

# **CUSTOMER CARE REGISTRY**

**TEAM ID: PNT2022TMID45240**

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# 1.INTRODUCTION

## 1.1 PROJECT OVERVIEW

Customer care and customer service together help create a positive customer experience, or the overall impression a person has when interacting with your company. Both are vital, but there are subtle differences in how they are implemented. High-quality customer care is proactive. The needs of customers throughout the buyer's journey are anticipated, making customers feel supported. That, in turn, helps create an emotional connection between the customer and the company. Customer service is reactive. Here, the focus is on helping customers solve problems or answer questions before purchase, either in a self-serve fashion or via the customer support team. Customer care is more than just providing great customer service. It's a proactive approach to providing information, tools, and services to customers at each point they interact with a brand. If a company neglects customer care, it can negatively impact the customer service experience. For example, when a website chatbot can't provide key information about a product, customers are more likely to get frustrated and reach out to a customer service agent for help. Consumer expectations are extremely high, putting increased pressure on companies to improve their customer relationships. This can lead to lost information when the same person reaches out via multiple channels. When a customer service agent doesn't know the whole story and the customer has to repeatedly share the problem, it leaves both people frustrated. They can register for an account. After the login, they can create a complaint with a description of the problem they are facing. Each user will be assigned an agent. They can view the status of their complaint.

- Customers get the insights they need to make an informed purchase.
- Customer satisfaction can increase and customer loyalty can improve.
- Customer service agents spend less time on routine tasks and answering commonly asked questions, enabling agents to do more meaningful task.

## 1.2 PURPOSE

There are two sides to customer service objectives. First, there are the goals and KPIs customer service teams attempt to achieve. Then, there's customer service resume objectives. It's important to understand the connection between the two: Writing a strong customer service resume objective starts with understanding the objectives of the field and its depth and possibilities. To provide insight into both levels of customer service objectives. The prime objective of customer service is to answer customer questions quickly and effectively, resolve issues with empathy and care, document pain points to share with internal teams, nurture relationships, and improve brand credibility. Great customer service can make people loyal to your brand, products, and services for years to come.

A strong customer service resume objective underscores your skills and experiences in contributing to customer service's overall goals and objectives. Meeting key customer service KPIs doesn't just involve answering phones and emails. It's a whole world of solutions development, intuition, empathy, brand management, time management-and the soft skills that help connect people and create trust. I guide my team toward giving the best service possible. Sometimes, we're not delivering good news. But the objective is to do that with compassion and empathy and in a way that we give the customer constructive next steps to move forward. We also know that as a newer, younger brand, customers may be wary of our credibility. It usually takes a few consistently excellent customer experiences to feel connected and loyal to the brand. That awesome experience starts from the very first touchpoint, whether it be web, email, brick and mortar, or Instagram, and carries through to when they're wearing our product

## **2.LITERATURE SURVEY**

### **2.1 EXISTING PROBLEM**

A strong customer problem statement should provide a detailed description of your customer's current situation. Consider how they feel, the financial and emotional impact of their current situation, and any other important details about their thoughts or feelings.

Customer Satisfaction is an attitude that is decided based on the experience obtained. Satisfaction is an assessment of the characteristics or privileges of a product or service, or the product itself, that provides a level of consumer pleasure with regard to meeting consumer consumption needs.

Customer Satisfaction is the customer's response to the evaluation of perception of differences in initial expectations prior to purchase (or other performance standards) and the actual performance of the product as perceived after wearing or consuming the product in question.

The level of complaint is how high the complaint or delivery of dissatisfaction, discomfort, irritation, and anger over the service of the service or product. The dimension or indicator of complaint level is the high level of complaint.

Product Quality affects Customer Satisfaction, where the dimensions or indicators of Product Quality are quality products, in accordance with the price offered, and ease of use affects the dimensions or indicators of Customer Satisfaction in relation to subscription decisions.

### **2.2 REFERENCES**

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## **2.3 PROBLEM STATEMENT DEFINITION**

A customer problem statement outlines problems that your customers face. It helps you figure out how your product or service will solve this problem for them.

The statement helps you understand the experience you want to offer your customers. It can also help you understand a new audience when creating a new product or service.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

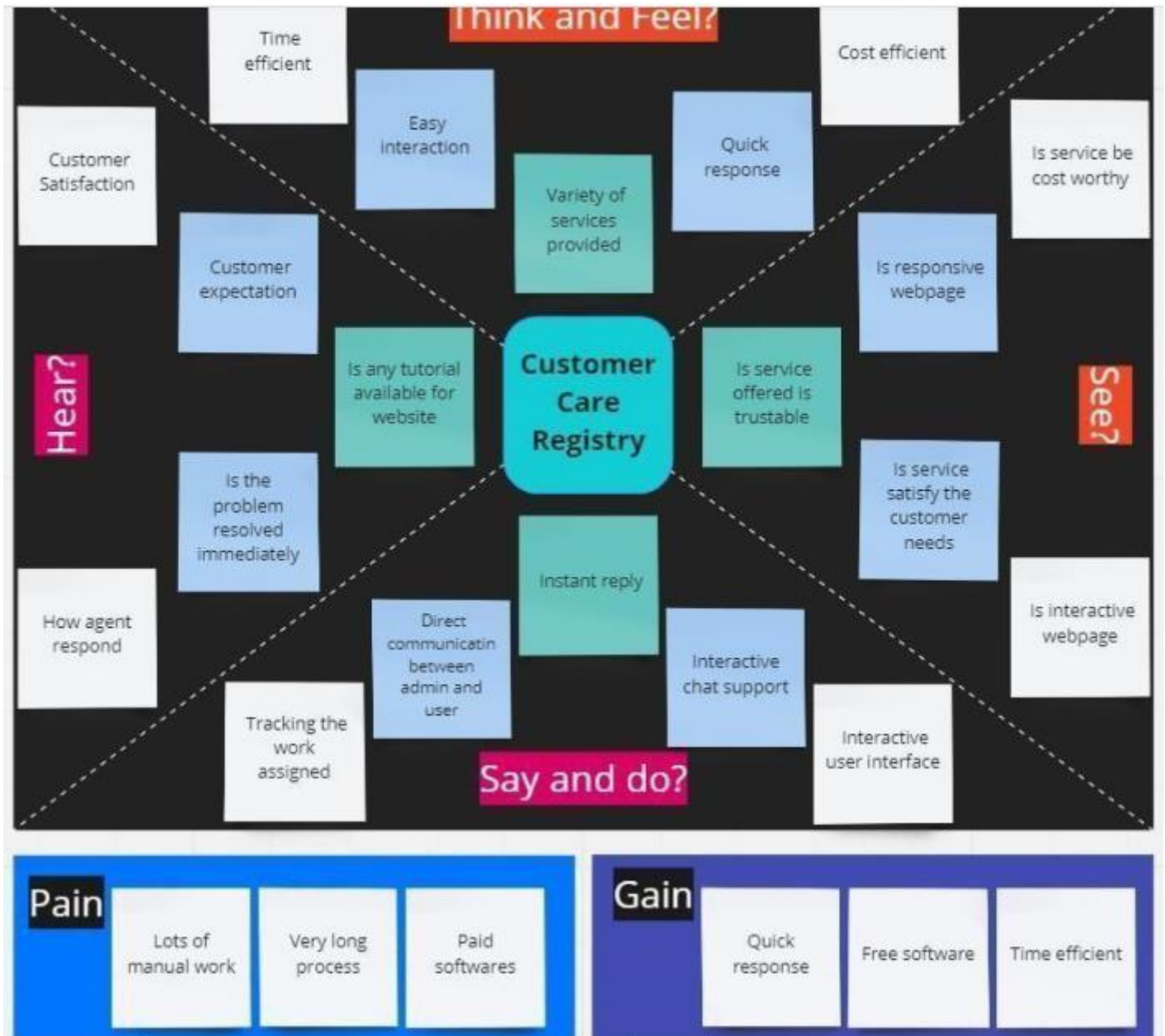
A Customer Problem Statement is a detailed description of an issue that needs to be addressed. This document thoroughly elaborates on the problem that your product or your service solves for your particular customers. It takes into consideration your customer's unique pain points and how your product goals about solving their situation. A customer problem statement helps you and your team understand the detailed experience you are attempting to transform by analyzing and empathizing with your customers.

The customer problem statement is a critical component of a project. It benefits everyone involved with the project because it helps people understand why they're working on the project, providing clarity on the reasons behind the product or service. Team members will consider how your customers will be impacted by your project, what their thoughts and needs are, and thus come up with truly effective and valuable ways to improve their experience.

3.

## IDEATION & PROPOSED SOLUTION

### 3.1 EMPATHY MAP CANVAS





## 3.2 IDEATION & BRAINSTORMING

2

### Brainstorm

Write down any ideas that come to mind that address your problem statement.

 10 minutes

#### TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

#### SASIDHARAN S

|                               |                                   |                           |
|-------------------------------|-----------------------------------|---------------------------|
| address your customer by name | always send personalized messages | give clients personal     |
| old fashioned contact         | turn customer mistakes            | reward loyal customers    |
| provide fast                  | convenient customer support       | offer omnichannel support |

#### RAGUL R

|                               |                              |                           |
|-------------------------------|------------------------------|---------------------------|
| respond on social media       | use non-generic auto-replies | provide self help options |
| offer 24/7 customer support   | make an irresistible offer   | offer a lenient           |
| straightforward return policy | offer a bulletproof          | provide a trial period    |

#### NITHISH V

|                            |                                |                            |
|----------------------------|--------------------------------|----------------------------|
| free return shipping       | experiment with discounts      | make feedback part         |
| actively ask customers     | share feedback across all dept | reply to all feedback      |
| both positive and negative | focus on common complaints     | focus on provide solutions |

#### GOWSEELAN K

|                                |                            |                                       |
|--------------------------------|----------------------------|---------------------------------------|
| emphasize the sense of urgency | create experiences         | offer fast support                    |
| make tempting offers           | focus on feedback          | create memorable customer experience  |
| customer business interaction  | customized and hand signed | drive more sales and customer loyalty |

### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine what ideas are important and which are feasible.

Get feedback

**Importance**

**Feasibility**

### After you collaborate

You can request the board as an image or pdf to share with members of your company who might find it helpful.

Click to edit text

- Share the board**  
Share a shareable link to your board with stakeholders to keep them in the loop about the decisions at the board.
- Export the board**  
Export a copy of the board as a PDF or PNG to share with stakeholders or use it as a reference.

Keep working forward

**Review progress**  
Review the progress of a team's work at any time.

**Customer engagement metrics**  
Monitor customer metrics, including, and not limited to, the following:

**Key metrics, milestones, opportunities & threats**  
Identify key metrics, milestones, opportunities, and threats (SWOT) for your business.

Click to edit text

### 3.3 PROPOSED SOLUTION

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

| S.NO. | PARAMETER                                | DESCRIPTION   |
|-------|--|---|
| 01    | Problem Statement (Problem to be solved) | To solve customer issues using Cloud Application Development.   |
| 02    | Idea / Solution description              | Assigned Agent routing can be solved by directly routing to the specific agent about the issue using the specific Email. Automated Ticket closure by using daily sync of the daily database. Status Shown to the Customer can display the status of the ticket to the customer. Regular data retrieval in the form of retrieving lost data. |
| 03    | Novelty / Uniqueness                     | Assigned Agent Routing, Automated Ticket Closure, Status Shown to the Customer, and Backup data in case of failures.  |

| S.NO. | PARAMETER                             | DESCRIPTION   |
|-------|---------------------------------------|---|
| 04    | Social Impact / Customer Satisfaction | Customer Satisfaction, Customer can track their status and Easy agent communication.  |
| 05    | Business Model (Revenue Model)        | <ul style="list-style-type: none"> <li>● Key Partners are Third-party applications, agents, and customers.</li> <li>● Activities held as Customer Service, System Maintenance.</li> <li>● Key Resources support Engineers, Multi-channel.</li> <li>● Customer Relationship have 24/7 Email Support, Knowledge-based channel.</li> <li>● Cost Structure expresses Cloud Platform, Offices</li> </ul> |

| S.NO. | PARAMETER                   | DESCRIPTION  |
|-------|-----------------------------|--|
| 06    | Scalability of the Solution | The real goal of scaling customer service is providing an environment that will allow your customer service specialists to be as efficient as possible. An environment where they will be able to spend less time on grunt work and more time on actually resolving critical customer issues |

### 3.4 PROBLEM SOLUTION FIT

#### PROJECT DESIGN PHASE –I (PROBLEM-SOLUTION FIT)

Problem-Solution fit canvas 2.0

|                         |   |  |  |                                       |
|-------------------------|---|--|--|---------------------------------------|
| Define CS, fit into     | <b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span><br>Who is your customer?<br>1) Customers who are not able to solve them<br>Own complaints of what they are facing.<br>2) Customers who do not know the solution of their questions they get.  | <b>6. CUSTOMER</b> <span>CC</span><br>What constraints prevent your customers from <u>getting power</u> or limit their choices of solutions? <u>spending power, budget, no cash, network connection, available devices.</u><br>1) This application will be supported by almost all the devices.<br>2) The solution we propose will have an alert via email feature, if expense exceed the given limit.<br>3) This solution also provides insights in a graphical way.  | <b>5. AVAILABLE SOLUTIONS</b> <span>AS</span><br>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What price & cost do these solutions have? <u>pen and paper is an alternative to digital extending</u><br>1) By reading the guidelines properly.<br>2) Offer a solution and give options whenever possible.<br>3) Address to issue within the company.<br>4) By communicating properly | Explore AS                            |
|                         | <b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span><br>Which <u>person</u> does (or <u>persons</u> ) do you address for your customer? There could be more than one, explain different roles.<br>1) The application <u>allow</u> the customers to find the solution for their queries.<br>2) They <u>will</u> able to categorize their expenses.<br>3) They will be also given option for the general <u>questions</u> .<br>4) They also get the free solution where we provide our agents. | <b>9. PROBLEM ROOT CAUSE</b> <span>RC</span><br>What is the real reason that this problem exists? What is the <u>block</u> they faced the need to do this job? <u>customers have to do it because of the change in regulations.</u><br>1) Lot of customers don't know the guidelines for their problems.<br>2) Some customers have lack of <u>knowledge</u> .<br>3) Not knowing the answer to a question.<br>4) Not reading the guidelines properly  | <b>7. BEHAVIOUR</b> <span>BE</span><br>What does your customer do to address the problem and get the job done? <u>directly request for the right solar panel installed, customer usage and benefits, indirectly associated: customers spend less time on volunteering work (i.e. Greenpeace)</u><br>1) Make sure he/she reads the guidelines properly.<br>2) Make sure they find a proper solution <u>for</u> their queries.   | Focus on J&P, fit into BE, understand |
| Identify strong TR & EM | <b>3. TRIGGERS</b> <span>TR</span><br>What triggers customers to act? <u>seeing their <del>qualifications</del> installing solar panels, needing about a more efficient solution in the power.</u><br>1) Customers can know to solve their solutions.   | <b>10. YOUR SOLUTION</b> <span>SL</span><br>If you are working on an existing business, write down your current solution first. fit to the canvas, and check how much it fits the results. If you are working on a new business propose first, then keep it like a until you fit in the canvas and come up with a solution that fits within customer's limitations, solves a problem and meets the customer <u>requirements</u> .<br>1) To design a personal help desk using flask.<br>2) To provide insights on their queries in a graphical way. | <b>8. CHANNELS OF BEHAVIOUR</b> <span>CH</span><br><b>8.1 ONLINE</b><br>What kind of actions do customers take online? Extract online channels from #7<br>1) All their data are secured and being updated to cloud storage<br><b>8.2 OFFLINE</b><br>What kind of actions do customers take off-line? Extract offline channels from #7 and use them for customer development.<br>1) Make sure they find the best solutions for their complaints.                                  | Extract online & offline CH of BE     |

Problem-Solution Fit

## 4. REQUIREMENT ANALYSIS

### 4.1 FUNCTIONAL REQUIREMENT

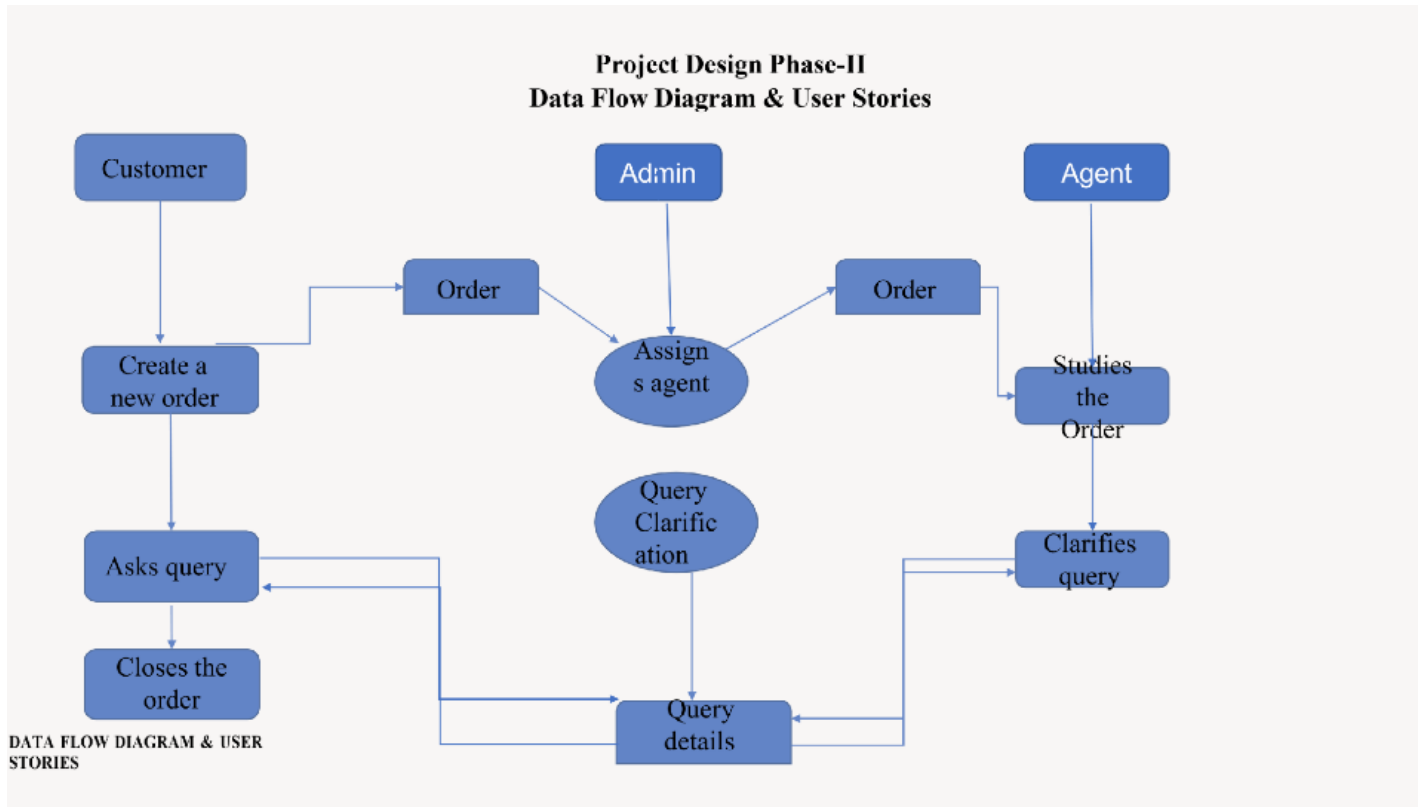
| FR No | Functional Requirement(Epic) | Sub Requirement(Story/ Sub-Task)   |
|-------|------------------------------|--|
| 1     | User Registration            | Registration through Form<br>Registration through Gmail<br>Registration through Google |
| 2     | User Confirmation            | Confirmation via Email Confirmation via OTP  |
| 3     | User Login                   | Login via Google Login with Email id and Password                                      |
| 4     | Admin Login                  | Login via Google Login with Email id and Password                                      |
| 5     | Query Form                   | Description of the issues Contact information  |
| 6     | E-mail                       | Login alertness  |
| 7     | Feedback                     | Customer feedback  |

### 4.2 NON-FUNCTIONAL REQUIREMENT

| FR No | Non-Functional Requirement | Description                                       |
|-------|----------------------------|---|
| 1     | Usability                  | To provide the solution to the problem            |
| 2     | Security                   | Track of login authentication                     |
| 3     | Reliability                | Tracking of decade status through email           |
| 4     | Performance                | Effective development of web application          |
| 5     | Availability               | 24/7 service                                      |
| 6     | Scalability                | Agents scalability as per the number of customers |

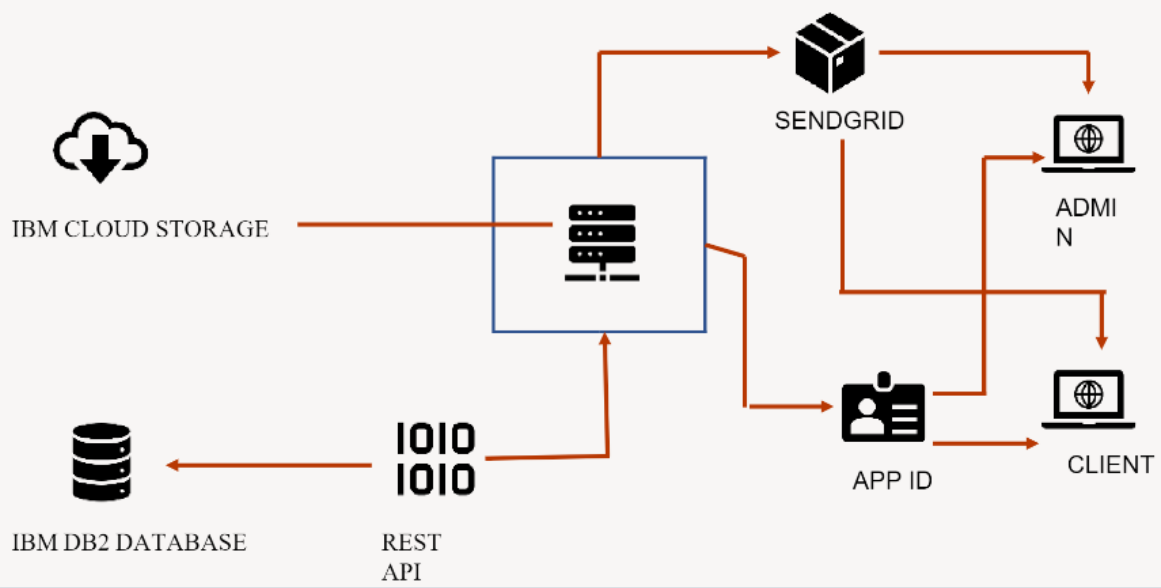
## 5. PROJECT DESIGN

### 5.1 DATA FLOW DIAGRAMS



### 5.2 SOLUTION AND TECHNICAL ARCHITECTURE

## TECHNOLOGY ARCHITECTURE



## 5.3 USER STORIES

| UserType               | Functional Requirement (Epic) | User Story Number | User Story/ Task   | Acceptancecriteria                             | Priority | Release  |
|------------------------|-------------------------------|-------------------|--|--|----------|----------|
| Customer (Mobile user) | Registration                  | USN-1             | As a customer, I can registerfor the application by entering my email, password, and confirming my password. | I can access my account / dashboard            | High     | Sprint-1 |
|                        | login                         | USN-2             | As a customer, I can loginto the application by enteringcorrect email and password.                          | I can access my account/dashboard.             | High     | Sprint-1 |
|                        | Dashboard                     | USN-3             | As a customer, I can see all the orders raised by me.  | I get all the info needed in my dashboard.     | Low      | Sprint-2 |
|                        | Order creation                | USN-4             | As a customer, I can place my order with the detailed description of my query                                | I can ask my query                             | Medium   | Sprint-2 |
|                        | Address Column                | USN-5             | As a customer, I can have conversations with the assigned agent and get my queries clarified                 | My queries are clarified.                      | High     | Sprint-3 |
|                        | Forgot password               | USN-6             | As a customer, I can reset my password by this option incase I forgot my old password.                       | I get access to my account again               | Medium   | Sprint-4 |
|                        | Order details                 | USN-7             | As a Customer ,I can see the current stats of order.   | I get abetter understanding                    | Medium   | Sprint-4 |
| Agent (web user)       | Login                         | USN-1             | As an agent I can login to the application by entering Correct email and password.                           | I can access my account / dashboard.           | High     | Sprint-3 |
|                        | Dashboard                     | USN-2             | As an agent, I can see the order details assigned to me by admin.  | I can see the tickets to which I could answer. | High     | Sprint-3 |

|                     |                  |       |  |  |      |          |
|---------------------|------------------|-------|--|--|------|----------|
| Admin (Mobile user) | Login            | USN-1 | As a admin, I can login to the appliaction by entering Correct email and password    | I can access my account/dashboard          | High | Sprint-1 |
|                     | Dashboard        | USN-2 | As an admin I can see all the orders raised in the entire system and lot more        | I can assign agents by seeing those order. | High | Sprint-1 |
|                     | Agent creation   | USN-3 | As an admin I can create an agent for clarifying the customers queries               | I can create agents.                       | High | Sprint-2 |
|                     | Assignment agent | USN-4 | As an admin I can assign an agent for each order created by the customer.            | Enable agent to clarify the queries.       | High | Sprint-1 |
|                     | Forgot password  | USN-5 | As an admin I can reset my password by this option in case I forgot my old password. | I get access to my account.                | High | Sprint-1 |



## 6. PROJECT PLANNING & SCHEDULE

### 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             | The user will login into the website and go through the services available on the web page   | 20           | High     | SASIDHARAN<br>RAGUL              |
| Sprint-2 | Admin panel                   | USN-2             | The role of the admin is to check out the database about the availability and have a track of all the things that the users are going to service | 20           | High     | RAGUL<br>NITHISH<br>GOWSEELAN    |
| Sprint-3 | Chat Bot                      | USN-3             | The user can directly talk to Chat bot regarding the services. Get the recommendations based on information provided by the user.                | 20           | High     | SASIDHARAN<br>NITHISH            |
| Sprint-4 | final delivery                | USN-4             | Container of applications using docker kubernetes and deployment the application. Create the documentation and final submit the application      | 20           | High     | SASIDHARAN<br>GOWSEELAN<br>RAGUL |

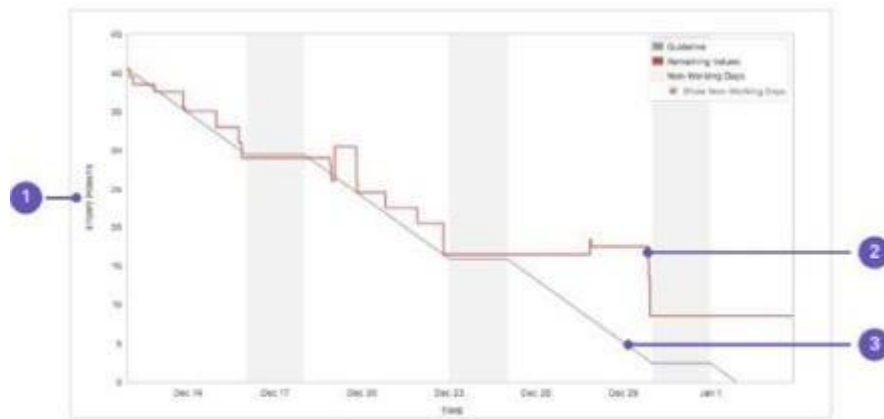
### 6.2 SPRINT DELIVERY SCHEDULE

| <b>TITLE</b>                              | <b>DESCRIPTION</b>  | <b>DATE</b>       |
|---|---|-------------------|
| Literature Survey & Information Gathering | Literature survey on the selected project & gathering information by referring the, technical papers, research publications etc.                      | 19 SEPTEMBER 2022 |
| Prepare Empathy Map                       | Prepare Empathy Map Canvas to capture the user Pains & Gains, Prepare list of problem statements  | 19 SEPTEMBER 2022 |
| Ideation                                  | List the by organizing the brainstorming session and prioritize the top 3 ideas based on the feasibility & importance                                 | 19 SEPTEMBER 2022 |
| Proposed Solution                         | Prepare the proposed solution document, which includes the novelty, feasibility of idea, business model, social impact, scalability of solution, etc. | 29 SEPTEMBER 2022 |
| Problem Solution Fit                      | Prepare problem - solution fit document.  | 29 SEPTEMBER 2022 |
| Solution Architecture                     | Prepare solution architecture document.   | 27 SEPTEMBER 2022 |
| Customer Journey Map                      | Prepare the customer journey maps to understand the user  | 29 SEPTEMBER 2022 |
| Functional Requirement                    | Prepare the functional requirement document.  | 12 OCTOBER 2022   |

|  |  |                 |
|--|--|-----------------|
| Technology Architecture                            | Prepare the technology architecture diagram.           | 12 OCTOBER 2022 |
| Data Flow Diagrams                                 | Draw the data flow diagrams and submit for review.     | 12 OCTOBER 2022 |
| Prepare Milestone & ActivityList                   | Prepare the milestones & activity list of the project. | 29 OCTOBER 2022 |
| Project Development Delivery of Sprint-1, 2, 3 & 4 | Develop & submit the developed code by testing it.     | 3 NOVEMBER 2022 |

## 6.3 REPORTS FROM JIRA

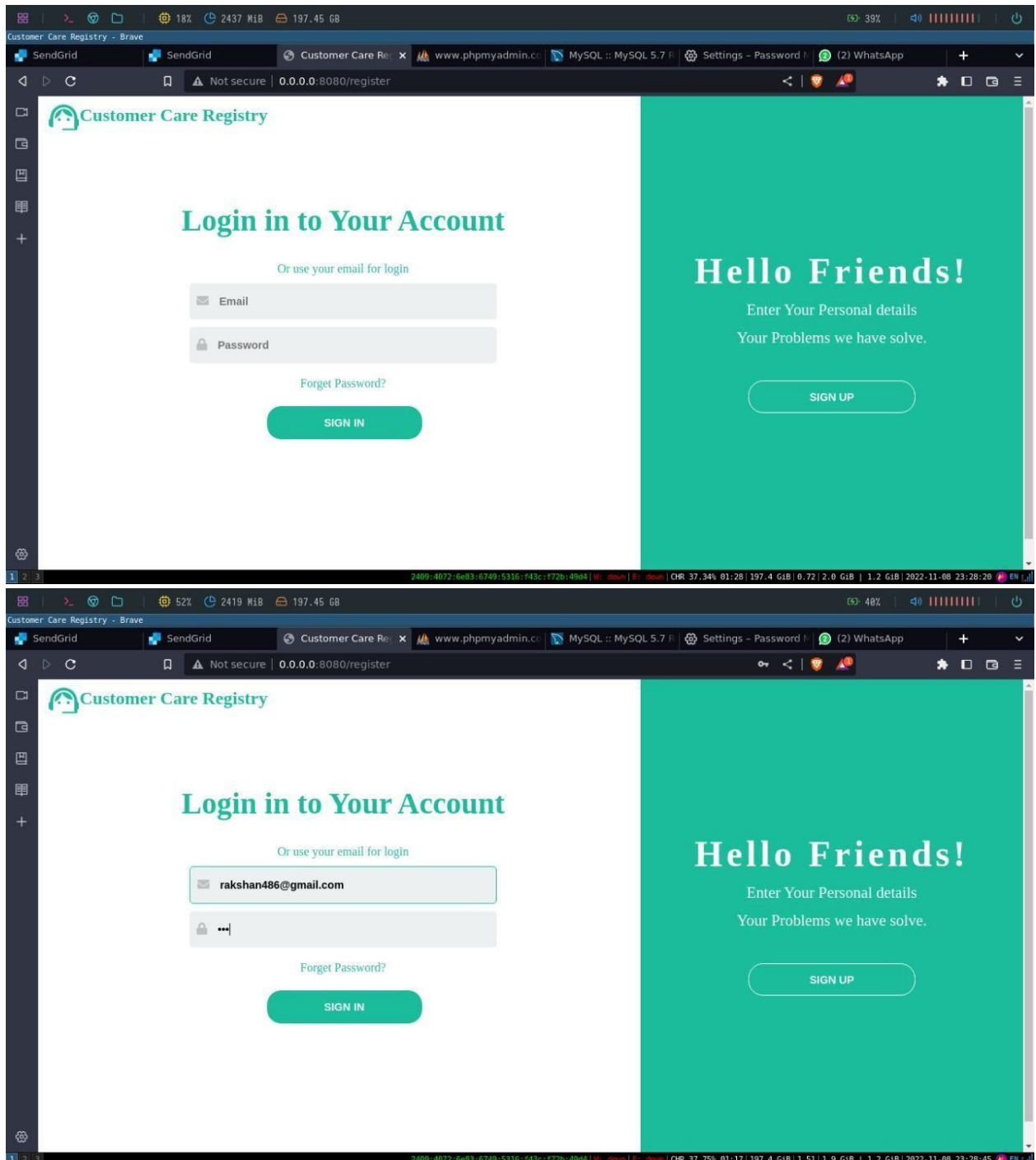
|  |        |   |
|--|--------|---|
|  ECR-3 The user will login into the website and go throug...  | DONE ✓ |  |
|  ECR-4 The role of the agent is to check out the complaint... | DONE ✓ |  |
|  ECR-5 The role of the admin is to check out the database...  | DONE ✓ |  |
|  ECR-6 he user can directly talk to Chatbot regarding the ... | DONE ✓ |  |
|  ECR-7 Container of applications using docker kubernetes...   | DONE ✓ |  |

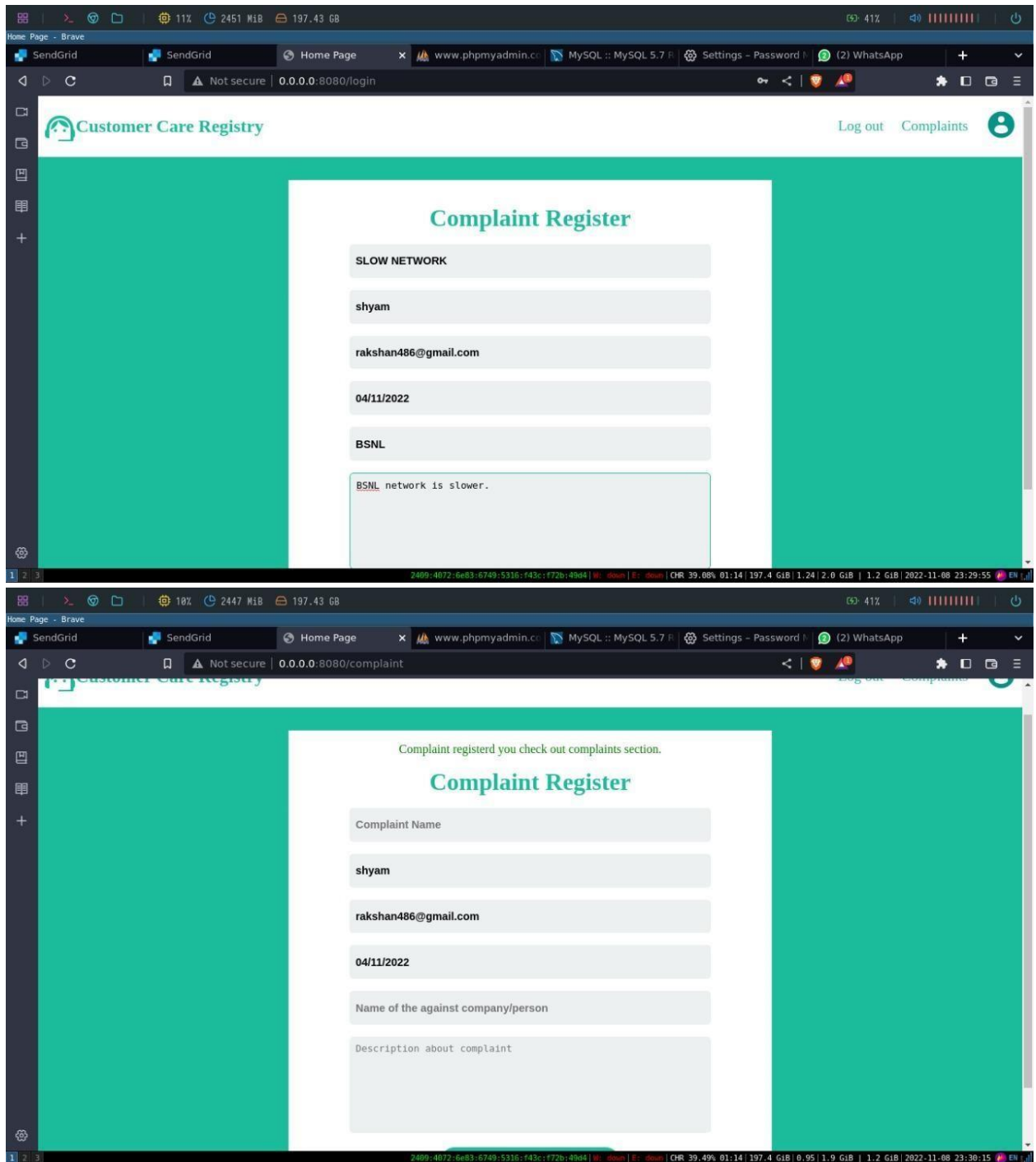


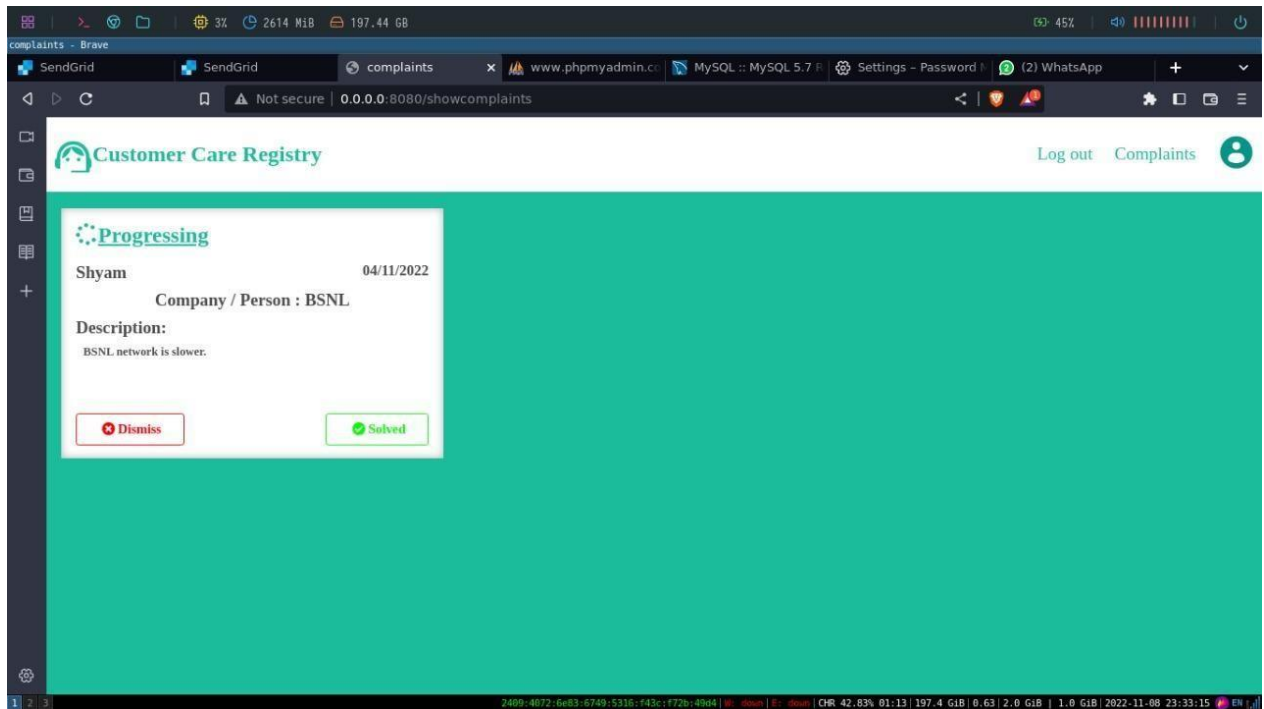
Burndown Graph

## 7.CODING & SOLUTIONING

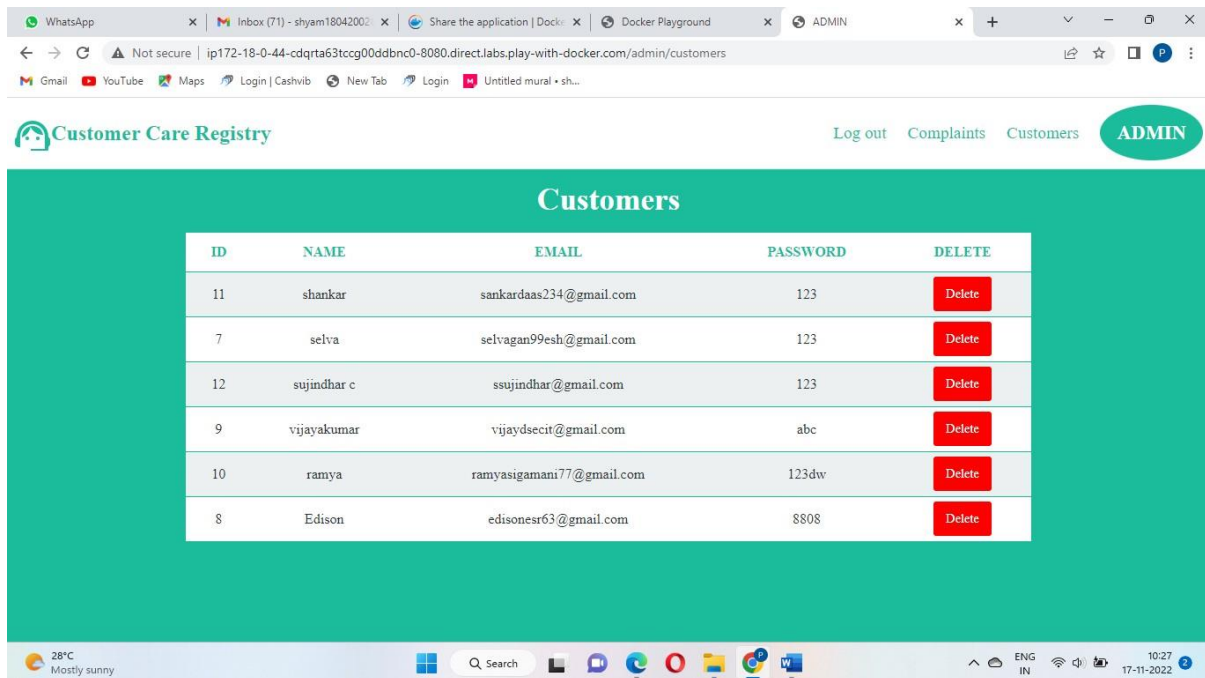
### 7.1 FEATURE 1







## 7.2 FEATURE 2



WhatsApp x | Inbox (71) - shyam18042002 x | Share the application | Docker Playground x | ADMIN x

Not secure | ip172-18-0-44-cdqrta63tccg00ddbnc0-8080.direct.labs.play-with-docker.com/admin/complaints

Gmail YouTube Maps Login | Cashvib New Tab Login Untitled mural • sh...

**Customer Care Registry** Log out Complaints Customers **ADMIN**

### Complaints

| ID | COMPLAINT NAME | USERNAME    | EMAIL                   | AGAINST NAME | DESCRIPTION                  | DATE       | SOLVED | AGENT ALLOT | DELETE |
|----|----------------|-------------|-------------------------|--------------|------------------------------|------------|--------|-------------|--------|
| 23 | vodafone       | selva       | selvagan99esh@gmail.com | vodafone     | low network                  | 16/11/2022 | 0      | Alert       | Delete |
| 21 | Jio            | vijayakumar | vijaydsecit@gmail.com   | Jio          | net-work problem in our elig | 16/11/2022 | 1      | Alert       | Delete |
| 4  | BSNL           | ranjith     | ranjith.2k01@gmail.com  | BSNL         | sfdnfydngn                   | 14.11.2022 | 0      | Alert       | Delete |
| 5  | BSNL           | ranjith     | ranjith.2k01@gmail.com  | BSNL         | klkijkh                      | 14.11.2022 | 0      | Alert       | Delete |
| 6  | BSNL           | shyam       | jayasurya1912@gmail.com | BSNL         | sdasafdaaf                   | 12/11/2022 | 1      | Alert       | Delete |
| 8  | BSNL           | shyam       | jayasurya1912@gmail.com | BSNL         | hbkhhb                       | 14.11.2022 | 0      | Alert       | Delete |

28°C Mostly sunny Q Search ENG IN 10:27 17-11-2022

## 7.3 DATABASE SCHEMA

### Table definition

#### COMPLAINTS

No statistics available.

| Name               | Data type | Nullable | Length | Scale |
|--------------------|-----------|----------|--------|-------|
| ID                 | INTEGER   | N        |        | 0     |
| USERNAM<br>E       | VARCHAR   | N        | 150    | 0     |
| EMAIL              | VARCHAR   | N        | 150    | 0     |
| AGAINST_<br>PERSON | VARCHAR   | N        | 150    | 0     |
| DES                | VARCHAR   | N        | 150    | 0     |



## Table definition

⋮ ×

COMPLAINTS

No statistics available.

| Name           | Data type | Nullable | Length | Scale |   |
|----------------|-----------|----------|--------|-------|---|
| AGAINST_PERSON | VARCHAR   | N        | 150    | 0     | 👁 |
| DES            | VARCHAR   | N        | 150    | 0     | 👁 |
| DATE           | VARCHAR   | N        | 150    | 0     | 👁 |
| SOLVED         | VARCHAR   | N        | 150    | 0     | 👁 |

## Table definition

⋮ ×

CUSTOMERDEATILS

No statistics available.

| Name     | Data type | Nullable | Length | Scale |   |
|----------|-----------|----------|--------|-------|---|
| ID       | INTEGER   | N        |        | 0     | 👁 |
| USERNAME | VARCHAR   | N        | 150    | 0     | 👁 |
| EMAIL    | VARCHAR   | N        | 150    | 0     | 👁 |
| PASSWRD  | VARCHAR   | N        | 150    | 0     | 👁 |

## **8. TESTING**

### **8.1 TEST CASES**

#### **8.1.1 FUNCTIONAL TESTING**

Functional test can be defined as testing two or more modules together with the intent of finding defects, demonstrating that defects are not present, verifying that the module performs its intended functions as stated in the specification and establishing confidence that a program does what it is supposed to do.

#### **8.1.2 WHITE BOX TESTING:**

Testing based on an analysis of internal workings and structure of a piece of software. This testing can be done using the percentage value of load and energy. The tester should know what exactly is done in the internal program. Includes techniques such as Branch Testing and Path Testing. Also known as Structural Testing and Glass Box Testing.

#### **8.1.3 BLACK BOX TESTING:**

Testing without knowledge of the internal workings of the item being tested. Tests are usually functional. This testing can be done by the user who has no knowledge of how the shortest path is found.

### **8.2 USER ACCEPTANCE TESTING**

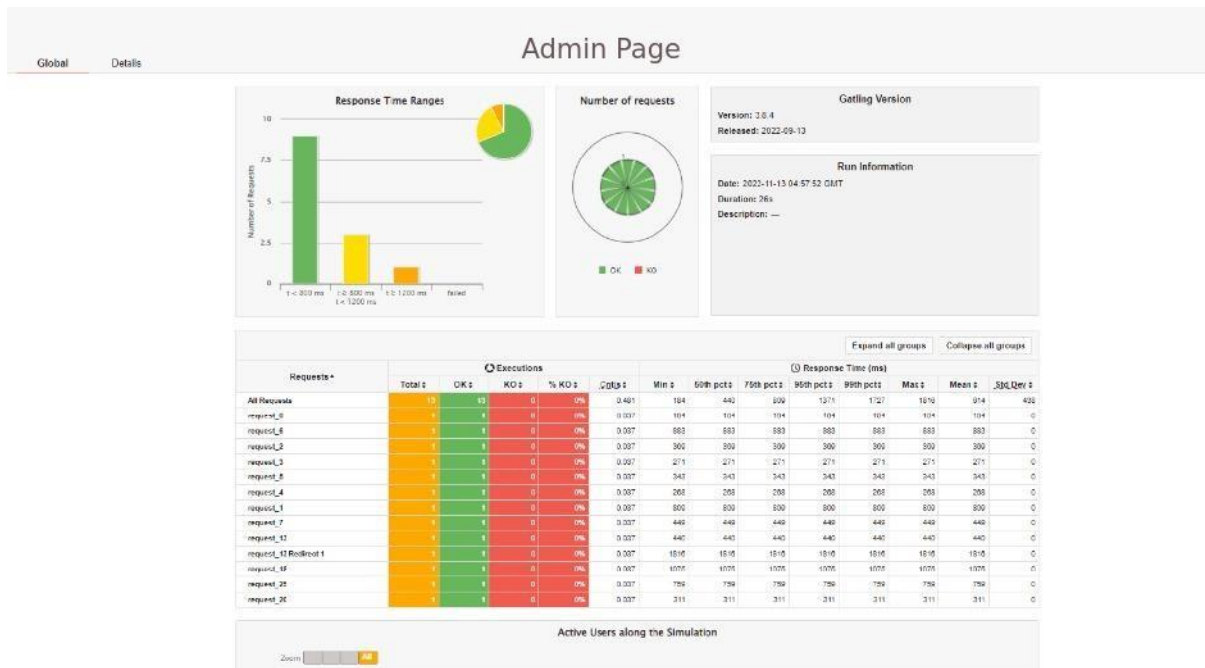
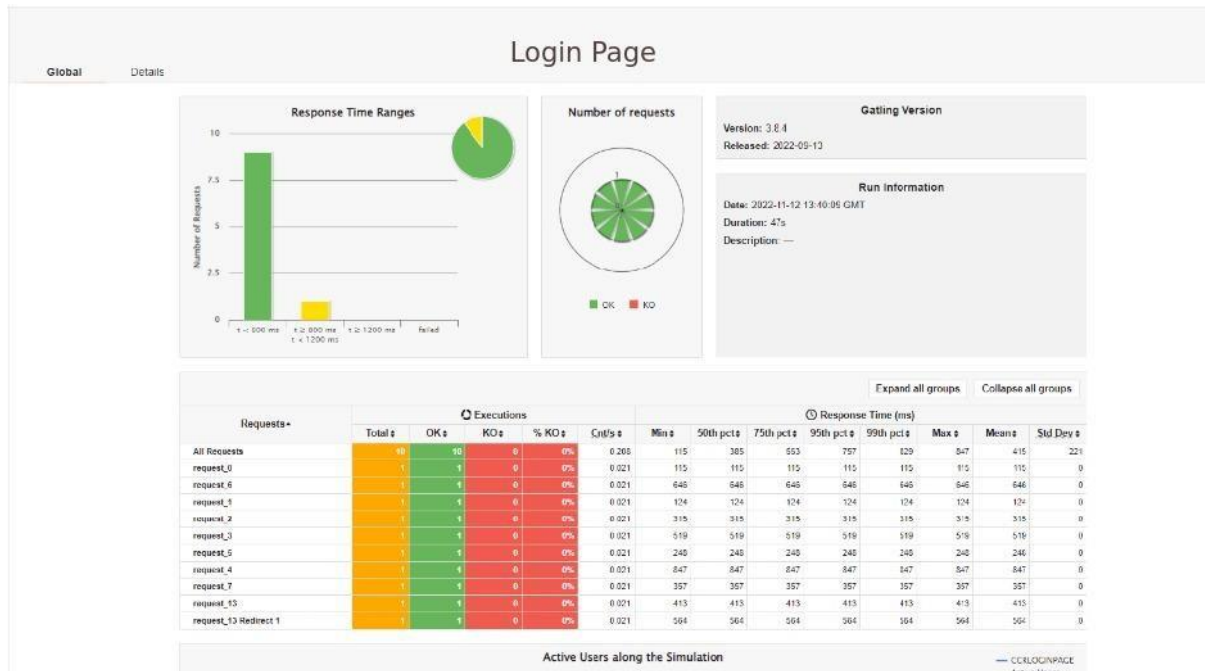
Acceptance testing can be defined in many ways, but a simple definition is the succeeds when the software functions in a manner that can be reasonably expected by the customer. After the acceptance test has been conducted, one of the two possible conditions exists. This is to find whether the inputs are accepted by the database or other validations. For example accept only numbers in the numeric field, date format data in the date field. Also the null check for the not null fields. If any error occurs then show the error messages. The function of performance characteristics to specification and is accepted. A deviation from specification is uncovered and a deficiency list is created. User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

## 8.3 TEST RESULTS

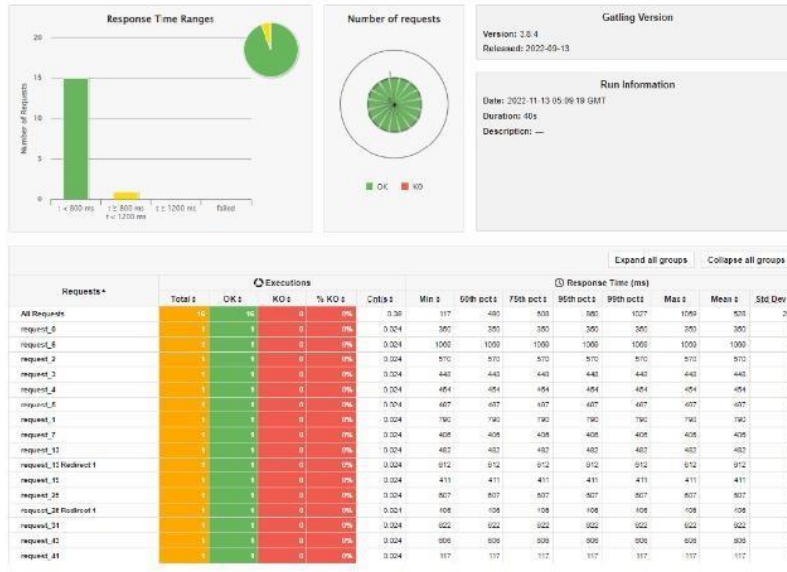
| A              | B          | C                 | D                             | E                         | F                       | G                      | H      | I           |
|----------------|------------|-------------------|-------------------------------|---------------------------|-------------------------|------------------------|--------|-------------|
| Sprint 1 UI/UX |            |                   |                               |                           |                         |                        |        |             |
| Testcase       | Type       | Component         | Scenario                      | Step to execute           | Expected result         | Actual result          | Status | Executed by |
| 1              | UI         | login/signup page | clicking on site link         | click in site link        | login/signup page loads | page load              | PASS   | Shyam       |
| 2              | Functional | login/signup page | login in to user account      | enter credentials         | login to home page      | home page loads        | PASS   |             |
| 3              | Functional | login/signup page | signup a user                 | enter user details        | login to home page      | home page loads        | PASS   |             |
| 4              | Functional | home page         | logout of the home page       | logout the user           | back to login page      | login page loads       | PASS   |             |
| 5              | Functional | login/signup page | login with unregistered user  | redirect to signup page   | back to signup page     | signup page loads      | PASS   |             |
| 6              | Functional | login/signup page | signup a existing email       | use a existing user email | back to sign up page    | signup page loads      | PASS   |             |
| 7              | Functional | wrong password    | sign in with wrong password   | login with wrong password | back to sign up page    | signup page loads      | PASS   |             |
| 8              | Functional | wrong email       | signin with wrong email       | login with wrong email    | back to signup page     | signup page loads      | PASS   |             |
| Sprint 2 db2   |            |                   |                               |                           |                         |                        |        |             |
| 1              | Functional | complaint page    | display registered complaints | click on complaint tab    | complaint list down     | complaint list down    | PASS   |             |
| 2              | Functional | complaint page    | clicking on solve             | click on solve button     | solve the complaint     | complete the complaint | PASS   |             |
| 3              | Functional | complaint page    | click on the dismiss          | click dismiss button      | delete the complaint    | deletes the complaint  | PASS   |             |
| 4              | Functional | complaint page    | fill up the complaint form    | click submit              | create the complaint    | create a new complaint | PASS   |             |

## 9. RESULTS

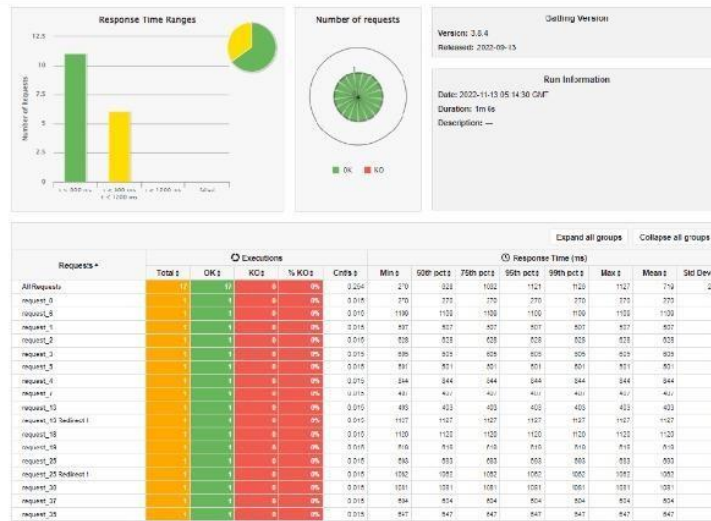
### 9.1 PERFORMANCE METRICS



## Complaint page



## Complaint form



## **10. ADVANTAGES &DISADVANTAGES**

### **Advantage**

- Flow sheet is a powerful tool to monitor clinical data and track trends
- Provides a dashboard of who needs what
- Provides total population data reporting with no chart abstraction
- Generates revenue (it shows when services are needed)
- Provides outreach information at fingertips
- Improves team-based care
- Smaller software package than EHRs
- Creating loyal customers through good customer service can provide businesses with lucrative long-term relationships.
- Customer loyalty. Loyal customers have many benefits for businesses

### **Disadvantage**

- Disease-specific, not longitudinal
- Does not include information necessary for billing
- Requires hardware, software and maintenance
- Requires data entry and data maintenance
- Parallel documentation system (i.e., some information has to be entered in two systems)
- Can't stand alone, must have an additional documentation system.
- Experience burnout and stress. Working as a customer service representative requires you to maintain a friendly demeanour at all times, regardless of how customers act or how you personally feel

## **11. CONCLUSION**

Companies today are modernizing customer care, using advanced AI to ensure a positive customer experience starting from the first interaction and throughout the buyer's journey. To properly manage customer care, companies must understand how they are succeeding and what needs improvement. This requires establishing key performance indicators (KPIs) for customer service and creating a system of gathering metrics across channels. In conclusion, customer care, involves the use of basic ethics and any company who wants to have success and grow, needs to remember, that in order to do so, it must begin with establishing a code of ethics in regards to how each employee is to handle the dealing with customers. Customers are at the heart of the company and its growth or decline. Customer care involves, the treatment, care, loyalty, trust the employee should extend to the consumer, as well in life. This concept can be applied to so much more than just customer care. People need to treat others with respect and kindness; people should try to take others into consideration when making any decision. If more people were to practice this policy, chances are the world would be a better, more understanding place for all to exist. Thereby, the customer care registry would be far helpful and approachable. It offers easy tracking, recording and notification than any other means.

## 12. FUTURE SCOPE

The current state of customer care registry, in so many companies, looks something like this:

- Customer acquisition is prioritised over retention
- Customer service investment projects are sidelined.
- Departmental efficiency is of highest priority.
- Businesses see employees in the customer service department as short-term and disposable. They are there to fulfil a specific, repetitive, purpose.
- Employees are considered unskilled and leaders hire accordingly.
- New agents view customer service as a 'last resort' or 'short term' job. People often see careers in customer support as unambitious.
- Agent training rarely goes beyond product and people skills.

In the next 3-5 years, we expect to see these **future customer care registry trends**:

- The shift from a primarily 'cost centre' to primarily 'growth centre' worldview.
- The job desk for a customer care registry director will focus more on leadership, innovation, and ability to drive company-wide improvement.
- Customer service will shift to become a strategic partner of marketing, sales, and product development. CS will help with direction, project prioritisation, and impact.
- A need for customer service leaders to take a highly strategic seat at the table. They'll need to argue for investment in talent, technology, and innovation.
- A shift in performance metrics. Forget of resolved tickets. In the future, we'll measure performance based on of customers saved from the precipice of churn.
- A career in customer care registry will not be a last resort. Top graduates will prioritise getting an education in strategic customer interaction.
- Focus on ticket deflection will reduce because brands will view each customer interaction as an opportunity to learn, build a relationship, and grow profits. They deserve a well-trained, human touch.



Modern and developing technology enables this future to exist. With new technology, administrative tasks will tend toward zero.

- The sole purpose of the customer service is to meet the expectations of the customers so that they are satisfied with the outcome. These services are also available to understand the queries of the customers and ensure that they enjoy a cost-effective experience after purchasing any product from the respective company.

## 13. APPENDIX

### SOURCE CODE

```
from flask import Flask,render_template,request,url_for,session,redirect
from flask_mysqlldb import MySQL

from sendmail import
sendemail,forget_password_mail,updated_password_mail,solve_mail

import json

import ibm_db

import re

from random import randint

from datetime import date


app = Flask(__name__)

# http://remotemysql.com/


# dsn_hostname = "b0aebb68-94fa-46ec-a1fc-
1c999edb6187.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud"

# dsn_uid = "dmt13873"

# dsn_pwd = "740yZ1Yq8Uj2E4qm"

# dsn_database = 'bludb'

# dsn_port = 31249

conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=b0aebb68-94fa-
46ec-a1fc-
1c999edb6187.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;PORT=3124
9;SECURITY=SSL;SSLServerCertificate=src/DigiCertGlobalRootCA.crt;UID=d
mt13873;PWD=740yZ1Yq8Uj2E4qm",",") # type: ignore

print(conn)

print("connection successful...")
```

```

# database configuration

# app.config['MYSQL_HOST'] = 'sql12.freesqldatabase.com'
# app.config['MYSQL_USER'] = 'sql12552843'
# app.config['MYSQL_PASSWORD'] = 'zWlZHmXNi8'
# app.config['MYSQL_DB'] = 'sql12552843'

app.secret_key = "super secret key"

# mysql = MySQL(app)


@app.route('/')
def home():
    today = date.today()
    current_date = today.strftime('%d/%m/%Y')
    if "google_token" in session:
        session["current_date"] = current_date
        return render_template('home.html')
    if "username" in session:
        session["current_date"] = current_date
        return render_template('home.html')
    return render_template('index.html')


# manually registration

@app.route('/register', methods=["POST"])
def register():
    if request.method == 'POST':
        name = request.form['uname']

```

```

mail = request.form['mail']
pwd = request.form['pwd']
cpwd = request.form['confirmpwd']
if not re.match(r'^[@]+@[^@]+\.[^@]+', mail):
    msg = 'Invalid email address !'
    return render_template('index.html',signupmsg=msg)
if pwd != cpwd:
    msg = 'Please enter correct confirm password'
    return render_template('index.html',signupmsg=msg)
# check account is exists or not
# cursor = mysql.connection.cursor()
rCheckQuery = "
result = ibm_db.exec_immediate(conn,f"SELECT * FROM customerdeatils
WHERE email LIKE '{mail}'")
# cursor.execute('SELECT * FROM customerdeatils WHERE email LIKE
% s',[mail])
# existing_user = cursor.fetchone()
# cursor.close()
existing_user = ibm_db.fetch_row(result)
#exits
if existing_user:
    msg = 'Account already exists please login.'
    return render_template('index.html',signupmsg = msg)
# not exists

# cursor = mysql.connection.cursor()

```

```

        # cursor.execute('INSERT INTO customerdeatils VALUES(null,% s,% s,%
s)',(name,mail,pwd))

        # mysql.connection.commit()

        # cursor.close()

        regInsertQuery = f"INSERT INTO customerdeatils
(username,email,passwd) VALUES('{name}','{mail}','{pwd}')"

        insertflag = ibm_db.exec_immediate(conn,regInsertQuery)

        msg = 'Your registration successfully completed.'

        # send mail

        sendemail(mail,'Account_creation')


    return render_template('index.html',signupmsg = msg)

# admin page

@app.route('/admin/<which>')

def admin(which):

    if which == 'customers':

        # cursor = mysql.connection.cursor()

        result = ibm_db.exec_immediate(conn,'SELECT * FROM customerdeatils')

        data = []

        while ibm_db.fetch_row(result):

            temp =
[ibm_db.result(result,0),ibm_db.result(result,1),ibm_db.result(result,2),ibm_db.re
sult(result,3)]

            data.append(temp)

        return render_template('admin.html',customers=data,complaints=None)

    if which == 'complaints':

        # cursor = mysql.connection.cursor()

```

```

result = ibm_db.exec_immediate(conn,'SELECT * FROM complaints')
data = []

while ibm_db.fetch_row(result):

    temp =
[ibm_db.result(result,0),ibm_db.result(result,1),ibm_db.result(result,2),ibm_db.re
sult(result,3),ibm_db.result(result,4),ibm_db.result(result,5)]

    data.append(temp)

    return render_template('admin.html',customers=None,complaints=data)

# admin delete

@app.route('/Delete/<type>/<id>')
def Delete(type,id):

    if type == 'customers':

        # cursor = mysql.connection.cursor()

        result = ibm_db.exec(conn,f'DELETE FROM customerdeatils WHERE id =
"{id}"')

        # mysql.connection.commit()

        # cursor.close()

        return redirect(url_for('admin',which='customers'))

    if type == 'complaints':

        # cursor = mysql.connection.cursor()

        result = ibm_db.exec_immediate(conn,f'DELETE FROM complaints
WHERE id = {id}')

        # mysql.connection.commit()

        # cursor.close()

        return redirect(url_for('admin',which='complaints'))

# manually login

@app.route('/login',methods=['POST','GET'])

```

```

def login():
    if request.method == 'POST':
        mail = request.form['mail1']
        password = request.form['pwd1']
        # login is admin or not
        if mail == "admin" and password == 'admin@1810':
            return redirect(url_for('admin', which='customers'))
        # check account is exists or not
        # cursor = mysql.connection.cursor()

        query = "SELECT * FROM customerdeatils WHERE email=? AND
passwr=?"

        stmt = ibm_db.prepare(conn, query) # type:ignore
        ibm_db.bind_param(stmt,1,mail) # type:ignore
        ibm_db.bind_param(stmt,2,password) # type:ignore
        ibm_db.execute(stmt) # type:ignore
        user = ibm_db.fetch_assoc(stmt) # type:ignore
        print(user,password)
        #exists
        if user:
            session["username"] = user['USERNAME']
            session['mail'] = mail
            return
        render_template('home.html',username=session["username"],mail=session["mail"]
    ])
    else:
        msg = 'mail or password is not valid.'
        return render_template('index.html',signinmsg=msg)

```

```

if request.method == "GET":
    return redirect(url_for('home'))

# logout method
@app.route('/logout')
def logout():
    if "username" in session:
        session.pop("username")
    if "google_token" in session:
        session.pop("google_token")
        session.pop("mail")
    if "mail" in session:
        session.pop("mail")
    return redirect(url_for('home'))

# complaint register
@app.route('/complaint',methods=['POST'])
def complaint():
    if request.method == 'POST':
        complaint_name = request.form['complaint_name']
        name = request.form['name']
        mail = request.form['email']
        against_person = request.form['against_person']
        date = request.form["date"]
        des = request.form['complaint_des']
        # cursor = mysql.connection.cursor()

```



```

    if not name == session["username"] or not mail == session["mail"]:
        msg = "please don't change username and mail."
        return render_template('home.html',msg=msg)

    result = ibm_db.exec_immediate(conn,f"INSERT INTO complaints
(username,email,against_person,des,date,solved)
VALUES('{name}','{mail}','{against_person}','{des}','{date}','{0}'))")

    # mysql.connection.commit()

    # cursor.close()

    sendemail(mail,'complaint_creation')

    msg = 'Complaint registerd you check out complaints section.'
    return render_template('home.html',msg=msg)

# show complaints and progress

@app.route('/showcomplaints')
def showcomplaints():
    # cursor = mysql.connection.cursor()

    # cursor.execute("SELECT * FROM complaints WHERE username= % s
AND email=% s",(session["username"],session["mail"]))

    # details = cursor.fetchall()

    # cursor.close()

    query = "SELECT * FROM complaints WHERE username=? AND email=?"
    stmt = ibm_db.prepare(conn, query) # type:ignore
    ibm_db.bind_param(stmt,1,session["username"]) # type:ignore
    ibm_db.bind_param(stmt,2,session['mail']) # type:ignore
    ibm_db.execute(stmt)

    data = []

    while ibm_db.fetch_row(stmt):

```

```

    temp =
[ibm_db.result(stmt,0),ibm_db.result(stmt,1),ibm_db.result(stmt,2),ibm_db.result
(stmt,3),ibm_db.result(stmt,4),ibm_db.result(stmt,5),ibm_db.result(stmt,6)]

    print(temp)

    data.append(temp)

    return render_template('complaints.html',complaints=data)

# update complaint
@app.route('/solve',methods=["POST"])
def solve_complaint():
    if request.method == "POST":
        c_id = request.form['c_id']

        print(c_id)

        # cursor = mysql.connection.cursor()

        # cursor.execute("UPDATE complaints SET solved = % s WHERE id = %
s",('1',c_id,))

        query = "UPDATE complaints SET solved = '1' WHERE id = ?"

        # mysql.connection.commit()

        stmt = ibm_db.prepare(conn, query) # type:ignore
        ibm_db.bind_param(stmt,1,c_id) # type:ignore
        ibm_db.execute(stmt)

        detail = ibm_db.result(stmt,0)

        print(detail)

        # cursor.execute("SELECT * FROM complaints WHERE id = % s",[c_id])

        query2 = "SELECT * FROM complaints WHERE id = ?"

        stmt1 = ibm_db.prepare(conn, query2) # type:ignore

```

```

    ibm_db.bind_param(stmt1,1,c_id) # type:ignore
    ibm_db.execute(stmt1)
    details = ibm_db.result(stmt1,0)
    # cursor.close()
    print(details)
    # solve_mail(session['mail'],'user')
    return redirect(url_for('showcomplaints'))
return redirect(url_for('showcomplaints'))

# # admin agent allot
# @app.route('/solve_admin',methods=["POST"])
# def solve_admin():
#     if request.method == "POST":
#         c_id = request.form['c_id']
#         # cursor = mysql.connection.cursor()
#         cursor.execute("SELECT * FROM complaints WHERE id = % s",[c_id])
#         query = "SELECT * FROM complaints WHERE id = %"
#         details = cursor.fetchone()
#         cursor.close()
#         solve_mail(details[3],'admin')
#         return redirect(url_for('admin',which='complaints'))
#     return redirect(url_for('admin',which='complaints'))
# remove complaint
@app.route('/dismiss',methods=["POST"])
def dismiss_complaint():
    if request.method == "POST":

```

```

c_id = request.form["c_id"]

# cursor = mysql.connection.cursor()

# cursor.execute("DELETE FROM complaints WHERE id = % s",[c_id])

# mysql.connection.commit()

# cursor.close()

query = "DELETE FROM complaints WHERE id = ?"

stmt = ibm_db.prepare(conn, query)

ibm_db.bind_param(stmt,1,c_id) # type:ignore

ibm_db.execute(stmt)

return redirect(url_for('showcomplaints'))

return redirect(url_for('showcomplaints'))

# send otp in user mail id

@app.route('/send_otp',methods=["POST","GET"])

def send_otp():

    if request.method == "POST":

        mail = request.form["mail"]

        cursor = mysql.connection.cursor()

        cursor.execute("SELECT * FROM customerdeatils WHERE email = %
s",[mail])

        temp = cursor.fetchone()

        cursor.close()

        if not temp:

            return render_template('forget.html',type='otp',msg1='Your account
doesn\'t exist please register')

        otp = randint(10 ** 5,10**6)

        forget_password_mail(mail,otp)

        session["otp"] = otp

```

```

        return render_template('forget.html',type='update_password',tempmail=mail)
# forget password method
@app.route('/forgetpassword/<type>',methods=["POST","GET"])
def forgetpassword(type):
    if type == 'otp':
        return render_template('forget.html',type=type)
    if request.method == "POST":
        mail = request.form["mail"]
        otp = request.form["otp"]
        pwd = request.form["password"]
        c_pwd = request.form["con_pwd"]
        print(otp,session['otp'])
        if not pwd == c_pwd:
            msg = 'Please Enter Password properly'
            return render_template('forget.html',type='updatePassword',msg=msg)
        if not otp == str(session['otp']):
            msg = "Your OTP is Incorrect."
            return render_template('forget.html',type='updatePassword',msg=msg)
        cursor = mysql.connection.cursor()
        cursor.execute("UPDATE customerdeatils SET passwrđ = % s WHERE
email = % s",(pwd,mail))
        mysql.connection.commit()
        cursor.close()
        msg = 'password updated successfully'
        updated_password_mail(mail)
        return render_template('forget.html',type='updatePassword',msg=msg)

```

```
if __name__ == '__main__':  
    app.run(host = '0.0.0.0', port = 8080, debug=True)
```

### **GitHub & Project Demo Link**

**GitHub link:** <https://github.com/IBM-EPBL/IBM-Project-12303-1659447004>

**Demo link:** <https://youtu.be/XVklWCRjMCo>