

CUSTOMER CARE REGISTRY

PROJECT REPORT

Domain: Cloud Application Development

Submitted by

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PROJECT OVERVIEW

1. INTRODUCTION

1.1 Project Overview

1.2 Purpose

2. LITERATURE SURVEY

2.1 Existing problem

2.2 References

2.3 Problem Statement Definition

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstorming

3.3 Proposed Solution

3.4 Problem Solution fit

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

4.2 Non-Functional requirements

5. PROJECT DESIGN

5.1 Data Flow Diagrams

5.2 Solution & Technical Architecture

5.3 User Stories

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

7. CONCLUSION

8. APPENDIX

1. INTRODUCTION

Inventory management system for the retailer is essential to maintain the retailing businesses in order to satisfy the customer's needs and comfort. Some benefits of the retail inventory management are increased profits, reduced dead stock, time savings, improved finances, simplicity and increased growth and better forecasting. It can still be uplifted by implementing some practices like creating a strategy to record stock receipts, building strong supplier relationships, manage residual inventory and managing priorities.

1.1 PROJECT OVERVIEW

The project design is completely focused on providing a better shopping experience for the customers with complete satisfaction. It implements the comfortable view of products and offers, new launches, checking the availability of products, items ordering and packing, tracking the product, online payment, providing EMI facilities, making easy returns, and customer feedback. These are implemented with the help of software like Flask, Docker, SendGrid and IBM Watson.

1.2 PURPOSE

The purpose of making this project is to provide utmost comfort and trust towards the inventory management system, not only for the customers, but also for the retailers. This uplifts the economic progress and customer support as well.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

After a survey of a number of papers, it can be stated that customer care registry has number of facilities for customers but only by message in common English language. But people who don't know that language can't able to get use of the service. Similarly the use of both call service and message service is not provided.

2.2 REFERENCES

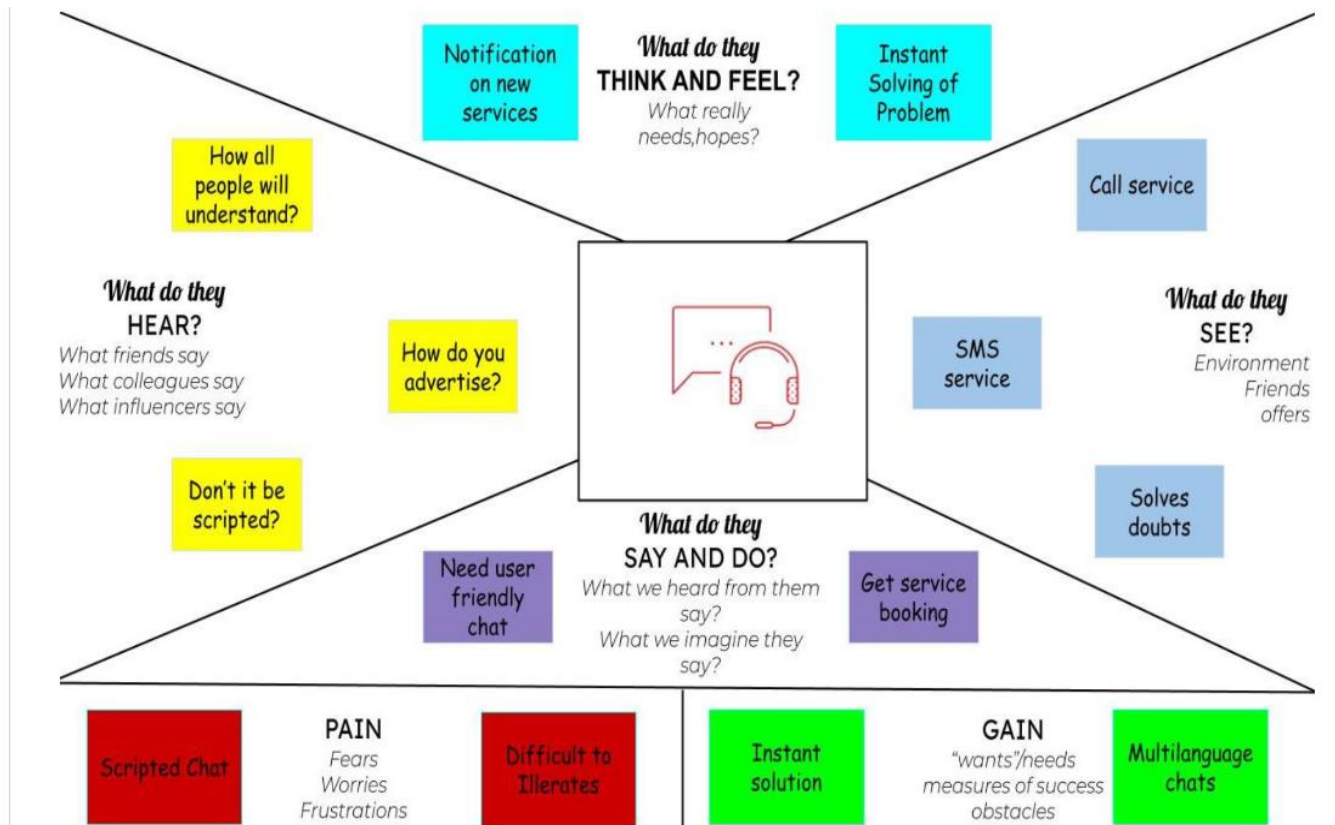
| TITLE AND AUTHOR(S) | YEAR | TECHNIQUE (S) | FINDINGS | PROS AND CONS |
|---|------|-------------------|---|---|
| Customer Service Culture at VP-Bank in Vietnam Nguyen Hoang Tien ¹ , Dinh Ba Hung Anh ² , Nguyen Thanh Vu ³ . | 2022 | CRM technology | They are tried to contribute a very small part to the development and building of a customer service culture for an organization | P:Effective customer care C:Less number of benefits customers |
| Product Quality And Service Quality Yusuf Indra Wibowo Management Program, Open University, Indonesia. | 2022 | PT. PLN (Persero) | There are many other factors that affect Customer Satisfaction and Complaint Levels, apart from Customer Satisfaction and Complaint Levels at all types., | P: Prices, Promotions and Digital Services. C: Supports theoretical studies. |

2.3 PROBLEM STATEMENT DEFINITION

- Transferring customer calls.
- Dealing with the angry customers.
- Lack of employee engagement.
- Misunderstanding customer expectations.
- Hard to handle multi language customers.
- Making customers wait too long.
- Irrelevant Chat to the query asked.
- Chat experiences like scripted.
- Poor quality of online chats.
- Employee burnout.

3. IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS



3.2 IDEATION AND BRAINSTORMING

Lavanya B

| | |
|-----------------------------|--|
| Automated Chatbot | Get feedback to improve further while leaving chat |
| Problem solved notification | Use Emoji's |

Nishanthini S

| | |
|---|--------------------|
| Automatic call connection to employee if needed | 24x7 service |
| Avoid continuous Number dialling | Attractive Screens |

Narmatha T

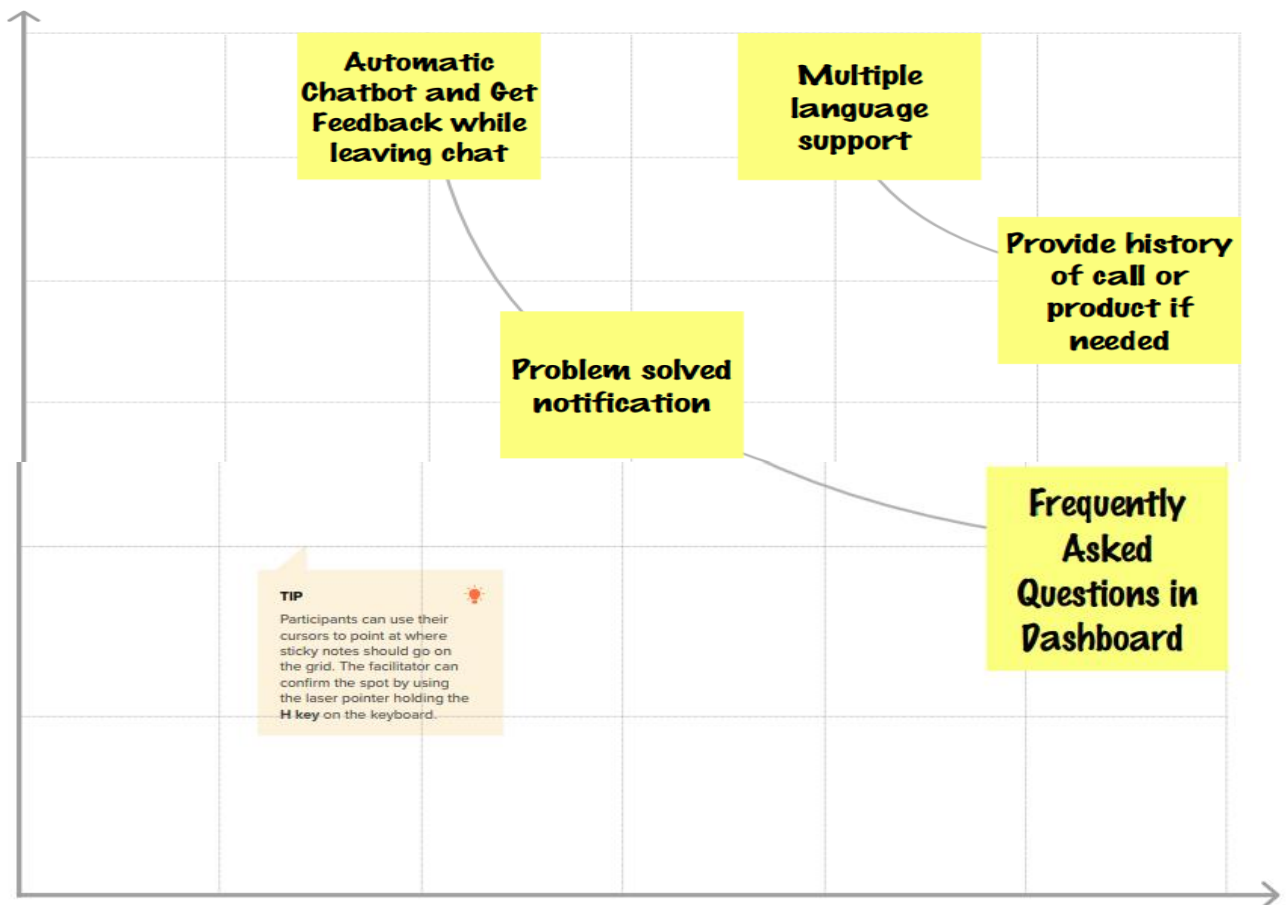
| | |
|------------------------------|----------------------------------|
| Multiple langauage support | Fast Response |
| Relevant offers notification | Attractive pictures in Dashboard |

Lavanya Kumari R

| | |
|--|--|
| Provide history of call or product if needed | Display any information if needed |
| Recharge remainders in chat bot | Use friendly language than formal language |

Gayathri S

| | |
|--|---|
| Frequently Asked Questions in Dashboard | Give response without delay |
| If Needed provide chat with customer service provider and employee | Display Pros about network while leaving chat |



Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

3.3 PROPOSED SOLUTION

| S.No. | Parameter | Description |
|-------|--|---|
| 1. | Problem Statement (Problem to be solved) | Today people started to using many online applications for shopping, buying medicines and foods. They facing many problems. They need to report their problems through customer care. Many problems will occur in that such as transferring customer calls, dealing with the angry customers, Lack of employee engagement, misunderstanding customer expectations, Hard to handle multi language customers, making customers wait too long. Irrelevant Chat to the query asked, Chat experiences like scripted, Poor quality of online chats, Employee burnout. To prevent these problems, we are designing a customer care registry using cloud computing. |
| 2. | Idea / Solution description | An automatic chatbot will be available it chats with multiple language support and also give feedback while leaving. It will provide the history of call or product if needed. It will show the relevant offers and automatically connect the call to the employee 24/7. It will show the frequently asked queries in the dashboard, attractive emojis and screens are displayed. |
| 3. | Novelty / Uniqueness | This solution has the uniqueness that we can chat in multiple language so that all people can able to communicate with their queries. It also has availability of connecting the call 24/7. Problem solved notification will be also provided. |
| 4. | Social Impact / Customer Satisfaction | The customer care registry can be useful for people who had queries about their product and available in multiple language might be useful for all. They will not charge for of their customer care service and the problems can be solved quickly. |
| 5. | Business Model (Revenue Model) | These registry will need not to install any application only internet is needed. Once they had search for the service it will automatically redirect to the dashboard and ask queries. It will not show any popups or ads. People can use it safely and easily. |
| 6. | Scalability of the Solution | Customer care registry will cover the additional time zones if our customers are geographically dispersed. Further it will be encouraging more conversations Adding live chat support or phone call support. Improve the auto-replies for the customers. |

3.4 PROBLEM SOLUTION FIT

1. Customers segment:

Global blood bank market major segments are based on:

- Product type
- Function
- Bank type
- End user

2. Customer constraints:

Blood donor are highly satisfied with the customer service at the blood service upto 93% of donor report that they are very satisfied with their customer experience.

3. Available solutions:

Plasma therapy involves transfusing plasma retrieved from the blood of people who have recover from covid 19 into people suffering from the disease.

4. Problems:

People who need plasma are increasing day by day . It is not that people do not want to donate plasma, but because they have no idea where they can donate

5. Root/cause:

- You may feel tired after giving blood.
- Donating blood can be a little bit painful.
- Risk of complications.
- You have to do some paperwork.
- Donating blood may lead to bruises.

6. Behaviour:

Actual behaviour was reported following the departure of the BTS. Responding were simply asked to indicate whether or not they had given blood during the visit of the BTS.

7. Triggers:

The risk associated with plasma transfusion have changed over the years. Risk of infection disease transmission has been significant reduced with donor testing .

9. Solution:

Online plasma bank management system is a web application that allows to access the whole information about plasma donor application scalable and acceptable to meet complex need of plasma ,people can access from anywhere at any time right from the palm of your hand.

8. Emotions

However that such approach problematically subsume emotions construct into cognitive constructs reflecting historical domination of cognitive paradigms in psychology.

10. Channels of Behavior:

This does not include the link on blood association websites to social network which would be part of their marketing stimuli but what is said on those social networks ,such as facebook, twitter , tuenti about the need foe blood donation or the process.

4. REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

| FR No | Functional Requirement(Epic) | Sub Requirement(Story/ Sub-Task) |
|-------|------------------------------|--|
| 1 | User Registration | Registration through Gmail Registration through Form Registration through Google |
| 2 | User Confirmation | Confirmation using Email Confirmation using OTP |
| 3 | User Login | Login through Google Login with the use of Email id and Password |
| 4 | Admin Login | Login via Google Login using Email id and Password |
| 5 | Query Form | Any issues Contact information |
| 6 | E-mail | Login alertness |

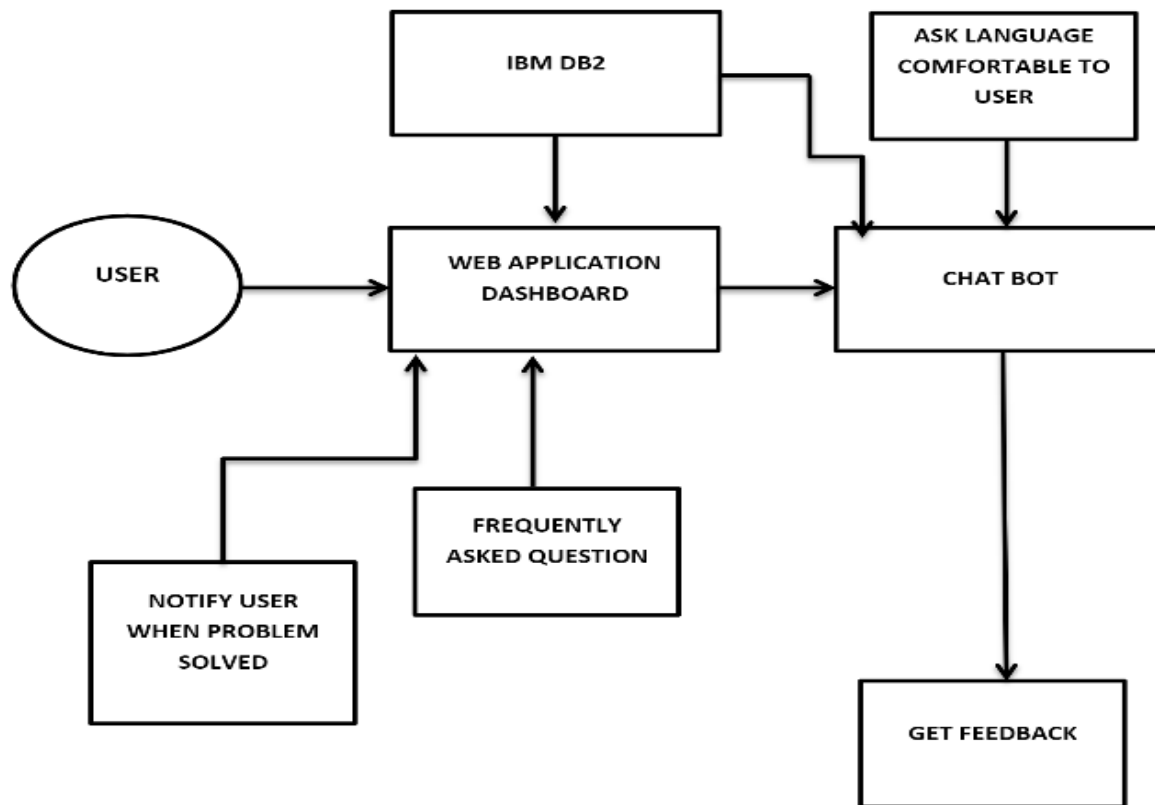
4.2 NON-FUNCTIONAL REQUIREMENTS

| FR No | Non-Functional Requirement | Description |
|-------|----------------------------|--|
| 1 | Usability | Provide correct solution to the problem |
| 2 | Security | Tracking of login authentication |
| 3 | Reliability | Tracking of status through email |
| 4 | Performance | Development of web application |
| 5 | Availability | 24/7 services are available |
| 6 | Scalability | Agents scalability is based on the number of customers |

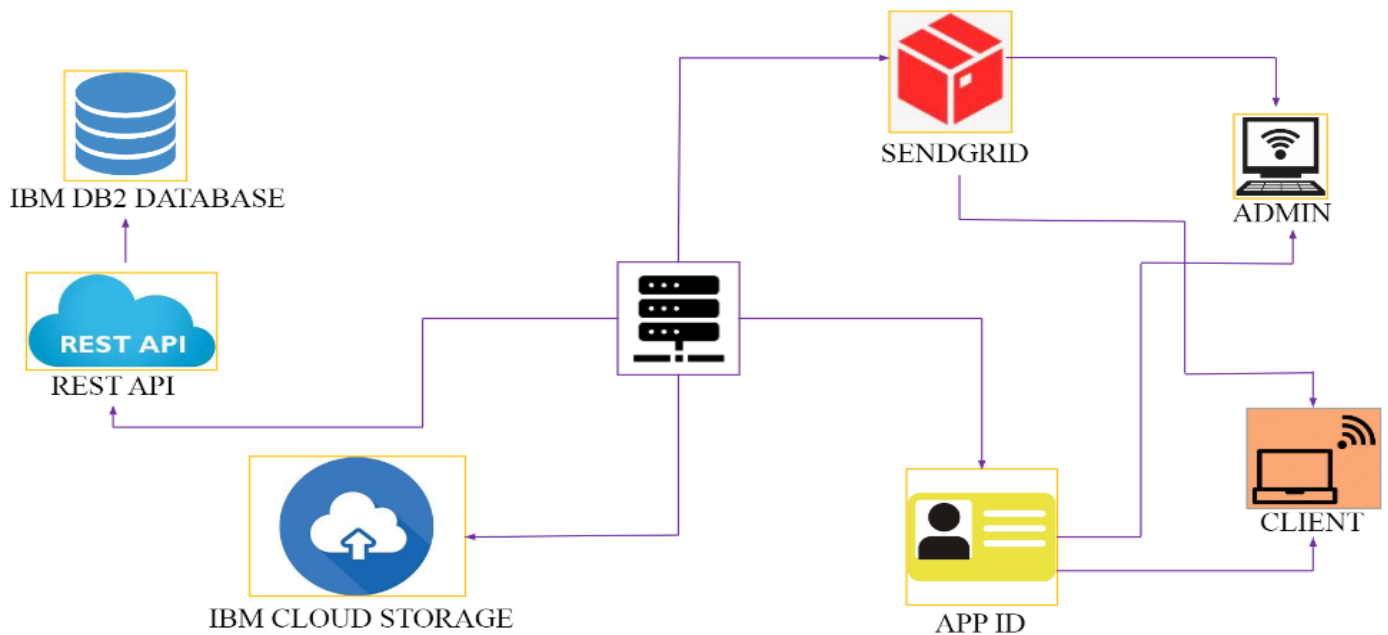
| S.NO | COMPONENT | DESCRIPTION | TECHNOLOGY |
|------|---------------------------------|--|--|
| 1 | User Interface | User interaction with the application, for example Web UI, mobile apps, chatbots, etc. | JavaScript, AngularJS, ReactJS, HTML, CSS, etc. |
| 2 | Application Logic-1 | The Justification behind an application's process | Python |
| 3 | Application Logic-2 | The Justification behind an application's process | Watson STT from IBM |
| 4 | Application Logic-3 | The justification behind an application's process | Watson Assistant by IBM |
| 5 | Database | Data Type, Configurations etc | MySQL etc., |
| 6 | Cloud Database | Cloud database service | IBM Cloudant, IBM DB2, etc. |
| 7 | File Storage | Storage needs for files | IBM Block Storage, other storage options, or Domestic Filesystem |
| 8 | Infrastructure (Server / Cloud) | Local Server Configuration: Cloud Server / Application Deployment on Local System | local, cloud-based, Kubernetes, etc. |

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS



5.2 SOLUTION & TECHNICAL ARCHITECTURE



5.3 USER STORIES

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|---------------------------|-------------------------------|-------------------|---|--|----------|----------|
| Customer (Mobile user) | Registration | USN-1 | By entering email, mobile number, password and confirming the password the user can register the application. | Customer can access their account or dashboard | High | Sprint-1 |
| | login | USN-2 | Customer can login to the application by entering correct email or phone number and password. | I have access to my dashboard and account. | High | Sprint-2 |
| | Dashboard | USN-3 | Customer can see all the orders, ordered by them. | My dashboard provides all the information I require. | Low | Sprint-3 |
| | Order creation | USN-4 | Customer can place my order with the detailed description of my query | Query can be asked by customers. | Medium | Sprint-2 |
| | Address Column | USN-5 | Customer can have conversations with the agent and the queries can be cleared. | My queries are clarified. | High | Sprint-3 |
| | Forgot password | USN-6 | Customer can reset the password by using this option incase they forget the password. | I get access to my account again | Medium | Sprint-4 |
| | Order details | USN-7 | Customer can see the status for their ordered things. | I get a good understanding | Medium | Sprint-1 |
| Agent (web user) | Login | USN-1 | Agent can login to their respective application by entering their email or phone number and password. | Agent can access their account or dashboard. | High | Sprint-3 |
| | Dashboard | USN-2 | Agent can see the order details assigned by admin. | I can see the tickets that need responses. | High | Sprint-3 |
| | Address column | USN-3 | Agent have conversations with the customer and clear his/her queries. | Agent clarifies the queries of customer | High | Sprint-2 |
| | Forgot password | USN-4 | Agent can reset their password by this option in case password is forgotten. | I can get access to my account again. | Medium | Sprint-4 |

6. PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|-----------------|-------------------------------|-------------------|---|--------------|----------|---|
| Sprint-1 | User Panel | USN-1 | By login through the website the user can go through the services provided. | 20 | High | Lavanya.B Narmatha.T Lavanya Kumari.R Gayathri.S |
| Sprint-2 | Admin panel | USN-2 | Check out the database about the availability and have a track of all the things that the users are going to service by the admin. | 20 | High | Gayathri.S Nishandhini.S Lavanya.B |
| Sprint-3 | Chat Bot | USN-3 | By using chatbot the user can directly talk about the services and the user get recommendations based on data given by the user. | 20 | High | Narmatha.T LavanyaKumar I.R Nishandhini.S Gayathri.S |
| Sprint-4 | final delivery | USN-4 | Docker Kubernetes having Container of applications and deployment the application.Create the documentation and final submit the application | 20 | High | Nishandhini.S Lavanya.B Narmatha.T Lavanyakumari.R |

PROJECT TRACKER:

| 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 | 26 Oct 2022 | 01 Nov 2022 | | 01 Nov 2022 |
| Sprint-2 | 20 | 6 Days | 2 Nov 2022 | 07 Nov 2022 | | 06 Nov 2022 |
| Sprint-3 | 20 | 6 Days | 08 Nov 2022 | 13 Nov 2022 | | 12 Nov 2022 |
| Sprint-4 | 20 | 6 Days | 14 Nov 2022 | 19 Nov 2022 | | 19 Nov 2022 |

Velocity Estimation:

If sprint duration is 10 days 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).

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

7. CONCLUSION

Customer Care Registry is an important factor which makes agents to improve the quality and helps to get good customer agent relation. Hence it should be useful to all people from various places. Even the people who doesn't know the English language well needs its help. Similarly both call and message service needed to get clear about their doubts. Hence it needs these two features to work efficiently and in order to attract more customers to use our registry.

8. APPENDIX

GitHub Repo link:

<https://github.com/IBM-EPBL/IBM-Project-15325-1659597270>