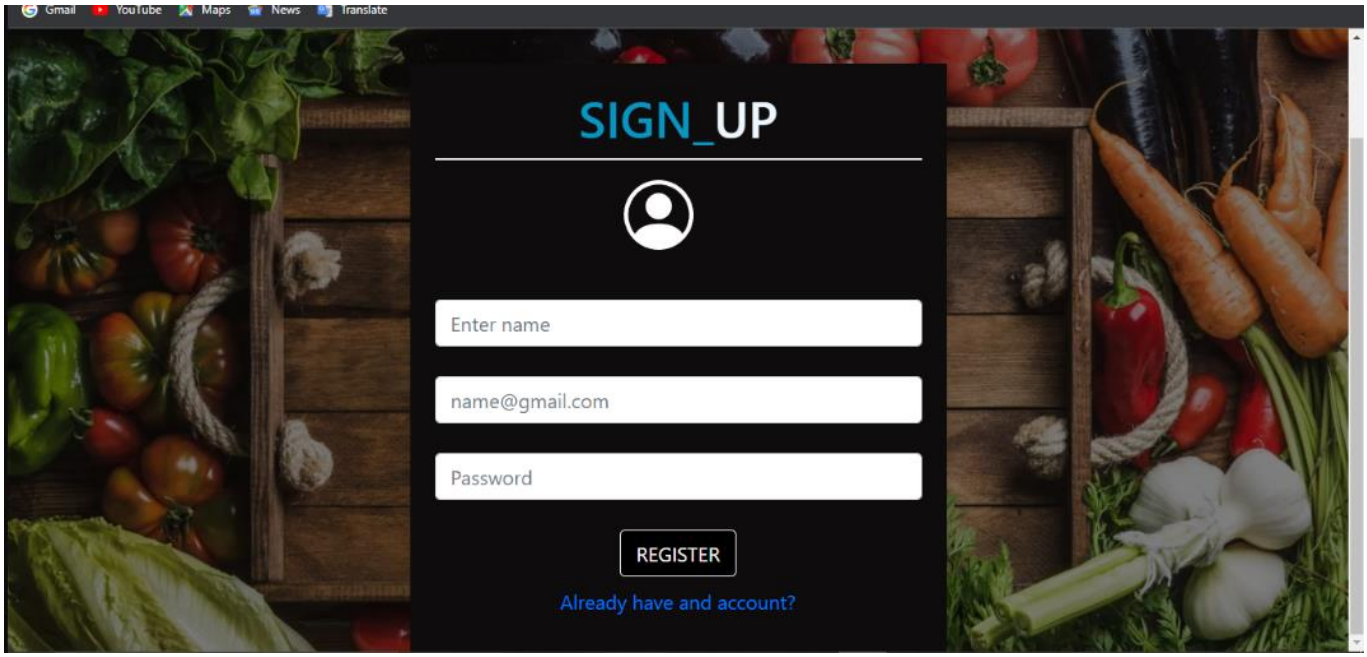
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Already have and account?

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NUTRITION FACTS

DIARY AND EGG PRODUCTS

CLICK HERE

SPICES AND HERBS

CLICK HERE

BABY FOOD

CLICK HERE

FATS AND OIL

CLICK HERE

POULTRY PRODUCTS

CLICK HERE

SOUP SAUCE AND GRAVIES

Gmail YouTube Maps News Translate

BEEF PRODUCT

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BEVERAGE

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FINFISH AND SHELFISH PRODUCT

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LEGUMES AND LEGUME PRODUCT

CEREAL GRAINS AND PASTA

CLICK HERE

FAST FOODS

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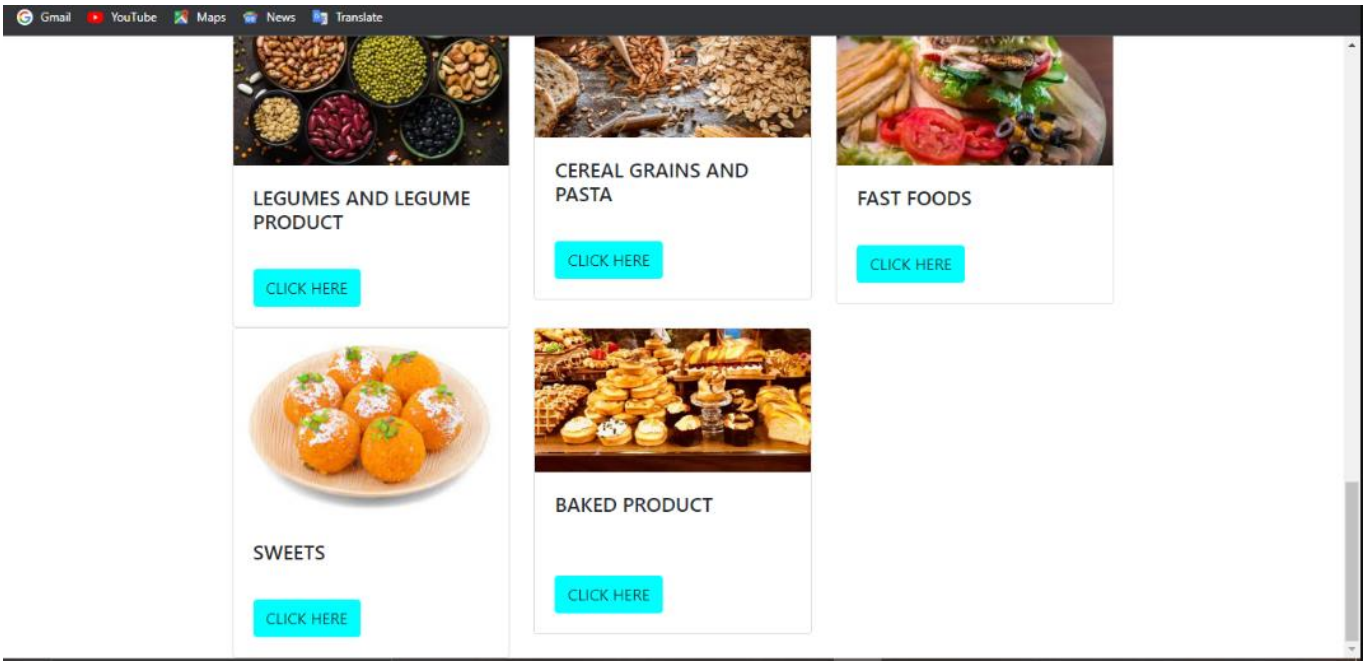
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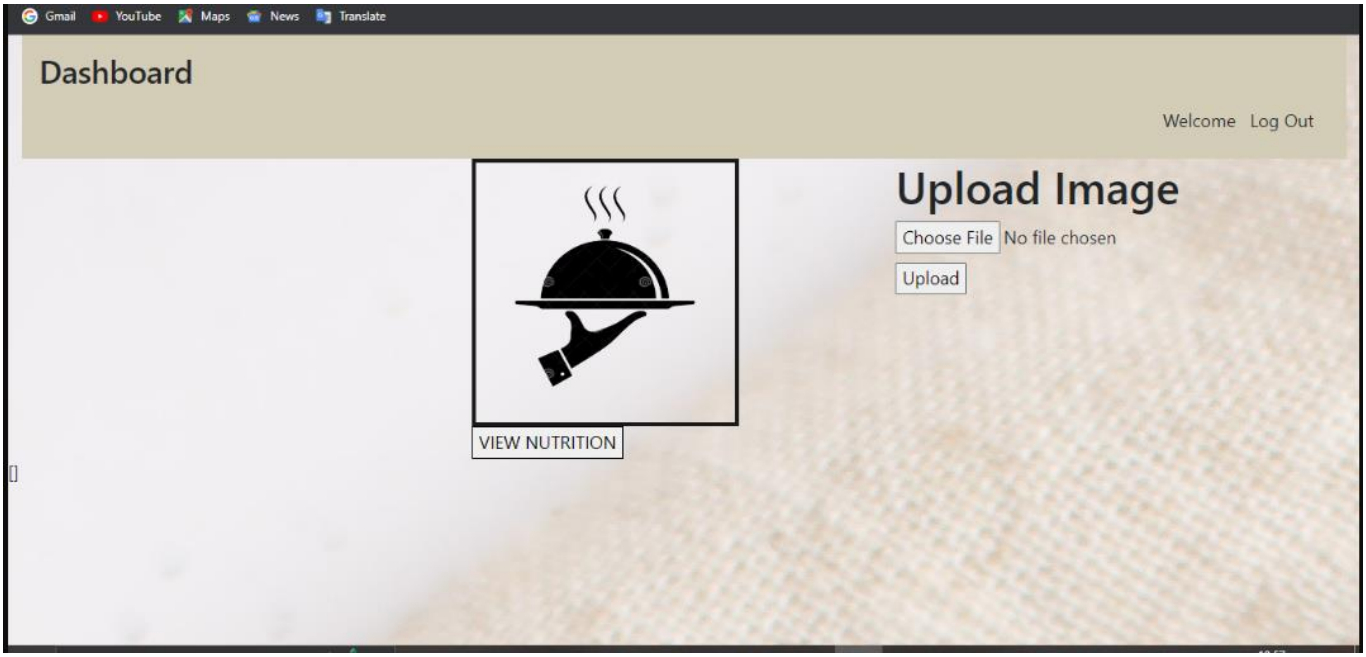
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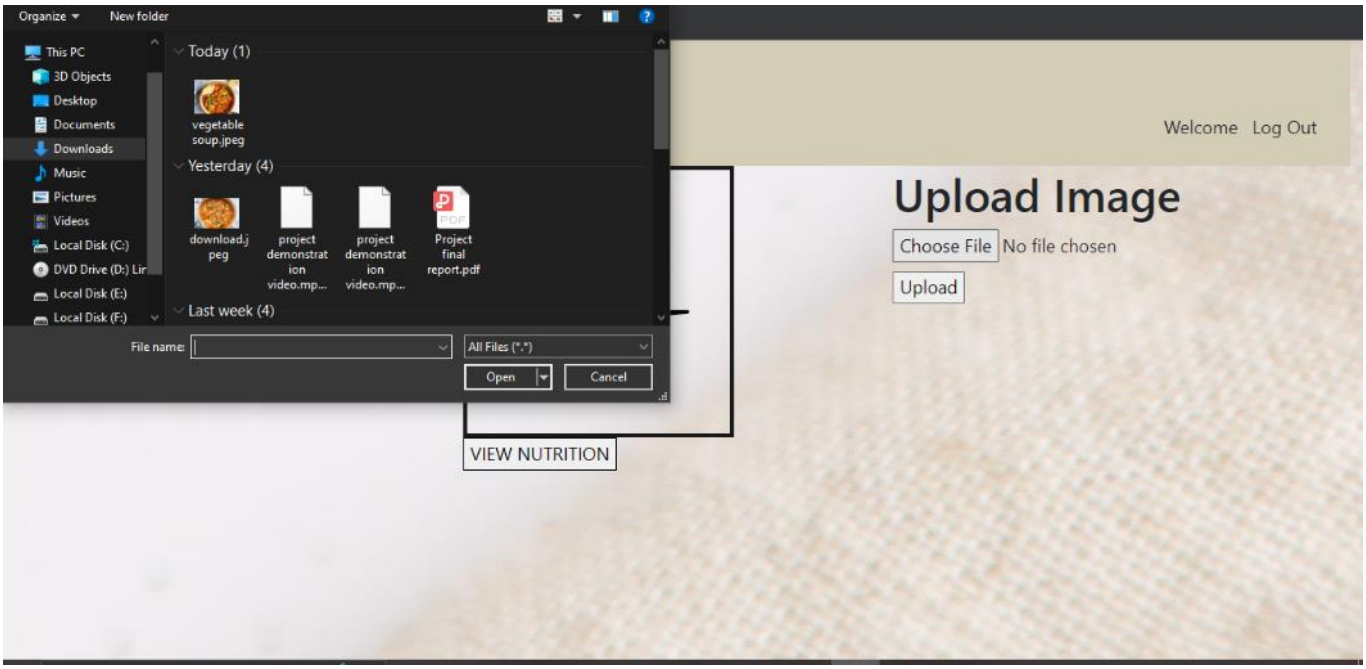
Organize
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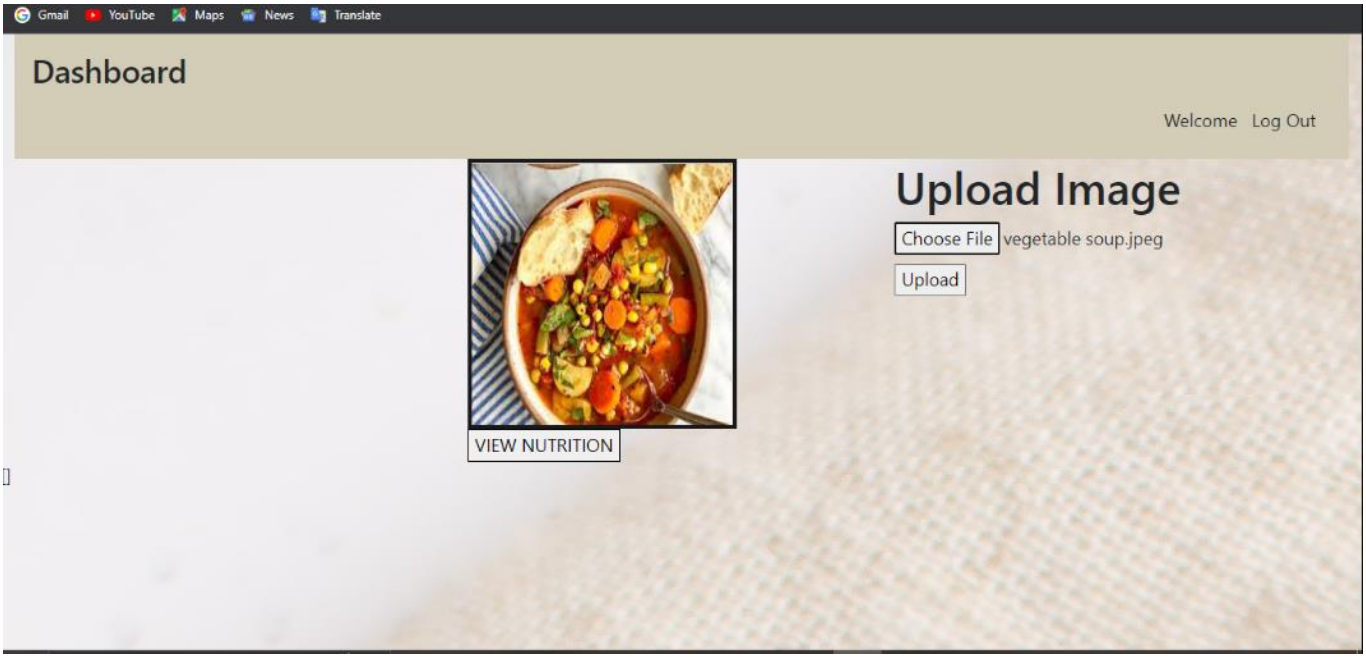
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VIEW NUTRITION

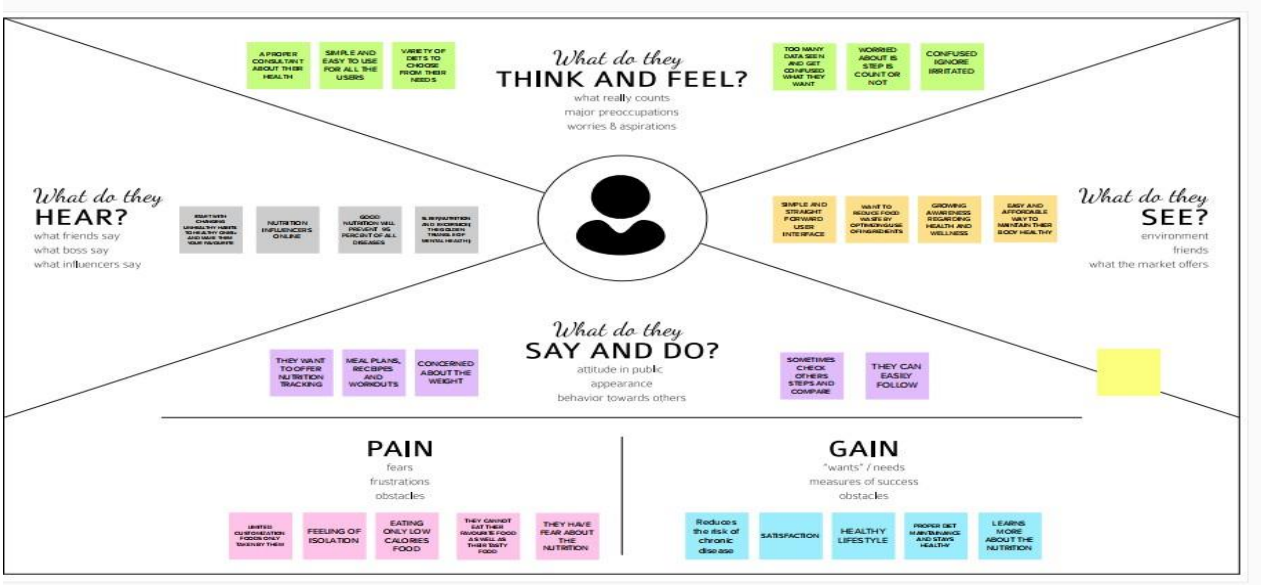
Problem Statement Definition:

However, although food packaging comes with nutrition (and calorie) labels, it's still not very convenient for people to refer. App-based nutrient dashboard systems which can analyze real time images of meal and analyze it for nutritional content can be very handy and improve the dietary habit

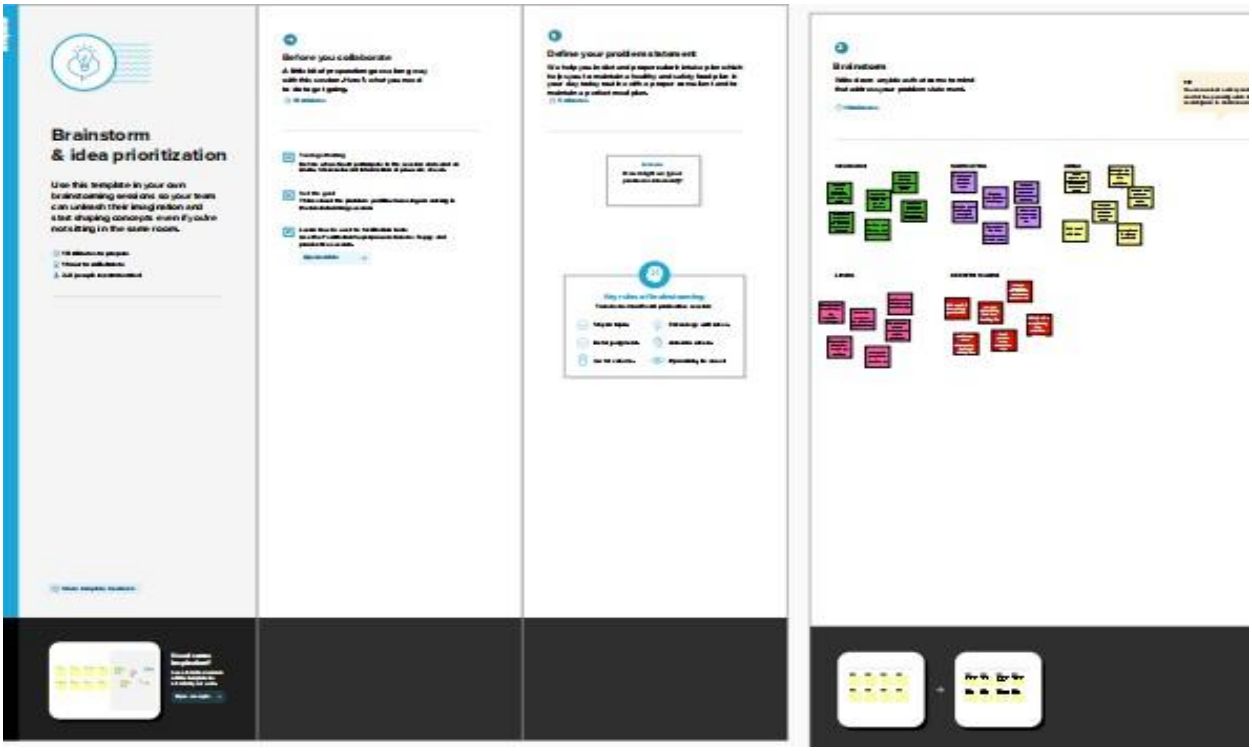
IDEATION & PROPOSED SOLUTION

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.

Empathy Map Canvas



Brain stroming:

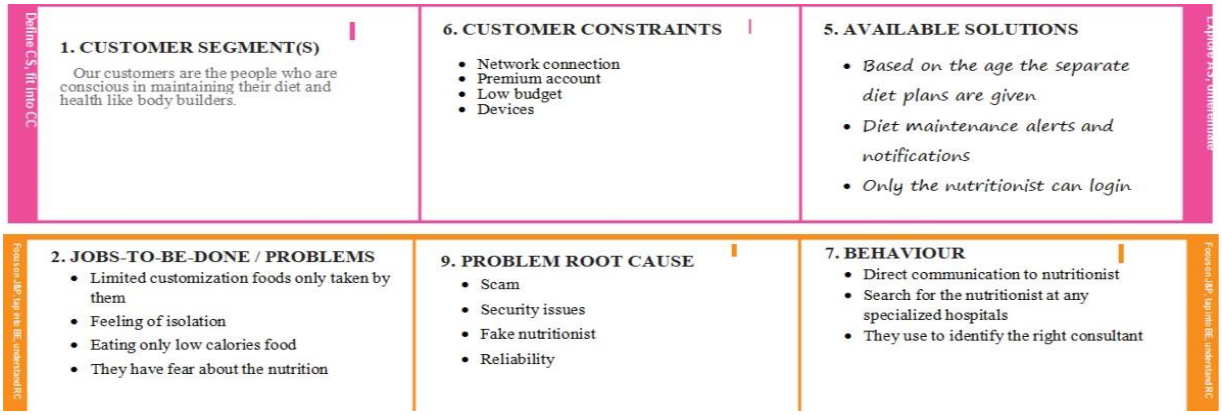


Proposed Solution:

With all the above factors I have included some more services that wouldbe useful to the user. Some of these are listed below. A demo service wherethe user can just enter the food name and the web app will tell the nutrients. This can be accessed without the registration whereas Bother pages can be accessed onlyafter the user registration.

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Obesity rates are increasing ,this is reflective to the risks in people's health they need to control daily calorie intake by healthier foods
2.	Idea / Solution description	We are providing a proper consultant for each of the customer about their health and also a proper diet plan or meal plan.
3.	Novelty / Uniqueness	This is also suitable for the moderate level users and also cost efficient
4.	Social Impact / Customer Satisfaction	It provides a better communication between the users and the consultant.
5.	Business Model (Revenue Model)	Social media is the best way to spread the word about our application. Premium activation is also available
6.	Scalability of the Solution	Information provided can be easily understand by children and elderly people

Problem Solution fit:



ANALYSIS REQUIREMENT

Functional requirement:

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 Form Registration through Gmail Registration through LINKEDIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	IBM cloud	Storing the user data IBM cloud required
FR-4	Object storage	Storing the object involved in this project (Reports, Images, Icon & etc) IBM object storage required
FR-5	Assistant chat box	For identification query of the user Watson assistant required
FR-6	Nutritionist consultation	It is required for the patients to register according to their needs

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	It can be easily access by the patients because it is implemented through the web application and it is also user friendly for all.
NFR-2	**Security**	It has the predetermined security for our application and the user data that are stored in database must be secured in the proper manner

NFR-3	**Reliability**	It is the reliable one because of its user friendly interface
NFR-4	**Performance**	There is no lag in our application while we are using at anywhere with a proper internet facilities
NFR-5	**Availability**	Once the user has been registered they can be see thier diet plan in offline also. It is mostly available for all the users those who are in need of health plan.
NFR-6	**Scalability**	It is cost effective and the premium activation is also available. So many users can easily operate.

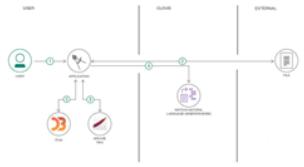
PROJECT DESIGN:

Data Flow Diagrams and & Solution Technical Architecture

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

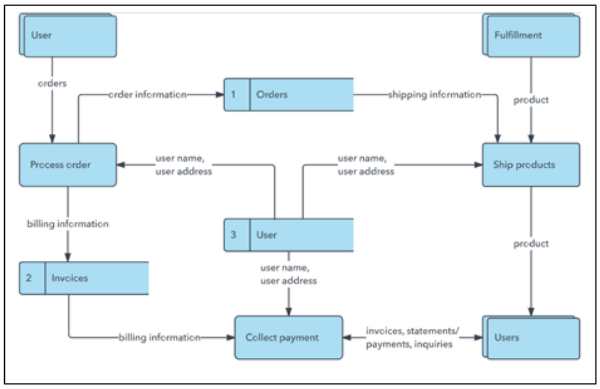
Example: (Simplified)

Flow



1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.

Example: DFD Level0 (Industry Standard)



ADVANTAGES AND DISADVANTAGES:

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.

Disadvantages:

As the food around the world is very diverse, it is difficult to recognizesome of the local foods. Both the APIs are having a very wide range of food images. But it's difficult to find all the food images.In order to overcome the above disadvantages I have given the field here one can directly enter the food name. We then process the name to the nutrient values.

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 consumedin what amounts.

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 goalof 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 fifit, from where we can get the calories lost and our web app give the data of nutrients to be consumed.

APPLICATIONS:

This application has the following applications. The uploaded food image is processed and then it's the nutrient value is displayed. The URL/The food name canalso 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 histable 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 totrack the food/nutrient consumption of the patient.

APPENDIX :

I have used IBM DB2 for storing the users database. Where it take 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.

GITHUB - LINK:

https://github.com/IBM-EPBL/IBM-Project-48608-1660810388