**A company is having manufacturing plants and warehouses in various parts of the country. They manufacture ice-cream and milk products. They want to build software to achieve two goals.**

* **Manage the inventory**
* **Quickest delivery to the customers**

**Assignment 1:**

**1. Please make a BRD which can be presented to the client along with complete development and resource plan.**

1. Executive Summary

The Document describes the requirements for developing software for Dadla dairy, a manufacturer of ice cream and milk products with products with a network of manufacturing plants and warehouses across the country. The proposed system will focus on two primary objectives: Effective inventory management and enabling the quickest delivery to customer. By achieving these goal the company aims to enhance operational efficiency, minimize waste, and improve customer satisfaction .

1. Business Goals
	1. Enhanced Supply Chain – Ensure real time monitoring of inventory levels across all warehouses and plants to reduce spoilage and optimize stock level.
	2. Customer satisfaction. - Minimizing the order fulfillment time and ensure product freshness.
	3. Improvise Delivery system - Implement a system to identify the fastest delivery routes and automate order allocation based on proximity and inventory availability.

1. Business objective –
	1. Develop a centralized system to track and manage inventory across all location.
	2. Reduce the inventory wastage by implementing real time data and expiry date tracking mechanism.
	3. Integrate delivery route optimization with real time traffic and weather data.
	4. Automation of order processing and dispatch.
	5. Enable reporting and analytics for better decision making and demand forecast.
2. Business Rules –
	1. Inventory must be updated in real-time upon receipt, dispatch, or adjustment.
	2. Orders should only be fulfilled if the inventory is available and meets the required shelf-life criteria.
	3. Delivery routes must prioritize freshness while minimizing transportation costs.
	4. Customer priority orders (e.g., bulk orders) must be flagged for immediate action.
	5. Warehouse reordering thresholds should trigger automated purchase orders.
3. Scope of the System
	1. in Scope
* Inventory management at manufacturing plant and warehouse
* Delivery route optimization
* Analytics and reporting dashboard
* Order management and allocation.



* 1. Out of the scope
* Manufacturing process management
* Customer relationship management



1. Assumptions
	1. All warehouse and plant have internet connectivity for real-time updates.
	2. Delivery vehicles are GPS enabled to support route optimization.
	3. Data from external source (e.g. traffic, weather) is available via APIs.
2. Constraints
	1. Budget limitation may restrict the scope of features.
	2. Integration with legacy system may pose technical challenges.
	3. Project timelines must align with the company’s peak season schedules
3. Risk Analysis.

Technological risk –

* Integration issues with existing system
* System scalability with increasing business demand.

Political risk –

* Resistance from employees due to new processes and technology.
* Potential vendors locking to third party tools.

Business risk –

* Downtime during system rollout.
* Customer dissatisfaction due to transition delays

Requirement risk

* Incomplete or evolving requirement from stakeholders.
1. Business Process Overview

Legacy System (As is Process) –

* Inventory is managed manually or using isolated system.
* Order allocation is manually determined , leading to inefficiencies.
* Delivery routes are planned based on experience not optimized.

Proposed Recommendation (to be)-

* A centralized system enables automated inventory system.
* Orders are allocated and dispatched through an intelligent algoritm.
* Delivery routes are optimized dynamically for speed and cost.
1. Business Requirements
	1. Inventory management –
		1. Realtime inventory tracking
		2. Expiry date monitoring.
	2. Order management
		1. Automated order allocation based on location and inventory
		2. Bulk order prioritization.
	3. Delivery optimization
		1. Dynamic rerouting incase of delays.
		2. Integration with GPS and realtime data for route planning.
	4. Reporting
		1. Insights into inventory levels, order trends
2. Development and resource plan

Development plans

* 1. Phase 1 – requirement gathering, stakeholder,workshop and system design (4 weeks).
	2. Phase 2 – Development of core modules ( Inventory , order and Delivery) (12 weeks).
	3. Phase 3 – Integration with external system(APIs, GPS) and legacy system (6 weeks).
	4. Phase 4 – Testing and Quality assurance (4 weeks)
	5. Phase 5 – Deployment, training, and support (4 weeks).

Resource Plan – 1 Project manager,3 Developer, 2 QA Engineers, Business Analyst, 2 Support Team

1. Appendices

List of Acronyms

Glossary terms used.

1. Related documents
	1. Study report
	2. Market analysis for inventory and delivery optimization software.
	3. Stakeholder Requirement document.

**2. Prepare process flow diagram using your imagination.**



**Assignment 2**

**1. Write an introduction letter to a client introducing yourself as a business analyst in charge of working with the client and his team to start the business understanding process**

1. Inventory must be updated in real-time upon receipt, dispatch, or adjustment.
2. 2. Orders should only be fulfilled if the inventory is available and meets the required shelf-
3. life criteria.
4. 3. Delivery routes must prioritize freshness while minimizing transportation costs.
5. 4. Customer priority orders (e.g., bulk orders) must be flagged for immediate action.
6. 5. Warehouse reordering thresholds should trigger automated purchase orders.

Dear Sir/Ma’am,

I hope this massage finds you well. My name is Shubham Baheti, and I am delighted to introduce myself as the Business analyst assigned to collaborate with you and your team on this exciting project.

Understanding the challenges and opportunities within the manufacturing and logistics sectors particularly in delivering exceptional customer service, is a domain I am passionate about. With your vision of managing inventory and ensuring the quickest delivery of your ice-cream and milk product, my role will be to work with you to transform these goals into a robust, tailor made software solution.

To begin, I aim to thoroughly understand your current processes, challenges and aspirations. Together we will explore your operational workflows, identify key requirement, and map out a strategic plan that aligns with your business objectives, your insight will be valuable in ensuring the solution we design is practical, scalable and optimized for your unique need.

I look forward to discussing your expectation and gathering inputs from your team during our initial meetings. In the meantime, please feel free to share your document, current process, or initial thoughts that could help us hit the ground running.

Thank you for the opportunity to collaborate on this project. I am confident that, together, we will develop a solution that adds significant value to your business operations. Please let me know a convenient time for us to connect further.

Looking forward to working with you

Warm Regards,

Shubham Baheti

Business Analyst

+917083356360.

**2. Prepare a brief BRD and SRS for a project – Ticketing system**

Business Requirement Document (BRD)

Project Name – Ticketing System

Prepared by – Shubham Baheti

Date – 20 April 2025

Executive Summary

The objective of this project is to implement a comprehensive solution for managing customer support ticket effectively. This system will streamline the process of ticket creation, tracking, resolution, and closure. It will be designed to ensure seamless communication between user, support agents, and managers, improving the overall efficiency of customer support operations. Additionally, the system will include advanced features for monitoring service level agreement (SLA) compliance, enhancing reporting capabilities, and integrating with a knowledge base for faster problem resolution.

1. Document revision

|  |  |  |
| --- | --- | --- |
| Date | Version Name | Document Changes |
| 20/04/2025 | 1 | Draft Requirement Gathering |
| 21/04/2025 | 2 | Made changes in the requirement gathering |
| 22/04/2025 | 3 | Updated RACi |
| 23/04/2025 | 4 | Changed the use case diagram |
| 24/04/2025 | 5 | Updated RTM |

1. Approval

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Role | Name | Title | Signature | Date |
| Project Sponsor | Krishna Navandar | Requirement | Krishna Navandar | 21/04/2025 |
| Business Owner | Shubham jaju | Requiremnet | Shubham jaju | 21/04/2025 |
| Project Manager | Pushkar nyati | BRD | Pushkar nyati | 21/04/2025 |
| System Architect | Yash nokja | Architecture | Yash nokja | 21/04/2025 |
| Development Lead | Shriram sarda | Requirement  | Shriram sarda | 21/04/2025 |
| User Experience Lead  | Hritik patil | Design | Hritik patil | 21/04/2025 |
| Quality Lead | Mohit tumasarkar | Quality | Mohit tumasarkar | 21/04/2025 |
| Content Lead | Chetan patil | Content | Chetan patil | 21/04/2025 |

1. RACI

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Position | \* | R | A | S | C | I |
| Aditya | Hiring Manager |  |  |  |  | Yes |  |
| Bharat | Recruiter |  |  |  |  | Yes |  |
| Krishna navandar | Project sponsor | Yes | Yes |  |  | Yes | Yes |
| Shubham Jaju | Business Owner | Yes | Yes | Yes |  | Yes | Yes |

1. Introduction :
	1. Business Goals
* Steamline Issue Resolution
* Enhance Transparency
* Improve Accountability
* Boost Operational Efficiency
* Enhance Data-Driven Decisions.
	1. Business Objectives
		+ Enhanced Customer Satisfaction
		+ Optimized Support team performance
		+ Better decision Making
		+ Cost efficiency
	2. Business Rules
		+ Ticket must be assigned to agent within 10 Minutes of creation
		+ Tickets cannot be closed until all required information is provided , and the issue is fully resolved.
		+ Support agents must adhere to the SLAs defined for each ticket size
		+ A ticket must be reopened if a customer reports the issues again with in 30 days of closure.
	3. Background
		+ The company current designing system is inefficient , causing a slow reponse times, Missed SLAs, and manual processing To address these issues, the company will implement a new Ticketing System that automates ticket management, tracks SLAs, integrates a knowledge base, and provides detailed reporting. This system will streamline support processes, improve customer satisfaction, and ensure compliance with SLAs.
		+ The project aims to enhance efficiency, reduce costs, and provide better data insights for decision-making. Key stakeholders include customer support, IT, and business leadership. The project will be completed in 6 months, with phased rollout and ongoing support.
	4. Scope of the System

In-scope

* + - User portal for raising tickets.
		- Admin/Support team portal for ticket management.
		- Automated ticket assignment and prioritization based on predefined rules.
		- SLA tracking and notification alerts for pending tickets.
		- Reports and dashboards for performance analysis.

Out of the scope

* + - Integration with third-party tools (to be planned in future phases).
		- Hardware procurement and setup.
1. Assumptions
	* + All users will have access to a computer or mobile device with an internet connection.
		+ Support teams will adhere to SLA policies as defined by the organization
2. Constraints:
	* + The system must be developed and implemented within a 6-month timeline.
		+ The system should be scalable to handle up to 10,000 tickets per day without performance degradation.
		+ It must comply with applicable data privacy regulations (e.g., GDPR).
3. Risk
	1. Technical Risk:
		* Risk: Integration and compatibility issues with existing systems (CRM, email, chat, etc.) could lead to delays or functionality problems, causing disruptions in the ticket management process.
		* Mitigation: Conduct detailed technical assessments and integration testing to ensure compatibility with current systems. Allocate time for troubleshooting and ensure robust APIs for seamless data exchange.
	2. Political Risk:
		* Risk: Internal organizational changes, such as shifts in key personnel or management priorities, could affect the project's support or direction, causing delays or shifting project goals.
		* Mitigation: Maintain regular communication with key stakeholders and senior leadership to ensure alignment. Create clear documentation to keep all parties informed, regardless of organizational changes.
	3. Requirement Risk:
		* Risk: The requirements for the ticketing system might not be fully understood or documented, leading to misalignment between business needs and the delivered solution.
		* Mitigation: Engage stakeholders early in the project to define detailed requirements. Use iterative feedback and validation (e.g., user stories and prototypes) to refine the system according to actual needs.
	4. Business Risk:
		* Risk: The new ticketing system might not achieve the expected improvements in customer satisfaction or operational efficiency, leading to a lack of return on investment (ROI).
		* Mitigation: Set clear, measurable business objectives before the project starts (e.g., reduced response time, SLA compliance). Regularly assess the system post-implementation and adjust processes as needed based on feedback and performance metrics.
4. Business Process Overview
5. Legacy System (AS-IS)

The current ticketing process is largely manual, involving several disconnected systems and processes that result in inefficiencies and delays. Below are the key elements of the legacy system:

* + - Ticket Creation: Customers submit support tickets via email or phone, which are manually entered into the system by agents. This often leads to errors in ticket categorization and delays in assignment.
		- Ticket Assignment: Tickets are manually assigned to support agents based on availability or expertise. This process is time-consuming and lacks prioritization, leading to unequal workload distribution among agents.
		- SLA Management: SLA compliance is monitored manually through spreadsheets or ad hoc tracking, which is prone to human error. Tickets often exceed SLA timelines, leading to customer dissatisfaction.
		- Resolution & Closure: Agents resolve tickets based on available information, but often have limited access to knowledge resources, requiring them to solve recurring issues from scratch. The closure process is also manual and lacks consistency, leading to reopened tickets.
		- Reporting: Reporting is done manually through ad hoc data collection and spreadsheets, making it difficult to track key performance metrics (KPIs) like ticket resolution time, agent performance, and SLA adherence.
		- Knowledge Sharing: Information related to past issues and resolutions is stored across different systems, making it challenging for agents to quickly access relevant solution.



1. Proposed Recommendations (TO-BE)

 The proposed ticketing system aims to address the inefficiencies of the legacy system by automating and streamlining key processes. The following changes will improve the overall ticketing process:

* + - Ticket Creation: The new system will allow customers to create tickets through multiple channels (email, web portal, chat, etc.). The system will automatically capture key details such as issue type, urgency, and customer information, eliminating manual data entry and reducing errors.
		- Ticket Assignment: The system will automatically categorize and prioritize tickets based on predefined rules (e.g., urgency, issue type). Tickets will be assigned to the most appropriate agent based on their expertise and availability, ensuring a more efficient workload distribution.
		- SLA Management: The new system will include automated SLA tracking, with real-time alerts and escalations for tickets nearing or exceeding their resolution deadlines. This will help ensure that tickets are resolved on time and SLAs are met.
		- Resolution & Closure: The system will integrate a knowledge base, allowing agents to quickly access solutions for common issues. Automated workflows will guide agents through the ticket resolution process, ensuring consistency and reducing resolution time. Tickets will be automatically closed once all resolution steps are completed, and customers are satisfied.
		- Reporting: The system will include built-in reporting features, providing real-time dashboards and detailed reports on KPIs such as ticket volume, resolution time, agent performance, and SLA compliance. These reports will be customizable, enabling managers to monitor performance and identify areas for improvement.
		- Knowledge Sharing: A centralized knowledge base will be integrated into the system, allowing agents to search for and contribute solutions to recurring issues. This will help reduce resolution times, improve consistency, and enable new agents to ramp up more quickly.



1. Business Requirements
	* + Ticket Creation and Submission

The system must allow customers to submit tickets through multiple channels, including email, web portal, and chat, ensuring seamless ticket creation across various platforms.

* + - Automated Ticket Categorization and Prioritization

The system must automatically categorize and prioritize tickets based on predefined criteria such as issue type, urgency, and customer profile.

* + - SLA Management and Alerts

The system must track and monitor ticket SLAs automatically, providing real-time alerts and escalation notifications for tickets approaching or breaching their SLA deadlines.

* + - Ticket Assignment and Routing

The system must automatically assign tickets to the most appropriate agent based on factors such as expertise, workload, and availability.

* + - Knowledge Base Integration

The system must integrate a centralized knowledge base that allows agents to access solutions for recurring issues. The knowledge base must be easily searchable and allow agents to contribute new solutions.

* + - Ticket Resolution Workflow The system must provide an automated workflow for ticket resolution that guides agents through the necessary steps, ensuring consistency in the resolution process.
		- Ticket History and Audit Trail

The system must maintain a complete history of all interactions related to each ticket, including agent notes, customer updates, and actions taken.

* + - Reporting and Dashboards

The system must include customizable reporting features and real-time dashboards to track KPIs such as ticket volume, resolution time, SLA compliance, and agent performance.

* + - User Roles and Permissions

The system must have configurable user roles and permissions to restrict access to sensitive data and ensure that agents and managers can only view or edit information relevant to their roles.

* + - Multi-Language Support

The system must support multiple languages to cater to a diverse customer base, allowing customers and agents to interact in their preferred language.

* + - Mobile Access for Support Agents The system must provide mobile access for support agents, allowing them to view and manage tickets from anywhere.
		- Ticket Escalation Process The system must include an automated ticket escalation process that triggers based on predefined conditions (e.g., unresolved ticket for a certain period or SLA breach).
		- Customer Feedback and Satisfaction TrackingThe system must allow customers to provide feedback on ticket resolution and agent performance, and this data must be captured and analyzed for continuous improvement.
		- Security and Data Privacy ComplianceThe system must comply with relevant data privacy regulations (e.g., GDPR) and ensure secure handling of sensitive customer data.
1. Appendices
	1. List of Acronyms

AI - Artificial Intelligence

GDPR - General Data Protection Regulation

UAT - User Acceptance Testing

D&I - Diversity and Inclusion

ROI - Return on Investment

AS-IS - Current State of the Process/System

TO-BE - Future State of the Process/System

KPI - Key Performance Indicator

TAT - Turnaround Time

SLA - Service Level Agreement

API - Application Programming Interface

UI - User Interface

UX - User Experience

BRD - Business Requirements Document

RTM - Requirement Traceability Matrix

DPA - Data Protection Act (often used with GDPR)

* 1. Glossary of Term
1. Ticket

A record of a customer's issue, question, or request that is tracked and managed through the ticketing system. Tickets are created by customers or automatically generated by the system, and they represent an individual support case to be resolved by an agent

1. SLA (Service Level Agreement)

A formal agreement between the company and the customer that defines the expected timeframes for responding to and resolving tickets. SLAs outline the maximum time allowed for each stage of the ticket lifecycle.

1. Knowledge Base

A centralized repository of articles, solutions, FAQs, and troubleshooting guides accessible to support agents to assist in resolving tickets more efficiently.

1. Ticket Assignment

The process of routing a support ticket to the appropriate agent or team for resolution, based on factors such as expertise, availability, and workload.

1. Ticket Life cycle

The various stages a ticket goes through from creation to closure. These stages typically include ticket creation, categorization, assignment, resolution, and closure.

1. Escalation

The process of transferring a ticket to a higher level of support or management when it cannot be resolved at the current level within the defined SLA or requires additional expertise.

1. Agent

A support team member responsible for handling and resolving customer tickets within the ticketing system.

1. Customer Feedback

Feedback provided by customers after the resolution of their support tickets, typically through surveys or ratings.

1. Report/Reporting Dashboard

A tool within the ticketing system that generates visual or written reports based on key performance metrics such as ticket volume, SLA compliance, resolution times, and agent performance.

1. Multi-channel Support

The ability for customers to submit tickets through various communication channels, such as email, web forms, live chat, or social media.

1. Ticket Categorization

The process of assigning tickets to specific categories or types, such as technical support, billing inquiries, or product issues, to streamline the resolution process.

1. Ticket Status

The current state of a ticket, indicating its progress in the resolution process (e.g., New, In Progress, Awaiting Customer Response, Resolved, Closed).

1. Automated Workflow

A set of predefined rules or processes that automatically guide tickets through their lifecycle, such as ticket assignment, escalations, and reminders for overdue tickets.

1. Ticket Closure

The final stage in the ticket lifecycle, where a ticket is marked as resolved and closed after the customer’s issue has been addressed and no further action is needed.

1. User Role/Permissions

The access level and permissions assigned to different users within the ticketing system, such as agents, managers, and administrators, to ensure appropriate access to data and functions.

10.3 Related Documents

* 1. Business Case Document
	2. Business Requirement Document.

SRS (Software requirement specification).

1. Purpose –

The purpose of ticketing life cycle system is to streamline the process of issue reporting, tracking, and resolution within an organization. It provides user with a platform to create tickets for their concern or inquiries, assigns this tickets to appropriate agents, and ensure timely updates on their progress. The system Fosters effective communication between users and support team, enhances customer satisfaction while improving the efficiency of the ticket management process.

1. Scope

The Ticketing Life Cycle System is designed to cater to organizations of varying sizes, supporting multiple roles such as users, agents, and administrators.

Key functionalities include:

* + - Ticket Creation and Management: Users can report issues, which are categorized and prioritized for resolution.
		- Agent Assignment and Resolution: Tickets are assigned to agents based on predefined rules and availability.
		- Role-Based Dashboards: Users, agents, and administrators have tailored views to manage their specific tasks efficiently.
		- Tracking and Notifications: The system keeps stakeholders informed through real-time updates and alerts.
		- Analytics and Reporting: Administrators can analyze trends, monitor performance, and generate reports to optimize operations.

The system supports scalability, security, and compliance with industry standards, making it suitable for technical support, customer service, and other business functions requiring issue resolution.

1. Overview

The Ticketing Life Cycle System is a web-based application offering a user-friendly interface accessible across devices. It incorporates modules for:

* + - User Management: Facilitates user registration, login, and profile management.
		- Ticket Management: Covers the full ticketing workflow, including creation, assignment,status updates, and resolution.
		- Agent Management: Allows administrators to assign roles, monitor workloads, and evaluate agent performance.
		- Notification System: Ensures users and agents receive timely updates about ticket status and escalations.
		- Integration and Extensibility: The system supports integration with third-party tools like Slack or Microsoft Teams and offers APIs for additional customization.
1. Software Interfaces
	1. Operating Systems:
		1. The system shall be compatible with Windows, macOS, and Linux for on-premises deployments and accessible on any OS via a browser for cloud-based deployments
	2. Web Browsers:
		1. Supports modern web browsers like Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari (latest versions).
	3. Database Management System
		1. Utilizes relational databases such as MySQL, PostgreSQL, or cloud-based alternatives like AWS RDS or Azure SQL Database.
	4. Notification Services
		1. Integrates with email systems and SMS gateways for sending ticket status notification.
2. Hardware Interface –
3. User devise
4. oUsers and agents require devices like desktops, laptops, tablets, or smartphones
5. with internet connectivity to access the system.
6. •Network Infrastructure
7. oRequires a reliable internet connection with a minimum bandwidth of 10 Mbps
8. for smooth access and operation.
	1. User devise
		1. Users and agents require devices like desktops, laptops, tablets, or smartphones with internet connectivity to access the system.
	2. Network Infrastructure
		1. Requires a reliable internet connection with a minimum bandwidth of 10 Mbps for smooth access and operation.

Functional Requirement

|  |  |  |  |
| --- | --- | --- | --- |
| Req ID | Requirement Name | Requirement Discription | Priority |
| FR-001 | User Registration | The system shall allow user to register providing their name,email, and password | High |
| FR-002 | User Login | The system shall allow registered user to log in using their email and password | High |
| FR-003 | Ticket creation | User shall be able to create new tickets by entering a title, description, category and priority | High |
| FR-004 | Ticket Assignment | The System shall automatically assign a ticket to an available agent based on availability | Medium |
| FR005 | Ticket Status update | Agents shall update the status of ticket to open, in process or closed | High |
| FR006 | Ticket Priority update | The system shall allow user or agent to update the priority . | Medium |
| FR007 | View ticket Details | User and agent shall be able to view all the details of the tickets such as status, category and assigned agent | High |
| FR008 | User dashboard | User shall have a dashboard displaying their open and close d tickets | Medium |
| FR009 | Agent Dashboard | Agents shall have a dashboard displaying assigned tickets with filters for status and priority | High |
| FR010 | Ticketing Search | User and agents shall be able to search for tickets using keywords or filters like status and priority | Medium |
| FR011 | Email Notification | The system shall send email notification for tickets updates such as status change or new comments | High |
| FR012 | Auto assign Ticket to agent | The system shall use pre defined rule to assign tickets automatically to agents based on their availability and category | Medium. |
| FR013 | Ticket escalation | Tickets not resolved within the specific time will be austomatically escalleted to higher authority | medium |
| FR014 | Role based access control | The system shall provide role based access control, restricting features for user, agents and admin | Medium |
| FR015 | View Ticket history | User and agents shall view the history of changes made to the tickets , including status and priority | High |
| FR016 | Add attachment to tickets | User and agents shall attach files to tickets for additional context or support | Medium |
| FR017 | View agent performance | Admin shall view performance metrics for agents such as the number of ticket performed | Medium |
| FR018 | Defined Ticket category | Admin shall create and manage ticket categories , such as technical or billing | Low |
| FR019 | Filter Tickets | User and agents shall filter tickets by status , priority or category in their dashboard | Medium |
| FR020 | SLA Configuration | The system shall allow admins to configure service level agreement (SLAs) for ticket resolution | Medium |

Non-Functional Requirement

|  |  |  |
| --- | --- | --- |
| Req ID  | Requirment Name | Requirement Discription |
| NFR001 | System Availability | The system shall maintain an uptime of 99.99% to ensure uninterrupted access to users and agents |
| NFR002 | Performance | The system shall handle up to 1000 concurrent user without degradation in performance. |
| NFR003 | Scalability | The system shall scale horizontally to accommodate up to 10000 users and 50000 tickets per month. |
| NFR004 | Security | The System Shall comply with the industry standard security |
| NFR005 | Data Encryption | All sensitive data , including password and ticket information , shall be encrypted at rest and in transit |
| NFR006 | Response Time | The system shall provide responses to user action , such as Ticket creation with in 2 seconds under normal load. |
| NR007 | Browser Compatibilty  | The System shall suppor all then major browser such as chrome,firefox, edge. |
| NFR008 | Mobile compatibility | The system shall provide a responsive design for seamless operation on mobile devices. |
| NFR009 | Accessibility Compatibility | The system shall adhere to standards to ensure accesability for user with disability. |
| NFR010 | Maintainability | The system shall allow developer to update or extend features with minimal impact on existing functionality. |

**3**. **Make an ERD of Creating a Ticketing life cycle.**



**4. User story of shopping from ecommerce.**

|  |  |  |
| --- | --- | --- |
| User Story :1 | Task:2 | Priority : Highest |
| AS A CUSTOMER,I WANT TO REGISTER TO THE APPLICATION  |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAUser can register or create idEmails and mobile are updated |  |

|  |  |  |
| --- | --- | --- |
| User Story :2 | Task:2 | Priority : Highest |
| AS A CUSTOMER, I WANT TO LOGIN TO THE APPLICATION |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIAUser can sign up , log in , and reset password securelyPasswords are encrypted and two factor authentication is available |  |

|  |  |  |
| --- | --- | --- |
| User Story :3 | Task:3 | Priority : Highest |
| AS A CUSTOMER,I WANT TO BROWSE PRODUCTS BY CATEGORY SO THAT I CAN QUICKLY FIND ITEMS OF INTEREST  |  |
| BV:500 | CP:03 |
| ACCEPTANCE CRITERIACategories are displayed on the home page and product list pageUsers can filter products within a selected category |  |

|  |  |  |
| --- | --- | --- |
| User Story :4 | Task:2 | Priority : Highest |
| AS A CUSTOIMER,I WANT TO SEARCH PRODUCT USING SEARCH BAR SO THAT I CAN FIND SPECIFIC ITEMS QUICKLY |  |
| BV:50 | CP:05 |
| ACCEPTANCE CRITERIAThe Search Bar is visible and functional on the homepageSearch results are displayed with in 2 sec after submission |  |

|  |  |  |
| --- | --- | --- |
| User Story :5 | Task:3 | Priority : Highest |
| AS A CUSTOMER,I WANT TO SHORT PRODUCT BASED ON PRICE OR POPULARITY SO THAT I CAN MAKE AN INFORMED CHOICE.  |  |
| BV:100 | CP:01 |
| ACCEPTANCE CRITERIASorting options are available on the product listing pages Products are shorted correctly based on the selected criteria |  |

|  |  |  |
| --- | --- | --- |
| User Story :6 | Task:2 | Priority : Highest |
| AS A CUSTOMER,I WANT TO ADD PRODUCT TO THE WISHLIST LIST , SO THAT I CAN PURCHASE THEM LATER  |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAUser can add,view and remove items from the wishlistWishlist items persist even after logouts |  |

|  |  |  |
| --- | --- | --- |
| User Story :7 | Task:2 | Priority : Highest |
| AS A CUSTOMER ,I WANT TO SEE DETAILED INFORMATION ABOUT A PRODUCT SO THAT I CAN DECIDE WHETHER TO BUY IT. |  |
| BV:100 | CP:08 |
| ACCEPTANCE CRITERIAThe product page includes images , price , description and reviews“Add to cart” and “Buy Now” buttons are visible and fuctional |  |

|  |  |  |
| --- | --- | --- |
| User Story :8 | Task:1 | Priority : Highest |
| AS A CUSTOMER,I WANT TO ADD PRODUCTS TO MY SHOPPING CART SO THAT I CAN PURCHASE MULTIPLE ITEM AT ONCE  |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAItems are added to the card with correct quantity and pricingUsers can view, update or remove items from the cart |  |

|  |  |  |
| --- | --- | --- |
| User Story :9 | Task:3 | Priority : Highest |
| AS A CUSTOMER, I WANT A SECURE AND EASY CHECKOUT PROCESS SO THAT I CAN COMPLETE MY PURCHASE CONFIDENTLY |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAUser can enter billing and shipping details securelyPayment is processed securely using industry standard |  |

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| User Story :10 | Task:2 | Priority : Highest |
| AS A CUSTOMER I WANT TO CHOOSE MY PREFERRED PAYMENT METHOD SO THAT I CAN COMPLETE MY PURCHASE CONVINIENTLY. |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIAPayment gateway support credit and debit cards,UPI,CODTransactions are processed in 5 seconds |  |

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| User Story :11 | Task:3 | Priority : Highest |
| AS A CUSTOMER,I WANT TO COMPARE PRODUCT SIDE BY SIDE SO THAT I CAN CHOOSE BEST OPTIONS  |  |
| BV:500 | CP:05 |
| ACCEPTANCE CRITERIAUser can select upto three product to compareKey attributes are displayed for easy comparison |  |

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| User Story :12 | Task:1 | Priority : Highest |
| AS A CUSTOMER ,I WANT TO LOOK FOR THE PRODUCT WITHOUT LOGING IN |  |
| BV:10 | CP:01 |
| ACCEPTANCE CRITERIAUser can search the products with out signing in. |  |

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| User Story :13 | Task:2 | Priority : Highest |
| AS A CUSTOMER,I WANT TO TRACK MY ORDER SO THAT I CAN KNOW WHEN WILL THEY ARRIVE  |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAUser can view the status of their order in real timeNotifications are sent for key updates. |  |

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| User Story :14 | Task:2 | Priority : Highest |
| AS A CUSTOMER,TO DISPLAY RELATED PRODUCTS SO THAT I CAN DISCOVER COMPLEMENTRY ITEMS |  |
| BV:100 | CP:05 |
| ACCEPTANCE CRITERIARelated products are displayed dynamically based on user behaviorClicking on a related products redirect to its details page |  |

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| User Story :15 | Task:2 | Priority : Highest |
| AS A CUSTOMER ,I WANT TO FILTER MY SEARCH RESULTS SO THAT I CAN REFINE MY PRODUCTS SEARCH EFFICIENTLY |  |
| BV:50 | CP:02 |
| ACCEPTANCE CRITERIAFilters of price range, brand and rating are available Result update dynamically based on selected filters |  |

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| User Story : 16 | Task:1 | Priority : Highest |
| AS A CUSTOMER,I WANT TO VIEW MY PAST ORDER, SO I CAN REORDER THEM EASILY. |  |
| BV:50 | CP:02 |
| ACCEPTANCE CRITERIAUser can view a list of their completed ordersClicking on an order shows detailed information including items and total cost |  |

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| User Story :17 | Task:1 | Priority : Highest |
| AS A CUSTOMER,I CAN GET REWARD ON MY PURCHASE SO THAT I CAN GET EASILY VALUED  |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIAUser earn points for each purchasesPoints can be redeemed for discounts during checkouts |  |

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| User Story :18 | Task:1 | Priority : Highest |
| AS A CUSTOMER,I WANT TO APPLY PROMO CODES DURING CHECKOUTS SO THAT I CAN SAVE MONEY  |  |
| BV:50 | CP:02 |
| ACCEPTANCE CRITERIAUser can enter promocodes at checkoutsDiscounts are applied correctly, and the updated total is displayed |  |

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| User Story :19 | Task: | Priority : low |
| AS A CUSTOMER ,I WANT TO RECEIVE NOTIFICATION WHEN A PRODUCT IS BACK IN STOCK SO THAT I DON’T MISS OUT |  |
| BV:100 | CP:01 |
| ACCEPTANCE CRITERIAUser can subscribe to back in store alertsNotifications are sent via emails or SMS when the product becomes available |  |

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| User Story : 20 | Task:3 | Priority : Highest |
| AS A CUSTOMER,I WANT TO UPDATE MY PERSONAL INFORMATION SO THAT MY PROFILE IS ACCURATE  |  |
| BV:500 | CP:02 |
| ACCEPTANCE CRITERIAUser can update there name, address and contact detailsChanges are saved and reflected immediately |  |

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| User Story : 21 | Task:1 | Priority : Highest |
| AS A CUSTOMER,I WANT TO SHARE PRODUCTS ON SOCIAL MEDIA SO THAT I CAN RECOMMEND THEM TO OTHERS |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIAShipping cost are calculated dynamically based on the delivey locationThe total cost including shipping is displayed in the cart |  |

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| User Story :22 | Task:2 | Priority : Highest |
| AS A CUSTOMER,I WANT TO REFER MY MY FRIENDS AND EARN REWARD POINTS SO THAT I FEEL INCENTIVIZED TO PROMOTE THE SITE  |  |
| BV:500 | CP:03 |
| ACCEPTANCE CRITERIAUser receives unique referral codesReferral results in discounts or rewards for both parties |  |

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| User Story : 23 | Task:2 | Priority : low |
| AS A CUSTOMER ,I WANT TO READ PRODUCT RELATED GUIDES SO THAT I CAN MAKE INFORMED DECISION |  |
| BV:50 | CP:03 |
| ACCEPTANCE CRITERIABlogs are categorized and accessible from home pageUser can search for specific topics |  |

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| User Story :24 | Task:3 | Priority : Highest |
| AS A CUSTOMER ,I WANT INSTANT HELP THROUGH LIVE CHAT SO THAT I CAN RESOLVE ANY QUERIES QUICKLY |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIALive chat is available from footer or help sectionResponses are sent within 30 seconds of initiating the chat |  |

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| User Story :25 | Task:4 | Priority : Highest |
| AS A ADMIN,I WANT TO MANAGE PRODUCT INVENTORY EFFICIENTLY SO THAT STOCK LEVELS ARE ACCURATE |  |
| BV:100 | CP:02 |
| ACCEPTANCE CRITERIAAdmin can view add update or remove productsLow stock alerts are generated automatically |  |