NUTRITION ASSISTANT APPLACTION DOCUMENTATION

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PROJECT TITLE:	NUTRITION ASSISTANT APPLICATION
DOAMIN:	CLOUD
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INTRODUCTION

CHAPTER-1

1.INTRODUCTION

Chronic diseases such as diabetes, obesity, and cardiovascular diseases are becoming the dominant sources of mortality and morbidity worldwide and recently an epidemic in many Asia Pacific countries. Unhealthy diet is one of the key common modifiable risk factors in preventing and managing chronic diseases. Personalized dietary intake intervention showed significant impact on influencing people's choice and promoting their health. The feedback on nutrition intake is substantial and behavioural changing when patients track their dietary intake for a considerable length of time. However, the burden of logging food makes compliance a challenge. Clinical studies rely on patients to recall dietary intake, which is time-consuming and prone to underestimation

1.1 PROJECT OVERVIEW

Good health can be achieved by maintaining good behaviours such as a good night sleep, enough exercise and good nutrition. However, the competitive environment nowadays prevents such good behaviours. Thus, this work aims to develop an application on mobile devices that is able to (1) record the daily sleeping, exercise and nutrition information, (2) analyse the collected information in order to provide a notification or an alarm, and (3) present the analysed results in a simple and easy to understand format. The proposed application can collect data from other application and from the users. A set of simple data analysis methods is performed on the collected data in order to provide a personal health advice based on the user pre-defined preferences.

1.2 PURPOSE

i. Nutrition assistants **help dieticians with providing proper nutrition at healthcare facilities**. They determine patients' nutritional needs, assess risk factors, and plan meals and menus. They also ensure proper sterilization of plates and utensil.

ii. Preventive nutrition services for this population, which include early identification and treatment, can help **alleviate malnutrition, growth retardation, frequent infections, dehydration, and other medical consequences**

iii. **To provide adequate knowledge and skills necessary for critical thinking regarding diet and health so the individual can make healthy food choices from an increasingly complex food supply**. To assist the individual to identify resources for continuing access to sound food and nutrition information.

LITERATURE SURVEY

CHAPTER-2

LITERATURE SURVEY

2.1 Existing problem

The daily nutritional data give us a rich insight into the behaviour of each user over a long-term intervention. First of all, we will compare the energy intake and the nutritional ability with the data from the standardized FFQ that we discussed in the previous section describes the energy intake in both surveys and from the daily tracking tool. In this figure, we combine data from all participants that were using the application (I, Q, CQ). As in our previous studies (Leipold et al. 2018), the energy measurement is higher in both FFQs than in the daily tracking. While the energy calculated based on the FFQ shows a decrease between the beginning of the study and the end, the daily tracking is much more consistent over time with similar median intakes at the beginning and end of the study. However, the energy intake seems to fluctuate strongly between days. Furthermore, the fluctuation changes around day 60, when the group Q and CQ stopped using the application, and the data only represents the I group or those participants that have not dropped out at that stage of the study.

Since the nutrient success (daily intake within optimal personal range) is dependent on a lot of other variables, as shown in Schäfer and Willemsen (2019), we looked at that dependency. The number of measurements decreases strongly over time. This decrease was not visible in the short-term

study (Schäfer and Willemsen 2019) since it only covered the first 12 days, which are also quite homogeneous in this study. Nutrients, which have no determined focus are mostly appearing at the beginning of the study. This is reasonable since the NoFocus state only appears when there is a lack of data to determine the focus. Both successful nutrients and unsuccessful nutrients are equally distributed over the time, indicating that the dropout is not influencing or biasing the success measurement. The distribution of focused and unfocused nutrients over time, groups and energy intake is always comparable. The only difference we note is that unsuccessful nutrients are occurring more strongly in the focused nutrients. This is to be expected since the algorithm determines the six worst-performing nutrients of the previous three days for the focus list. We further see that both qualitative and intervention group have more successful than unsuccessful nutrients. The CQ group, however, has an almost even split between the two. Finally, higher energy intake coincide with higher success rates as indicated in the daily energy and nutrient timelines.

To get a closer insight into the influence of the different parameters on the overall success, we built a multilevel logistic regression model. We decided to use a multilevel model to incorporate user differences without losing the power of modelling all collected interactions. The logistic regression is due to the binary nature of the outcome variable of optimal/successful vs non- optimal/-successful intake of a nutrient. We want to show that while on short-term, the application did not yet affect the nutritional ability over time, it will do so in the long-term. First, we want to prove the comparability of the short-term and the long-term dataset, in order to exclude any bias given by the different country, different nutritional database and different recipe dataset. Thus, we focus on the first 12 days of the dataset and compare the same model as in our short-term study (Schäfer and Willemsen 2019).Table 2 shows the comparison of the short-term dataset and the first 12 days of the long-term dataset. Although the estimates are different, in most

cases the variables show the same effect on the success in both models. Schäfer and Willemsen (2019) give a detailed discussion of these influences and coefficients. One important difference is that while the recommendations were a significant factor in the Dutch study, they are not in the German study. Also, in both studies, the time factor was not significant during the first 12 days. Now that we have shown the data behave in a similar way, we extend the model to the full long-term study. Table 3 shows the comparison of the first 12 days of the study with the full duration dataset. We can immediately see that with the additional available data, all the factors of the model become highly significant ($p < 0.001$). Thus, we can focus on the direction of the effects. As before, the Rasch scale is loosely represented in the tracked data, except for the fifth level that seems to be easier to achieve than expected, but as discussed in Schäfer and Willemsen (2019) also is highly influenced by the energy intake. Most importantly, the effect of time, that was not visible before is now a strongly significant positive effect. Also, the recommendation interactions, as the only representative for interactions in this model, are significant in the long term but not in the short term. As our previous work (Schäfer and Willemsen 2019) has shown, the recommendations may not be the best representation of interactions since the system has many more features intervening with the user's decision. Thus, the next section will consider the user's interaction with these features and their influence on the behaviour change.

2.2 References

- Achananuparp, P., Weber, I.: Extracting food substitutes from food diary via distributional similarity (2016). arXiv preprint arXiv:1607.08807
- Alrige, M., Chatterjee, S.: Easy nutrition: a customized dietary app to highlight the food nutritional value. In: Chatterjee, S., Dutta, K., Sundarraj, R.P. (eds.) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). LNCS, vol. 10844, pp. 132–145. Springer, Berlin (2018)
- Aune, D., Giovannucci, E., Boffetta, P., Fadnes, L.T., Keum, N., Norat, T., Greenwood, D.C., Riboli, E., Vatten, L.J., Tonstad, S.: Fruit and vegetable intake and the risk of cardiovascular disease, total cancer and all-cause mortality–a systematic review and dose-response meta-analysis of prospective studies. Int. J. Epidemiol. **46**(3), 1029–1056 (2017)
- Baecke, J.A., Burema, J., Frijters, J.E.: A short questionnaire for the measurement of habitual physical activity in epidemiological studies. Am. J. Clin. Nutr. **36**(5), 936–942 (1982)
- Brooke, J.: SUS-A Quick and Dirty Usability Scale. Usability Evaluation in Industry, pp. 189–194. CRC Press, Boca Raton (1996).
- Celis-Morales, C., Livingstone, K.M., Marsaux, C.F., Forster, H., O'Donovan, C.B., Woolhead, C., Macready, A.L., Fallaize, R., Navas-

Carretero, S., San-Cristobal, R., et al.: Design and baseline characteristics of the Food4Me study: a web-based randomised controlled trial of personalised nutrition in seven European countries.

Genes Nutr **10**(1), 265494 (2015)

- Celis-Morales, C., Livingstone, K., Marsaux, C., et al.: Effect of personalized nutrition on health-related behaviour change: evidence from the food4me european randomized controlled trial. Int. J.

Epidemiol. **46**(2), 578–588 (2016)

- Chen, J., Lieffers, J., Bauman, A., Hanning, R., Allman-Farinelli, M.: The use of smartphone health apps and other mobile health (mhealth) technologies in dietetic practice: a three country study. J. Hum. Nutr. Diet. **30**(4), 439–452 (2017).
- Chen, J., Gemming, L., Hanning, R., Allman-Farinelli, M.: Smartphone apps and the nutrition care process: current perspectives and future considerations. Patient Educ. Couns. **101**(4), 750–757 (2018).
- **Article Google Scholar**
- Chen, M., Jia, X., Gorbonos, E., Hong, C.T., Yu, X., Liu, Y.: Eating healthier: exploring nutrition information for healthier recipe recommendation. Inf. Process. Manag. **102051**, 102051 (2019)
- **Google Scholar**
- Clarke, R., Armitage, J.: Vitamin supplements and cardiovascular risk: review of the randomized trials of homocysteine-lowering vitamin supplements. In: Seminars in thrombosis and hemostasis, vol. 26, pp. 341–348. Thieme Medical Publishers, Inc., New York (2000)
- Enable cluster: Enable-cluster. (2017). Accessed 2017-08-11

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- Corso, G., Papagni, F., Gelzo, M., Gallo, M., Barone, R., Graf, M., Scarpato, N., Dello Russo, A.: Development and validation of an enzymatic method for total cholesterol analysis using whole blood spot. J. Clin. Lab. Anal. **30**(5), 517–523 (2016)
- Creative Commons: Cc by-sa 3.0. (2020). Accessed 2020-04-01
- D-A-CH (Deutsche Gesellschaft für Ernährung - Österreichische Gesellschaft für Ernährung -Schweizerische Gesellschaft für Ernährungsforschung - Schweizerische Vereinigung für Ernährung). In: Referenzwerte für die Nährstoffzufuhr. Umschau Braus Verlag (2008)
- Davis, C., Bryan, J., Hodgson, J., Murphy, K.: Definition of the mediterranean diet; a literature review. Nutrients **7**(11), 9139–9153 (2015)
- **Article Google Scholar**
- Ding, Y., Li, X.: Time weight collaborative filtering. In: Proceedings of the 14th ACM International Conference on Information and knowledge management, pp 485–492 (2005)
- Dunford, E., Trevena, H., Goodsell, C., Ng, K.H., Webster, J., Millis, A., Goldstein, S., Hugueniot, O., Neal, B.: FoodSwitch: a mobile phone app to enable consumers to make healthier food choices and

- crowdsourcing of national food composition data. J. Med. Internet Res. **16**(8), e37 (2014).
- Elsweiler, D., Harvey, M.: Towards automatic meal plan recommendations for balanced nutrition. In: Proceedings of RecSys, vol. 15, pp 313–316 (2015)

  Elsweiler, D., Harvey, M., Ludwig, B., Said, A.: Bringing the “healthy” into Food Recommenders. In: DMRS, pp. 1–4 (2015a)
- Elsweiler, D., Harvey, M., Ludwig, B., Said, A. Bringing the" healthy" into food recommenders. In: DMRS, pp 33–36 (2015b)
- Elsweiler, D., Ludwig, B., Said, A., Schaefer, H., Trattner, C.: Engendering health with recommender systems. In: Proceedings of the 10th ACM Conference on Recommender Systems—RecSys ’16, pp. 409–410 (2016)
- Ernährungsumschau: Personalisierte Ernährungsempfehlungen direkt aufs Smartphone. (2019). Accessed 2019-03-01
- Fallaize, R., Franco, R.Z., Hwang, F., Lovegrove, J.A.: Evaluation of the eNutri automated personalised nutrition advice by users and nutrition professionals in the UK. PLoS ONE **14**(4), e0214931 (2019).
- Ferrara, G., Kim, J., Lin, S., Hua, J., Seto, E.: A focused review of smartphone diet-tracking apps: usability, functionality, coherence

- withbehavior change theory, and comparative validity of nutrient intake and energy estimates. JMIR mHealth uHealth **7**(5), e9232 (2019)

2.3 Problem Statement Definition

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a student	I'm trying to reduce my weight.	I'm unaware about the food habits.	There are so many types of diets to follow	Confused
PS-2	a pregnant women	To follow a proper food diet.	I'm not sure on what to have and what not to.	There are so many foods that seem to be healthy but actually not.	Unclear
PS-3	a student	reduce my weight as I have PCOS.	I'm not sure what diet to follow	I don't know what type of food should be consumed by me	Frustrated
PS-4	a diabetic patient	get a clear idea on the food habits for me.	but i dont know where to gain the knowledge about it.	There are so resourses for nutrition health but no clear idea.	Confused

FIG 2.3 PROBLEMSTATEMENT DEFINITION

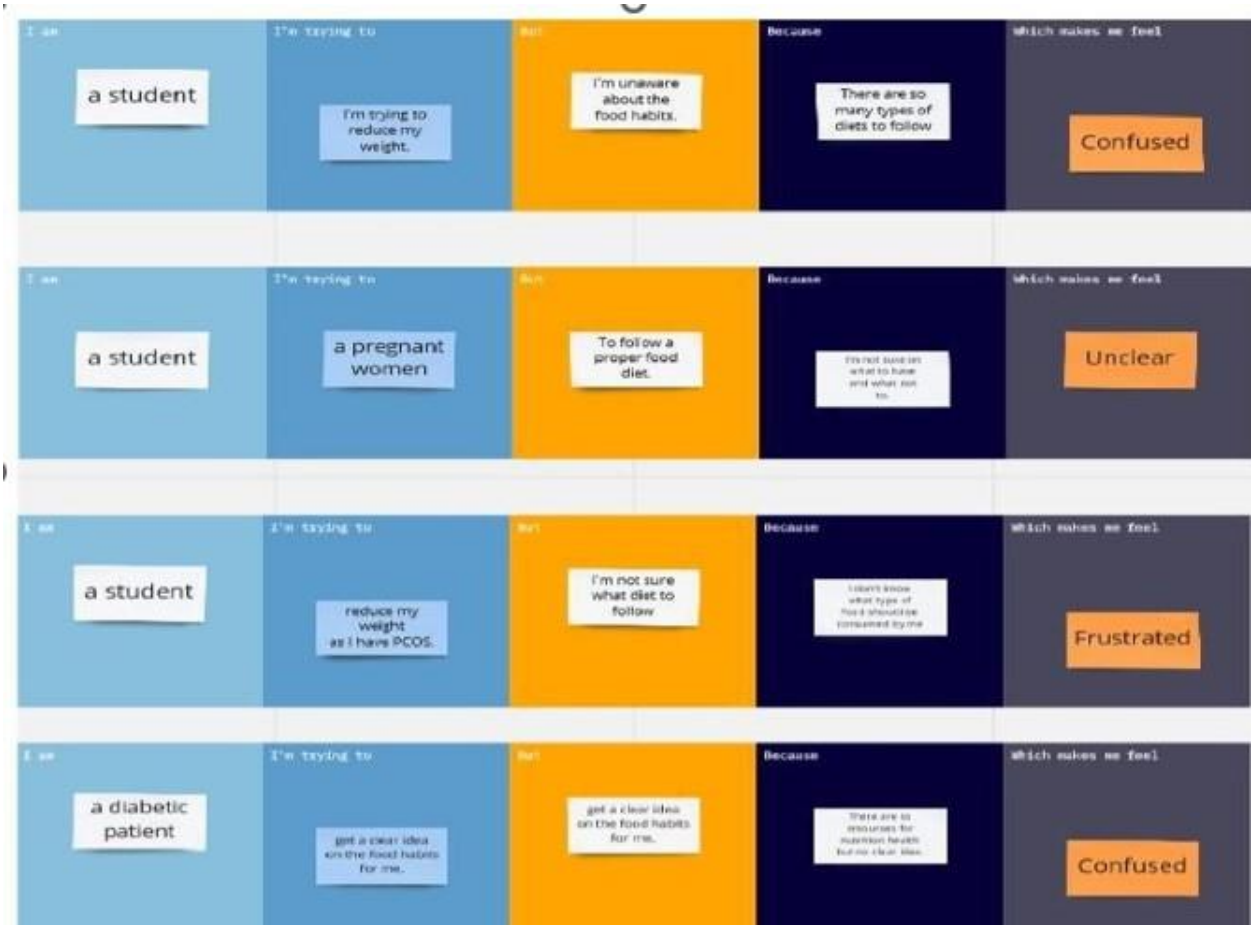


FIG 2.1 PROBLEMSTATEMENT DEFINITION

A nutritional problem or deficiency refers to a condition when an individual's body experiences a shortage of essential nutrients or some specific nutrient. Such problems can give rise to several

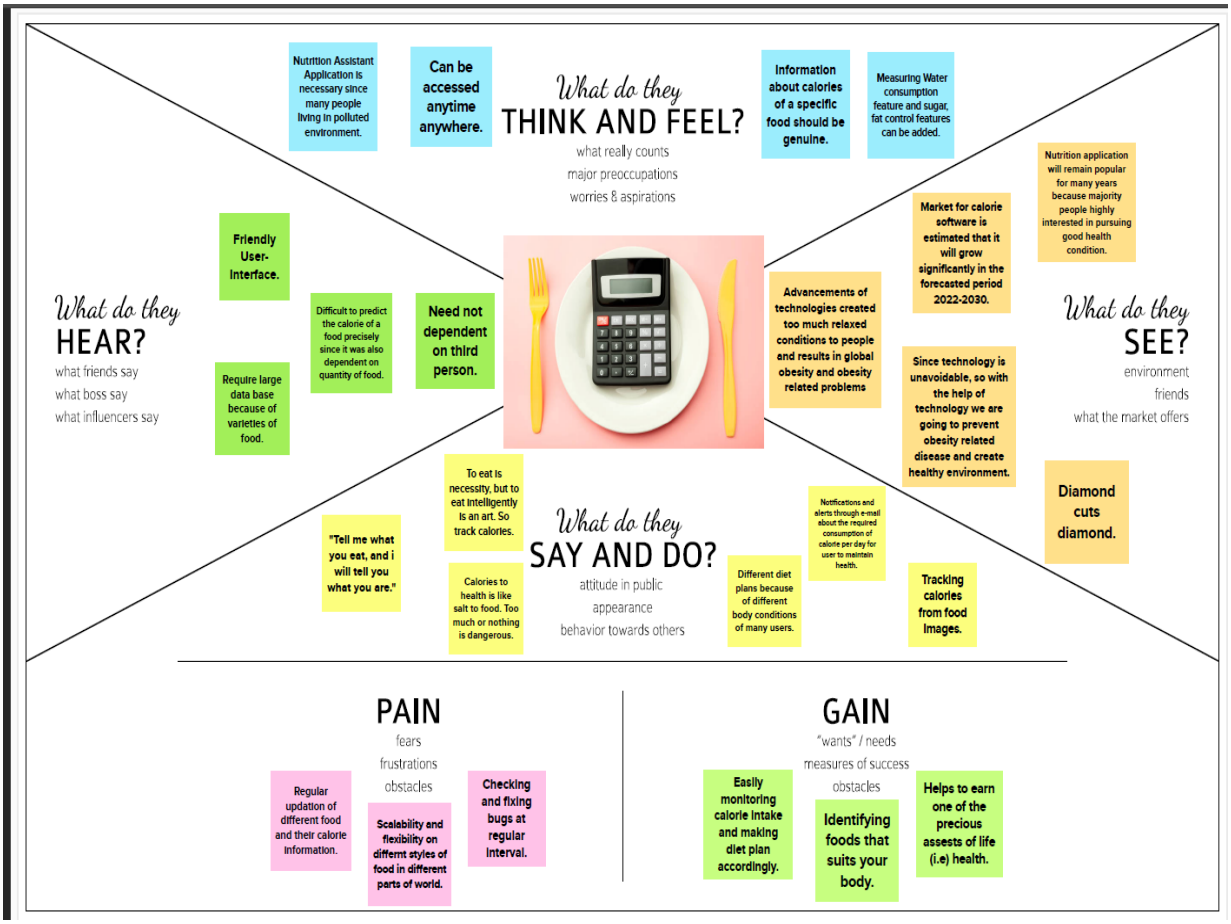
health issues such as anaemia. At the same time, it must be noted that these problems can be prevented by consuming a balanced diet.The human body needs nourishment in a balanced manner to carry out all its biological processes optimally. The micro and macronutrients which one needs are not synthesised naturally inside the human body. Hence, your diet plays a significant role in this scenario. The nutritional problems in India mainly arise when there is a lack of essential nutrients within the human body.

IDEATION & PROPOSED SOLUTION

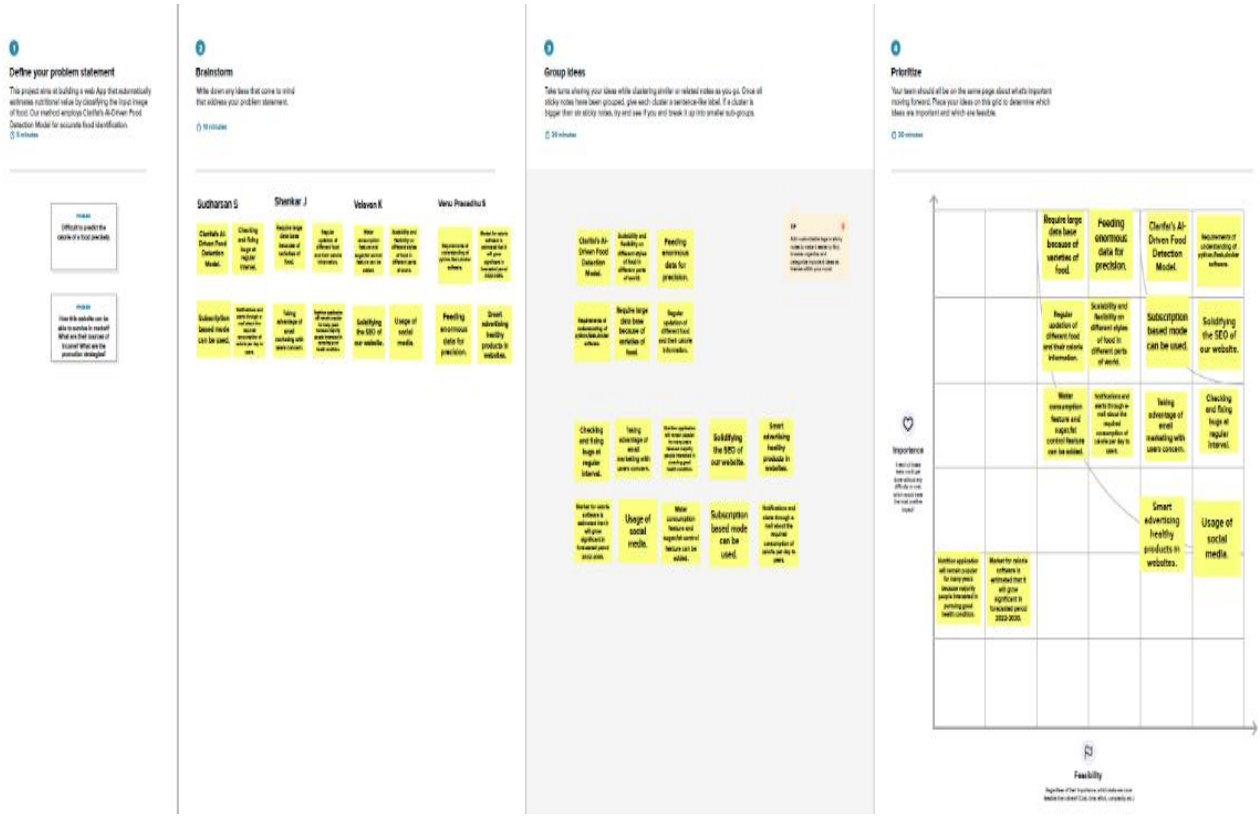
chapter-3

IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming



3.3 Proposed Solution

Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID02484
Project Name	Project – Nutrition Assistant Application
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	• Classification of the type of food and their nutritional value is difficult since there are many food cultures and food products in this world.
2.	Idea / Solution description	• This project aims at building a web App that automatically estimates nutritional value by classifying the input image of food. Our method employs Clarifai's AI-Driven Food Detection Model for accurate food identification.
3.	Novelty / Uniqueness	• Using a database which contains the nutrition values of the food available globally. • Different diet plans for different body conditions of many users. • Veggies and meat foods.
4.	Social Impact / Customer Satisfaction	• Daily updates of the calories intake through the customer's email. • Extra features like blood glucose level detection, water consumption per day. • Applying CRM (Customer Relationship Management) for customer satisfaction.
5.	Business Model (Revenue Model)	• Acquiring data of food products from various food research organizations. • Customized diet charts based on the calories intake. • Health-Trade-Policy.
6.	Scalability of the Solution	• Flexible UI (User Interface). • Cost efficient. • Easy to access.

3.4 Problem Solution fit

The Problem solution 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.

3.4.1 purpose

i) Solve complex problems in a way that fits the state of your customers. ii) Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behaviour.

iii) Sharpen your communication and marketing strategy with the right triggers and messaging.

iv) Increase touch-points with your company by finding the right problem-behaviour fit and building trust by solving frequent annoyances, or urgent or costly problems.

v) Understand the existing situation in order to improve it for your target group.

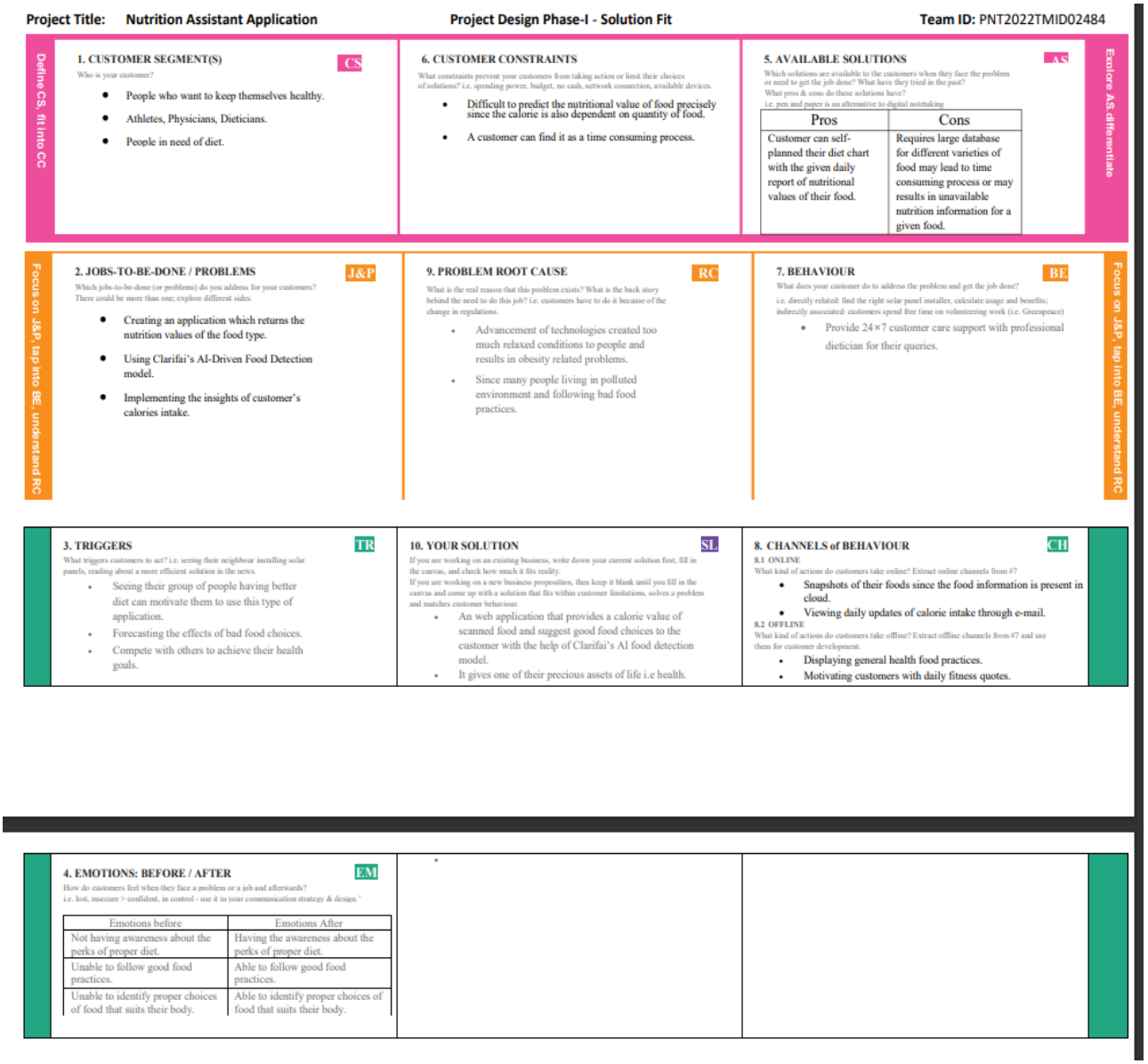


FIG 3.1 PROBLEMSOLUTION FIT

REQUIREMENT ANALYSIS

CHAPTER-4

REQUIREMENT ANALYSIS

4.1 Functional requirement

Functional Requirements:

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 email.
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Getting input food images	Getting access to user's camera and gallery app for uploading the food images in web application.
FR-4	Nutrition summary of input food images	Displaying the nutrition of input food images.
FR-5	Food History	Food history must be remembered for 45 days.
FR-6	Diet plan	It should suggest a diet plan from the nutritional data of past 1 week food data.

4.2 Non-Functional requirements

SAFETY AND SECURITYREQUIREMENTS

User Identification:

The system requires the user to identify himself/herself User

Login ID:

Any user who uses the system shall have a Login.

Modification:

Any modification (insert, delete (or) update) for the Database shall be synchronized and done only by the admin in the ward. Admin Rights:

Admin shall be able to view and modify the information.

Non-functional Requirements:

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

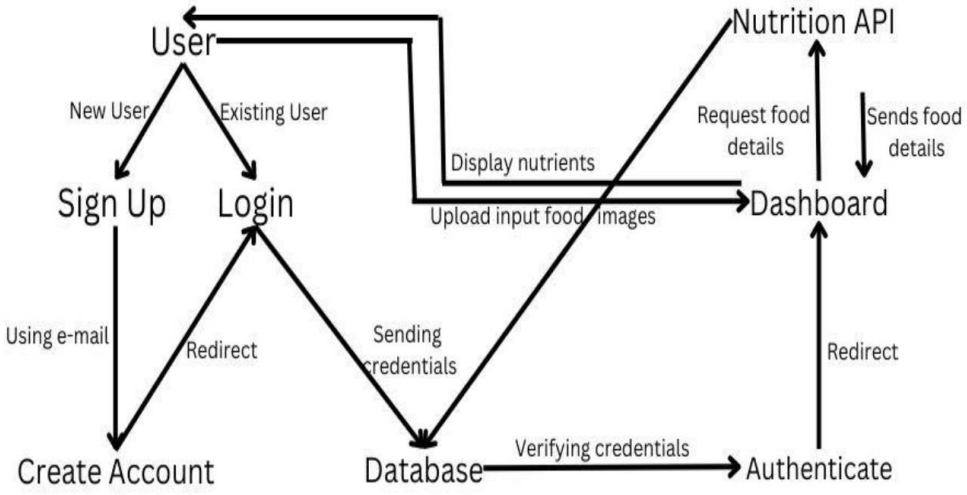
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	User interface should be flexible and friendly so that it should attract users.
NFR-2	**Security**	It is achieved by having individual user's profile with strong password and should be verified by using OTP in given user e-mail account.
NFR-3	**Reliability**	The user can reliable on our websites since security is synced with their respective e-mail accounts.
NFR-4	**Performance**	The webpage should be responsive to real time operations.
NFR-5	**Availability**	24×7 working website and customer care for queries.
NFR-6	**Scalability**	The database should be well equipped for large number of loads of user's information and performance should not be compromised.

PROJECT DESIGN

chapter-5

5.project design

5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture

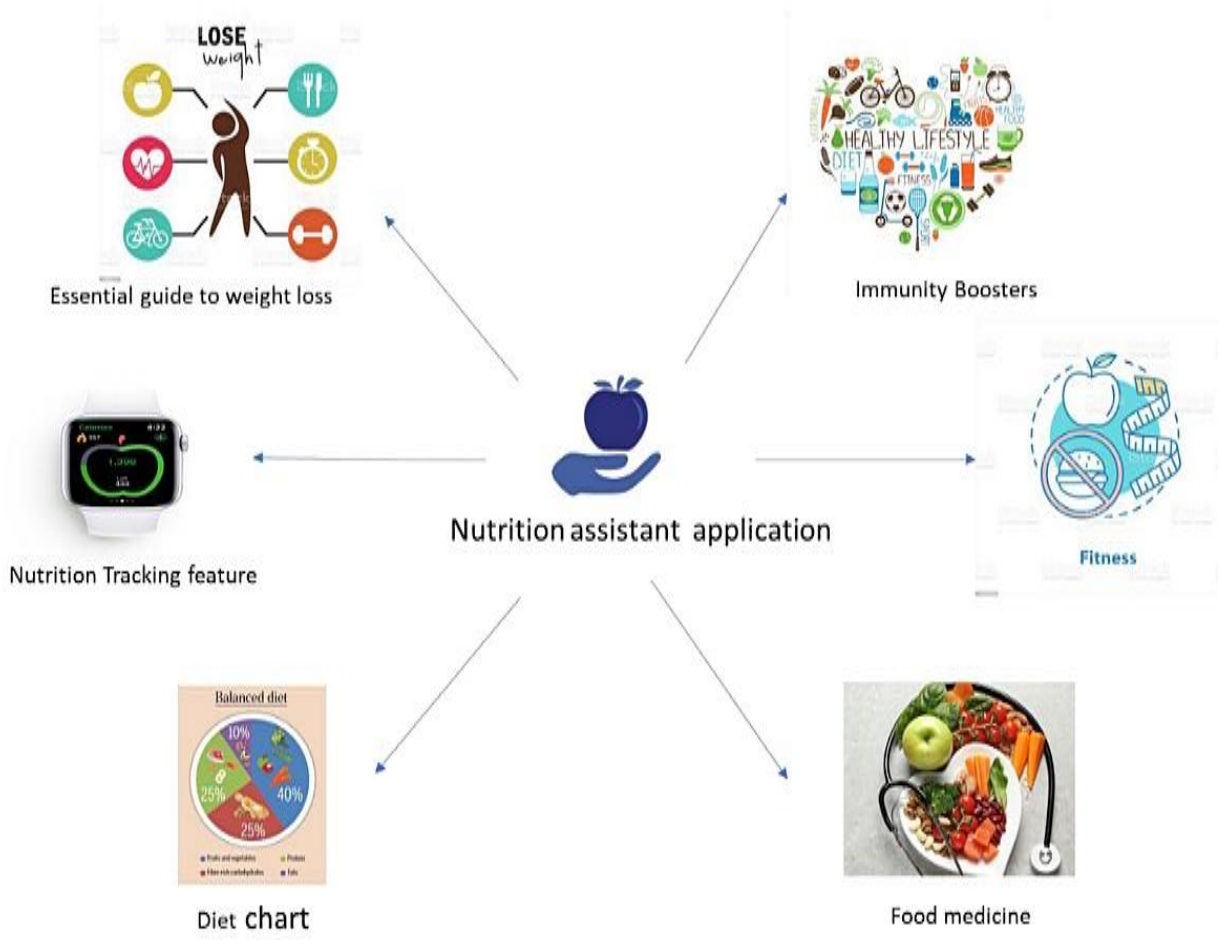
PROJECT DESCRIPTION:

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 analyse real-time images of a meal and analyse 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.

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode



SOLUTION:

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

PROCEDURE:

1. IMPLEMENTING WEB APPLICATION
    a. Registration (Push the registration data into the database)
    b. Login (Fetch the data upon login)
    c. Upload the food image and get the prediction
    d. Get Calories from the food items
    e. Add food data to the database

2. CREATE UI TO INTERACTWITH THE APPLICATION
    a. Registration Page
    b. Login Page
    c. Upload Image page

d. Prediction results page for food items

e. View history of items

3.CREATE IBM DB2 AND CONNECT WITH PYTHON

a. Create the IBM Db2 service in the IBM cloud and connect the python code with DB.

4. INTEGRATE NUTRITION API

Integrate the Nutrition API to the flask with API call

APPROACH

Nutrition assistant application is designed to compress the broad knowledge that exists in nutrition, Many people will be attracted to Nutrition because they have special dietary needs.

Some had food allergies or sensitivities; others were vegan or vegetarian; many were pregnant. A number of pregnant women reached out to us asking for more detailed information and guidance. KUBERNETES CLUSTERS - Kubernetes clusters allow containers to run across multiple machines and cloud based application. IBM DB2- Used for Backup & recovery. Comprehensive data resilience for physical and virtual servers. Cloud hosting.

Dedicated, virtual private, and bare metal server options

CONTAINER REGISTRY - Container Registry is a single place for your team to manage Docker images, perform vulnerability analysis, and decide who can access what with fine-grained access control

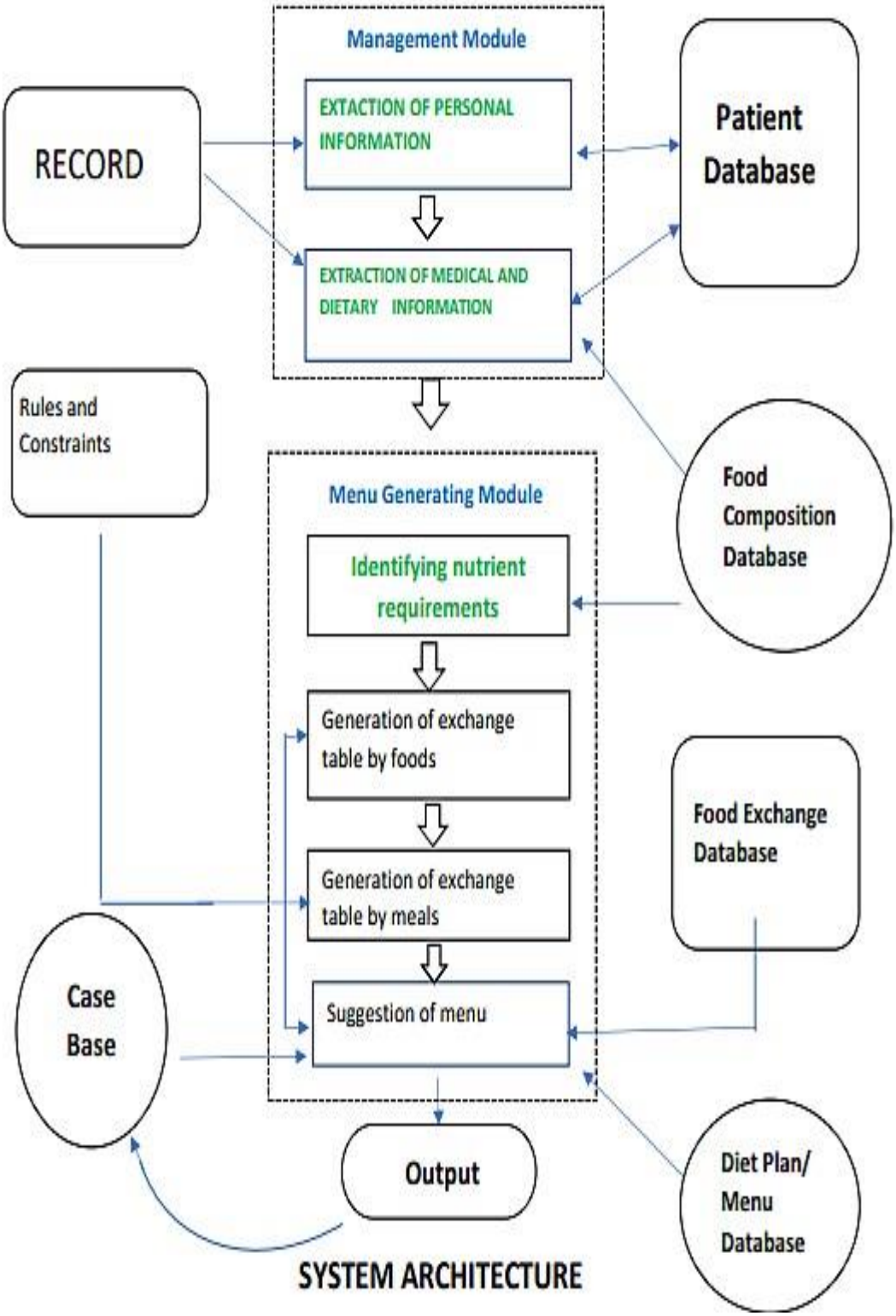
NUTRITION API **-** A nutrition API acts as a container for information from thousands of products. When an application sends a GET request to the API, it returns the nutrition

information about a given product.

RESULT:

Despite processing, we do not believe that our outcomes are flawless. There is always opportunity for improvement in your procedure because cloud computing is a topic that is constantly developing. Additionally, there will always be new approaches that offer better results for the same problems. It has been done, the application. Clarifai's AI-Driven Food

Detection Model Service, NutritionAPI.



SYSTEM ARCHITECTURE

5.3 User Stories

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration or sign up	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
		USN-3	As a user, I can register for the application through Facebook.	I can register & access the dashboard with Facebook Login.	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail.	I can reset the password by sending OTP through Gmail.	Medium	Sprint-2
	Login	USN-5	As a user, I can log into the application by entering email & password.	I can access the dashboard.	High	Sprint-1
	My Account	USN-6	As a user, I can fill my personal details.	I can view/edit my personal details.	High	Sprint-2
		USN-7	As a user, I can log out my account.	I can log out my account.	Medium	Sprint-1
	Dashboard	USN-8	As a user, I can upload images from gallery/camera.	I can access camera/gallery application.	High	Sprint-1
		USN-9	As a user, I can enter my diet chart and allow app to recommend food based on my diet chart.	I can enter my diet chart and get suggested food based on my diet chart.	Medium	Sprint-2
Customer (Web user)	Registration or sign up	USN-10	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-11	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
		USN-12	As a user, I can register for the application through Facebook.	I can register & access the dashboard with Facebook Login.	Low	Sprint-2

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
		USN-13	As a user, I can register for the application through Gmail.	I can reset the password by sending OTP through Gmail.	Medium	Sprint-2
	Login	USN-14	As a user, I can log into the application by entering email & password.	I can access the dashboard.	High	Sprint-1
	My Account	USN-15	As a user, I can fill my personal details.	I can view/edit my personal details.	High	Sprint-2
		USN-16	As a user, I can log out my account.	I can log out my account.	Medium	Sprint-1
	Dashboard	USN-17	As a user, I can upload images from gallery/camera.	I can access camera/gallery application.	High	Sprint-1
		USN-18	As a user, I can enter my diet chart and allow app to recommend food based on my diet chart.	I can enter my diet chart and get suggested food based on my diet chart.	Medium	Sprint-2
Customer Care Executive	Application	USN-19	As a customer care executive, I can resolve user's queries.	I can resolve user's queries.	Medium	Sprint-2
Administrator	Application	USN-20	As an admin, I can have a feedback form from user.	I can have feedback form to improve the application.	High	Sprint-1
		USN-21	As an admin, I can release updated version of my application.	I can release updated versions of my applications.	High	Sprint-1
		USN-22	As an admin, I can view number of users.	I can view number of users.	Medium	Sprint-2

PROJECT PLANNING & SCHEDULING

CHAPTER-6

6. **PROJECT PLANNING & SCHEDULING**

6.1 Sprint Planning & Estimation

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	SUDHARSAN.S
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	VENU PRASADHU.S
Sprint-2	Profile Update	USN-3	As a user, I have to enter my height, weight and daily activity details.	2	high	VELAVAN.K
Sprint-3	Login	USN-4	As a user, I can login to the application by entering E-mail and password	2	high	SHANKAR.J
Sprint-4	dashboard	USN-5	As a user, I can upload or capture live image of the meal	1	High	VENU PRASASDHU.S
Sprint-4		USN-6	As a user, I can track my daily calorie intake	1	medium	SHANKAR.J
Sprint-4	Maintain the application	USN-7	Maintaining detail for user	1	high	VELAVAN.K

6.2 Sprint Delivery Schedule

Project Tracker, Velocity & Burndown Chart: (4 Marks)

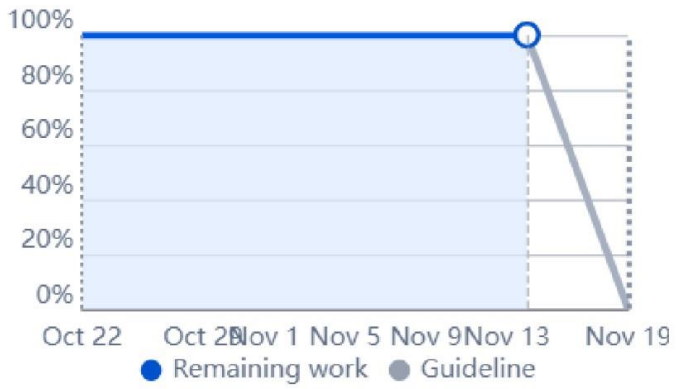
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	7	29 OCT 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	5	05 NOV 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	8	12 NOV 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	5	19 NOV 2022

Velocity:

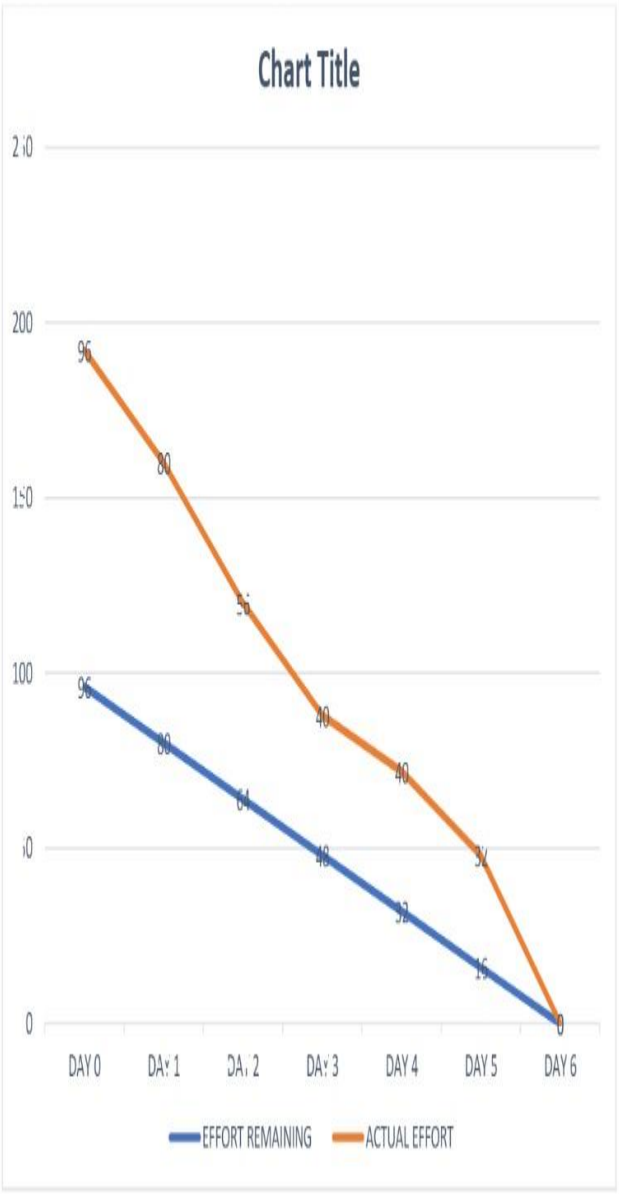
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

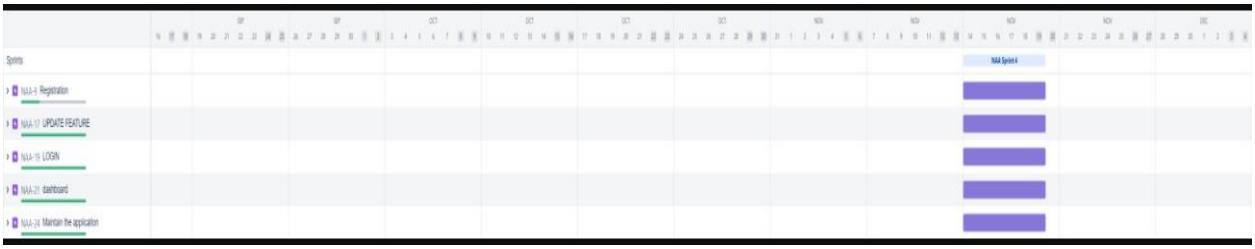
SPRINT BURNDOWN CHART:



BURNDOWN CHART:



6.3 Reports from JIRA



CODING & SOLUTIONING

Chapter-7

7. **CODING & SOLUTIONING**

7.1 Feature 1: login in

Algorithm :

1. Enter the credentials and hit enter (email and password).
2. if already logged in user is taken to home page
3. ELSE, check for validity of credentials entered using query to cloudant db
4. if wrong credentials entered, notification displayed to user and user in login page
5. on correct credentials, user is taken to home page

Login checker :

```
<!doctype html>
  html lang      ="en"  <>
       <head >
     <meta charset="UTF-8">
     <meta name="viewport" content                    ="width=device-width , initial                  -
scale=1.0">
     <title              >LOGIN PAGE</title                          >
     <link
href   ="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.
css" rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin="anonymous">
     <style>          h3{
color: blue;
          border:10px;
          border-radius: 10px;
```

```
            background-color:cyan;
        }
        h4{
            color: black;
        }
        .form-group{
            color: black;
            text-align: center;
            background-color: lightskyblue;
        }
        input{
            color: black;
            text-align: center;
        }
        #border{
            border-radius:10px;
            background-color: lightskyblue;
            color: black;  width:560px;
            height:740px;
            padding:10px;
        }
        #yellow{
            background-color: yellow;
            size: 40px;
            margin-left: 5px;
        }
        #pink{
            background-color:palevioletred;
            margin-left: 5px;
        }
        #orange{
            background-color: darkorange;
            margin-left: 5px;
```

```
        }
    </style>
    </head>
  <body style="background-color:lightpink">
<center>
<div                id="border"
 style="margin-top:2px;">
<form          ="POST"          ="off"
 action="#"   autocomplete  border="3">
 method
        <div class="col-md-offset-4  col-md-6" style="margin-
top:200px;"       >
        <h3>LOGIN PAGE</h3>
        <div class="form-group">
                          <label id="mail"><h4      >mail</h4></label>
                          <input type="email" name="mail" class="form-control"
required     >
        </div><br                  >
        <div class="form-group">

                        <input type="password" name             ="password" class="form
                        <label><h4     >password</h4></label>
                                                                                    !
control" required>
        </div><br><br>
        <div class="form-group">
        <a href="/nutrition_page"><input type="button" name="login"
value="signin" id="pink"></a>
        <a href="/account"><input type="button" value="signup"
id="yellow"></a>
        <a href="/home_page"><input type="button" value                                  ="home"
id="orange"></a>
        </div>
        </div>
    </div             >
    </form>
  </div>
```

```
  </center>
  </body>
</html >
```

7.2 FEATURE 2 : SIGNUP

Algorithm :

1. Enter the signup form fields (name , email , password , re-enter password , date of birth) and hit enter.
2. All credentials are validated at client side.
3. Email is checked if already registered or not in the database.
4. If already registered , notification displayed. Or else, the user is taken to the successful signup page.

Query to check if email is registered or not :

```
<!doctype html>
  html lang ="en" <>
      <head >
          <meta charset ="UTF-8" >
          <meta name ="viewport" content ="width=device-width , initial
scale=1.0">
          <title >create account</title >
          <style >
      h3{
          text-align: center;
          color:blue
      }
      form{
```

```
            background-color:lightskyblue;
        }
        .form-group,input{
            color:black;
            text-align:center;
        }
        #center{
            margin-top: 300px;
        }
        #border{
            border-radius:10px;
            background-color:lightskyblue;
            color: black;            width:560px;
            height:740px;
            padding:1px;
        }
        #message{
            background-color: lightcyan;
            color: black;
        }
        .table{
            background-color: aliceblue;
            text-align: center;
        }
    </style>
    <!-- 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 style="background-color:lightpink">
```

```
        <center>
        <div
        id="border">
        <form ="off"
        action="/register"
        method="POST"
        autocomplete
border="3">
        <div class="col-md-offset-4  col-md-6">
        <h3 style ="text-transform:uppercase;">create account</h3
                                                                >
        <div class="form-group">
                <label>name</label>
                <input type="text" name="name"
                class="form-control"
required >
        </div>
        <div class="form-group">
                <label>age</label >
                        <input type="text" name="age" class ="form-control"
required >
        </div>
        <div class="form-group">
                <label>address</label>
                <input type="text" name="address"
                class="form-control"
required >
        </div>
        <div class="form-group">
                <label>contact</label>
                <input type="number"="contact"
                name class="form-control"
required >
        </div>
        <div class="form-group">
                <label>mail</label>
                <input type="email" name="mail"
                class="form-control"
required >
```

```
        </div>
        <div class="form-group">
                        <input type="password" name ="password" class="form
                        <label>new password</label>
                                                                        !
control" required placeholder="enter the strong password">
        </div>
        <div class="form-group">
            <label>confirm
            password</label>
            <input     type="password"="confirm_password"
            name                    class="form-
control" required placeholder="enter the correct password to ">
        </div><br><br>
        <div class="form-group">
        <input type                 ="submit" name="submit" value="register" class                 ="btn
btn-success">
        <input type                 ="reset"  value         ="clear" class="btn btn-danger"             >
        <a href="/home_page"><input type="button" value                             ="home"
class="btn btn-danger"></a>
        </div><br><br>
        <div             >
        </div>
        </div>
    </div          >
    </form>
  </div>
  </center>
  </body>
</html  >
```

7.3 FEATURE 3 : HOME

Algorithm :

1. If the user is logged out , he/she is taken to the login page.
2. Home page buttons are displayed (Live tracker , Recent emergency notifications , Location history , Change password , Logout)
3. If buttons are clicked , the user is takento the requested page.

user to access every thing home page connect every pages:

```
<!doctype html>
<html lang="en">
  <head>
  <meta ="UTF-8">
   charset
  <meta ="viewport"
   name  content="width=device-width ,
         initial-
scale=1.0">
        <title>home</title >

href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min
        <link
                                                                .
css" rel ="stylesheet" integrity ="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi"
crossorigin ="anonymous" >
                          <style>
      h1{
        font-family:Arial, Helvetica, sans-serif;
        text-transform:uppercase;
        text-shadow:5px 0 red;
        border: 300px;
        border-radius:30px;
        text-align: center;
      }
      h1:hover{
```

```
            background-color: lightseagreen;
        }
        .form-group{
            border-radius:10px;
            background-color:lightslategrey;
            color: black;
            width:100%;
            padding:2px;
        }
        .form-group:hover{
            background-color:chartreuse;
        }
        #home{
            float:left;
            margin-right:10px;
            color:black;
        }
        #reg{
            float:left;
            margin-right: 10px;
            color:black;
        }
        #log{
            float:left;
            margin-right: 10px;
            color:black;
        }
        #abt{
            color:black;
        }
        img{
            border-radius:10px;
            width:100%;
```

```
            height: 640px;
            padding:10px;
            float: inline-start;
        }
        #home:hover{
            background-color:aqua;
        }
        #reg:hover{
            background-color:fuchsia;
        }
        #log:hover{
            background-color: yellow;
        }
        #abt:hover{
            background-color:deeppink;
        }
        #pure{
            font-family: 'Gill Sans', 'Gill Sans MT', Calibri,
'Trebuchet MS', sans-serif;
            font-style: italic;
            color:darkgoldenrod;
            font-size:30px;
            border:1300px;
            border-radius: 30px;
        }
        #pure:hover{
            background-color: lightgoldenrodyellow;
        }
    </style>
    </head>
  <body style="background-color:lightpink">
                                <h1><center><b>welcome to nutrition assistant
application</        b></center></h1      >
                                <div>
```

```
            <div class ="form-group" >
                        <form action="#" >
        <a href="#"><input type="button" value="home" id="home"
class="btn btn-orange:#fd7e14;"></a>
        <a href="/account"><input type="button" value="create account"
id="reg"  class="btn btn-orange:#fd7e14;"></a>
        <a href="/login"><input type="button" value="login" id ="log"
class="btn btn-orange:#fd7e14;" ></a>
        <a href="/about"><input type="button" value="about" id ="abt"
class="btn btn-orange:#fd7e14;"></a>
      </form>
    </div >
            <br >
                <div id="float-center">
        <p id="pure">we are made to create a healthy people in natural
way</p>
        <img src="../static/files/images/nutrition project image 1.png"
alt ="nutrition image" >
    </div >
    </div >
  </body>
</html >
```

TESTING

CHAPTER-8

TESTING

8. TEST CASES

1. Login button click with wrong credentials entered.
2. Signup with already registered mail ID.
3. Signup with wrong form data entered.
4. Entering home page with logged out session.
5. Clicking home page buttons with logged out session.
6. Invalid data entered in change password page and requested for change in password.

USER ACCEPTANCE TESTING:

8.2 USER ACCEPTANCE TESTING

S.NO	TEST CASE	REQUIRED OUTPUT	RESULT OUTPUT	STATUS
1	Login button click with wrong credentials	Wrong credentials entered notification	Wrong credentials entered notification	ACCEPTED
2	Signup with already registered mail ID.	Email already registered notification	Email already registered notification	ACCEPTED
3	Signup with wrong form data entered.	Wrong credentials entered notification	Wrong credentials entered notification	ACCEPTED
4	Entering home page with logged out session.	Take user to login page	Take user to login page	ACCEPTED
5	Clicking home page buttons with logged out session.	Take user to login page	Take user to login page	ACCEPTED
6	Invalid data entered in change password page and requested for change in password.	Wrong form data entered notification	Wrong form data entered notification	ACCEPTED

RESULT

CHAPTER-9

RESULTS

performance metrics:

1. Planned value : Rs.4000 2.

Actual value : Rs.1300

3. Hours worked: 50 hours
4. Stick to Timelines : 100%
5. Stay within budget: 100%
6. Consistency of the product: 75%
7. Efficiency of the product: 80%
8. Quality of the product: 80%

ADVANTAGES AND DISADVANTAGES

CHAPTER-10

ADVANTAGES AND DISADVANTAGES

ADVANTAGES :

1. Low price.

2.Simple UI.

3. A single-page website allows for a quicker response.

4. The ability to easily and affordably add a lot of features.

disadvantage:

1. **Ineffectiveness. The product needs to operate more efficiently.**
2. **The product's consistency is not perfect.**
3. **The product is not small-scale. Reduced size is required.**

CONCLUSION

CHAPTER-11

CONCLUSION

11. conclusion:

Monitoring one's diet is crucial for managing and treating chronic conditions. Food entry on personal mobile devices is substantially less of a hassle thanks to picture recognition and food photography. In this work, we have created a system for tracking nutritional intake that uses deepbased image recognition to swiftly and reliably record food and nutrient intake. We discovered that laboratory models serve as the cornerstone of the solution but leave out some of the most significant difficulties through real user food photo testing and user research. The variety of real food images is more than that of the model developed in a lab. A method of tracking the free-style and handmade food recognition challenges, where training data is scarce and unrepresentative, is ingredient-based recognition. Additionally, the intended

FUTURE SCOPE

CHAPTER-12

FUTURE SCOPE

12. future scope:

We'll be introducing more user-friendly features in the future. The web application's ui/ux will be enhanced. expanding the project to accommodate more use cases and clients. putting distributed computing into practise for processing effectiveness. standardising encryption for cloud storage.

Nutrition assistants **help dieticians with providing proper nutrition at healthcare facilities**. They determine patients' nutritional needs, assess risk factors, and plan meals and menus. They also ensure proper sterilization of plates and utensils.

Nutrition and Dietetics **can work as a dietician in hospitals and Nutritionists in health clinics, health centers, and MNCs**. Opportunity to be a registered dietician
(RD). Graudates can work as a project assistant, project associate, chief nutritionist in NGO's and private organizations.

GITHUB REPOSITORY: https://github.com/IBM-EPBL/IBM-Project-20490-1668680250