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.

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.

2. Prepare a brief BRD and SRS for a project- Horoscope or Ticketing system or online store.

3. Make an ERD of creating a support ticket/Ticketing life cycle.

4. User story of shopping from ecommerce.

**Assignment 1:**

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

and resource plan.

Answer: **Business Requirements Document (BRD)**

**Title: Inventory and Delivery Management System for Ice Cream and Milk Products**

**Version: 1.0
Date: March 19, 2025**

**Prepared By: Sneha Jalnapure
Role: Business Analyst**

**Business Requirements Document (BRD)**

**Inventory and Delivery Management System for Ice Cream and Milk Products**

**1. Document Revisions**

|  |  |  |
| --- | --- | --- |
| **Date** | **Version Number** | **Document Changes** |
| 2025-03-20 | 1.0  | Initial draft of the Business Case Document. |
| 2025-03-22 | 1.1  | Updated the "Background and Context" section with additional market insights. |
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| 2025-04-05 | 1.4  | Clarified implementation timeline and added milestones for each phase. |
| 2025-04-10 | 1.5 | Added stakeholder approval section, and revised governance structure. |

**2. Approvals**



**3. RACI Chart for This Document**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Role** | **R (Responsible)** | **A (Accountable)** | **S (Supports)** | **C (Consulted)** | **I (Informed)** |
| **Ankur Agarwal** | Project Sponsor |  | Yes |  |  | Yes |
| **Satya Kadam** | Business Owner |  | Yes |  | Yes | Yes |
| **Udaya K** | Project Manager | Yes | Yes | Yes | Yes |  |
| **Rekha M** | System Architect | Yes |  | Yes | Yes |  |
| **Venkatesh J** | Development Lead | Yes |  | Yes | Yes |  |
| **Nishi Desai** | User Experience Lead | Yes |  | Yes | Yes |  |
| **Esha Jain** | Quality Lead | Yes |  | Yes |  | Yes |
| **Snehal C** | Content Lead | Yes |  | Yes |  | Yes |

**RACI Roles Breakdown:**

* **R (Responsible)**: The individual(s) who perform the work.
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* **I (Informed)**: The individual(s) who are informed of progress or completion.

**4. Introduction**

**4.1 Business Goals**

* **Efficient Inventory Management**: Create a robust system to manage real-time inventory, track product availability, and maintain an accurate record of stock across multiple manufacturing plants and warehouses.
* **Faster Delivery**: Optimize delivery processes to guarantee faster customer deliveries while ensuring product quality and minimizing transportation costs.

**4.2 Business Objectives**

* **Real-time Inventory Tracking**: Provide a system that updates product quantities in real time, ensuring accurate stock levels across all locations.
* **Automated Replenishment**: Trigger automatic reordering when stock levels fall below predefined thresholds.
* **Optimized Delivery Routes**: Use software tools to optimize delivery routes, ensuring faster delivery times and reducing transportation costs.
* **Prioritize Orders**: Implement a priority-based system to process orders faster based on their urgency or special requests.

**4.3 Business Rules**

* **Stock Replenishment**: When inventory reaches a certain low level, automatic notifications will trigger restocking requests to the nearest warehouse or manufacturing plant.
* **Delivery Deadlines**: Orders within 100 miles of the warehouse must be delivered within 48 hours. Orders beyond that distance will be delivered within 72 hours.
* **Shelf Life Management**: Perishable products like ice cream and milk must have their expiration dates monitored in the system, with alerts for products nearing expiration.
* **Order Prioritization**: Orders marked as high priority or express should be processed and shipped first, ahead of regular orders.
* **Warehouse Capacity Management**: The system must prevent overstocking by alerting when warehouse capacity is close to being reached.

**4.4 Background**

The company operates multiple manufacturing plants and warehouses located throughout the country, producing ice cream and milk-based products. Currently, inventory management is mostly manual, leading to inefficiencies, stockouts, and delayed deliveries. The existing system also lacks integration for optimizing delivery processes. This project seeks to replace the legacy system with an automated, real-time solution to improve inventory management and speed up deliveries.

**4.5 Project Objective**

Develop a comprehensive software solution to:

* Efficiently manage inventory across plants and warehouses.
* Optimize delivery routes and prioritize orders for faster delivery times.
* Provide real-time visibility into stock levels, order statuses, and delivery progress.

**4.6 Project Scope**

The scope of the project includes:

* **Inventory Management**: Real-time tracking of stock, automated reorder triggers, and expiration tracking.
* **Delivery Management**: Route optimization, priority handling of orders, and real-time delivery tracking.
* **User Roles**: Different access levels for Admin, Warehouse Staff, and Delivery Staff.
* **Integration**: The new system must integrate with existing order management and ERP systems.

**5. Assumptions**

* All plants and warehouses will have internet access for synchronization of data in real time.
* Delivery staff will have GPS-enabled devices for route optimization.
* The system will be compatible with existing warehouse and delivery infrastructure.
* Adequate training will be provided to all users to ensure effective use of the system.

**6. Constraints**

* **Budget**: The software development must remain within the allocated budget.
* **Timeline**: The system must be completed and operational within 6 months.
* **Data Migration**: All data from legacy systems must be accurately migrated to the new system.
* **Hardware Compatibility**: The software must be compatible with existing hardware and equipment.

**7. Risk Identification and Mitigation Strategies**

**Technological Risks:**

* **Risk**: System integration challenges with legacy software.
	+ **Mitigation**: Conduct thorough testing before integration, use phased implementation for smoother transition.

**Skills Risks:**

* **Risk**: Lack of expertise in new software technologies.
	+ **Mitigation**: Hire external consultants or provide intensive internal training for the team.

**Political Risks:**

* **Risk**: Changes in regulatory compliance for food products or transportation.
	+ **Mitigation**: Regularly review and adapt the software to comply with new laws.

**Business Risks:**

* **Risk**: Delays in product delivery may affect customer satisfaction.
	+ **Mitigation**: Optimize inventory and delivery routes and use predictive analytics to anticipate delays.

**Requirements Risks:**

* **Risk**: Unclear or changing requirements.
	+ **Mitigation**: Regular communication with stakeholders to gather and finalize clear business requirements.

**Other Risks:**

* **Risk**: Data security breaches.
	+ **Mitigation**: Implement advanced encryption, access control, and regular audits.

**8. Business Process Overview**

**8.1 Legacy System (AS-IS)**

* The current system is manually operated, which results in stockouts, overstocking, and delayed deliveries.
* The system lacks automation in inventory management and does not provide real-time data on stock levels or delivery status.
* The delivery process is not optimized, leading to longer delivery times.

**8.2 Proposed Recommendations (TO-BE)**

* **Inventory Management**: Implement automated inventory tracking with real-time stock updates and low-stock alerts.
* **Order Fulfillment**: Prioritize and process orders based on urgency and customer needs.
* **Delivery Optimization**: Use route optimization tools to ensure quicker deliveries with real-time tracking available for customers.
* **User Access Control**: Assign different user roles such as Admin, Warehouse Staff, and Delivery Staff, each with specific access permissions.

**9. Business Requirements**

1. **Inventory Management:**
	* Real-time tracking of products across manufacturing plants and warehouses.
	* Ability to trigger automatic stock replenishment when stock reaches a minimum threshold.
	* Monitoring and alerting of product expiration for perishable goods like ice cream and milk.
	* Ability to generate real-time inventory reports and forecasts.
2. **Delivery Management:**
	* Route optimization to ensure the fastest delivery times.
	* Real-time tracking for deliveries with notifications sent to customers.
	* Order prioritization system based on delivery urgency and quantity.
	* Integration with GPS systems for accurate tracking of delivery progress.
3. **User Roles:**
	* Admins can access all system functions, including inventory management and reporting.
	* Warehouse staff can access inventory and order fulfillment features.
	* Delivery staff can view delivery assignments, update status, and track routes.
4. **System Integrations:**
	* Integration with existing ERP (Enterprise resource planning) and order management systems.
	* Integration with GPS and route optimization tools for delivery management.

**10. Timeline & Milestones**

|  |  |  |
| --- | --- | --- |
| **Phase** | **Duration** | **Milestone** |
| Discovery & Analysis | 2 weeks | Gather all requirements |
| Design & Architecture | 3 weeks | System design and architecture |
| Development | 8 weeks | Core functionality developed |
| Testing & QA | 4 weeks | Final testing and bug fixing |
| Deployment & Go-Live | 2 weeks | System goes live |

**1.9. Resource Plan**

|  |  |  |
| --- | --- | --- |
| **Role** | **No. of Resources** | **Skillsets Needed** |
| **Project Manager** | 1 | Project management, stakeholder management |
| **Business Analyst** | 1 | Requirement gathering, documentation |
| **Development Team** | 3-4 | Full-stack developers (front-end, back-end, databases) |
| **QA Engineer** | 2 | Testing, performance testing, bug tracking |
| **UI/UX Designer** | 1 | Design of user interface and experience |
| **Logistics Expert** | 1 | Expertise in delivery management systems |

This **Business Requirements Document (BRD)** outlines the project goals, objectives, scope, and requirements for the new Inventory and Delivery Management System. The document also addresses key risks, assumptions, constraints, and provides a roadmap for the successful implementation of the software.

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

**Answer**: The process flow diagram illustrates the steps involved in managing inventory and ensuring the quickest delivery to customers. The system connects inventory management, order fulfilment, and delivery management.



**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.**

**Answer:**

Sneha Jalnapure
jalnapuresneha3@gmail.com
91xxxxxxxx
March 19, 2025

John Deol
XYZ Company

Dear John,

I hope this message finds you well. My name is Sneha Jalnapure, and I am the Business Analyst assigned to work with you and your team on the upcoming project. I am excited to collaborate with you as we embark on the journey of understanding your business objectives and refining the requirements for the new Inventory and Delivery Management System for your ice cream and milk products.

As a Business Analyst, my role will involve gathering vital information about your current processes and understanding the unique challenges your company faces. By working closely with you and your team, I aim to ensure that the new system aligns with your operational goals and enhances efficiency in inventory management and delivery.

Throughout this process, I will facilitate discussions, conduct interviews, and analyze data to capture the requirements accurately. I believe that open communication is key to a successful project, and I encourage your team to share their insights and perspectives. Together, we can identify opportunities for improvement and design a solution that meets your needs.

I will be reaching out to schedule an initial meeting within the next few days to discuss the project scope and gather your input. If you have any questions or specific topics you would like to address during our meeting, please feel free to let me know.

I look forward to working with you and your team, and I am confident that together we will create a system that adds significant value to your business.

Thank you, and I look forward to our collaboration!

Best regards,

Sneha Jalnapure
Business Analyst
91xxxxxxxx

**2. Prepare a brief BRD and SRS for a project- Horoscope or Ticketing system or online store.**

**Answer**: **Project Title:**
Ticketing System Development for Event Management

**1. Executive Summary:**

The project involves developing a **Ticketing System** that will allow customers to book tickets for various events (concerts, sports events, theatre shows, etc.). The system will manage ticket sales, facilitate customer interactions, and ensure an efficient ticketing process for event organizers. The platform aims to provide a user-friendly interface for customers, real-time availability of tickets, and administrative functionalities for managing events and sales.

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* **I (Informed)**: The individual(s) who are informed of progress or completion.

**4. Introduction**

**4.1 Business Goals**

* **Efficient Ticket Sales Management**: Create an easy-to-use system for managing ticket sales for events, allowing for a smooth purchase experience for attendees.
* **Seamless Event Check-in**: Develop a streamlined check-in process for attendees using digital tickets, reducing manual work and waiting times at the venue.
* **Real-Time Event Data**: Enable real-time tracking of ticket sales and attendee data, empowering event organizers to make data-driven decisions.

**4.2 Business Objectives**

* **Sell Tickets Online**: Provide a secure platform for users to buy tickets online for various events.
* **Ticket Validation**: Allow for digital ticket validation at the event, minimizing the risk of fraud.
* **Seat Reservation**: Implement seat reservation functionality to manage seating arrangements for certain types of events.
* **Event Analytics**: Provide organizers with real-time reporting tools to track ticket sales, revenues, and attendee statistics.

**4.3 Business Rules**

* **Ticket Availability**: Tickets will be available for sale until the event reaches its maximum capacity.
* **Discounts and Coupons**: Users can apply discount codes or vouchers during ticket purchases.
* **Refunds**: Tickets are refundable under specific conditions (e.g., event cancellation or rescheduling).
* **Payment Methods**: The system must accept multiple payment methods, including credit cards, debit cards, and popular digital wallets.
* **Ticket Categories**: Tickets must be categorized (VIP, General Admission, etc.), and each category may have different pricing and features.

**4.4 Background**

The current system for managing event ticketing is manual and error-prone, leading to issues such as overbooking, fraud, and difficulties with on-site check-in. The company needs a more streamlined, automated approach to handle ticket sales, validation, and attendee management. This new ticketing system will help achieve better customer experiences, provide real-time event data, and ensure efficient operations for event organizers.

**4.5 Project Objective**

Develop a comprehensive ticketing system that:

* Manages ticket sales for events.
* Provides secure payment processing.
* Enables seamless check-in at events.
* Tracks event attendance and generates useful reports for organizers.

**4.6 Project Scope**

The scope of the project includes:

* **Ticket Sales**: Online ticket purchasing, seat reservations (if applicable), and payment processing.
* **Event Check-In**: Scanning digital tickets at the event for quick and secure entry.
* **Reporting**: Real-time reporting on ticket sales, attendance, and financial metrics.
* **User Roles**: Different access levels for administrators, event organizers, and customers.
* **Integration**: The system must integrate with existing event management tools and payment gateways.

**5. Assumptions**

* The system will support all event types, including concerts, conferences, festivals, and sports events.
* The platform will be able to handle a high volume of traffic during peak ticket sale times (e.g., when tickets go live for a popular event).
* Customers will have access to a secure, easy-to-use interface for buying tickets and applying discounts.
* The system will integrate with the company’s existing customer relationship management (CRM) system to track attendee data.
* Adequate training and user manuals will be provided to event organizers and administrators.

**6. Constraints**

* **Budget**: The ticketing system development must stay within the allocated budget for software and infrastructure.
* **Timeline**: The system must be deployed and operational within 4 months to be ready for upcoming events.
* **Data Migration**: Any existing event data, such as previous ticket sales or attendee lists, must be properly imported into the new system.
* **Payment Gateway**: The system must integrate with a third-party payment gateway that supports different payment methods.

**7. Risk Identification and Mitigation Strategies**

**Technological Risks:**

* **Risk**: Integration issues with payment gateways.
	+ **Mitigation**: Conduct extensive testing and work with payment gateway providers early in the process.

**Skills Risks:**

* **Risk**: Lack of expertise in ticketing system technologies.
	+ **Mitigation**: Hire experienced developers and/or consult with ticketing system vendors for guidance.

**Business Risks:**

* **Risk**: Low ticket sales due to system errors or lack of functionality.
	+ **Mitigation**: Ensure robust testing and feature validation, and collect feedback from early users.

**Security Risks:**

* **Risk**: Payment fraud or data breaches.
	+ **Mitigation**: Implement high-level security protocols, including encryption, secure payment gateways, and two-factor authentication.

**Requirements Risks:**

* **Risk**: Requirements not fully defined.
	+ **Mitigation**: Regular stakeholder meetings to ensure requirements are clarified and finalized early in the process.

**8. Business Process Overview**

**8.1 Legacy System (AS-IS)**

* The current ticketing process is manually handled, leading to delays in ticket sales, poor reporting, and high error rates during event check-ins.
* Payments are processed manually, and tickets are sent via email, which increases the chance of fraud.

**8.2 Proposed Recommendations (TO-BE)**

* **Online Ticketing Platform**: Implement an online system for customers to browse, purchase, and reserve tickets for events.
* **Real-Time Event Data**: Provide real-time data on ticket availability, sales trends, and attendee numbers.
* **Seamless Check-In**: Digital ticketing with QR code scanning or mobile app-based check-ins at the event.
* **Discount Management**: Integration of a discount code or promotional offer system during ticket purchase.

**9. Business Requirements**

1. **Ticket Sales Management:**
	* Customers should be able to purchase tickets via a web interface.
	* The system should support various ticket categories (e.g., VIP, General Admission, Early Bird).
	* Tickets should be available for purchase up to the day of the event, depending on event availability.
	* Real-time tracking of ticket sales to avoid overbooking.
2. **Event Check-In:**
	* Digital tickets should be validated using QR codes or barcodes.
	* Quick check-in at the event to minimize customer wait times.
	* Ability for event staff to manually verify tickets if necessary.
3. **Payment Processing:**
	* Support for multiple payment methods: credit/debit cards, mobile wallets (e.g., PayPal, Apple Pay), and bank transfers.
	* Secure payment gateways to prevent fraud.
4. **Discounts and Promotions:**
	* Users should be able to apply discount codes or vouchers during checkout.
	* Event organizers should be able to configure time-limited offers or early bird pricing.
5. **Event Reporting:**
	* Real-time reporting of ticket sales, revenue, and available seats.
	* Event organizers should have access to downloadable reports with data on ticket sales, demographics, and refunds.
6. **User Roles and Access Control:**
	* Admin users should have full access to system configuration and reporting.
	* Event managers should have access to manage events, tickets, and promotions.
	* Customers should have access to browse, purchase, and view tickets.

**10. Project Timeline:**

* **Phase 1:** Requirements Gathering and Analysis – 2 weeks
* **Phase 2:** Design and Development – 6 weeks
* **Phase 3:** Testing and QA – 2 weeks
* **Phase 4:** Deployment and Launch – 1 week

This **Business Requirements Document (BRD)** outlines the project's goals, objectives, scope, and requirements for the development of a Ticketing System for Event Management. The document serves as a guide for developers, stakeholders, and project managers throughout the development cycle, ensuring alignment with business needs and objectives

**System Requirements Specification (SRS) for the Ticketing System**

**1. Introduction:**

The **Ticketing System** will enable customers to easily book tickets for events. The system will include a front-end for customers to browse events and book tickets, as well as an administrative backend for event organizers to manage events and tickets.

**20 Functional Requirements** and **20 Non-Functional Requirements** for a **Ticketing System** that aims to manage events and ticket inventory efficiently:

**Functional Requirements**

|  |  |  |
| --- | --- | --- |
| **Req ID** | **Req Description** | **Priority** |
| **FR1** | **User Registration**: Users must be able to register by providing basic details (name, email, password). | High |
| **FR2** | **User Login**: Users should be able to log in using their email and password. | High |
| **FR3** | **Forgot Password**: Users must be able to recover their password by receiving an email link. | Medium |
| **FR4** | **Event Browsing**: Users should be able to browse events by category, location, and date. | High |
| **FR5** | **Event Details**: The system must display detailed information for each event, including time, location, and available tickets. | High |
| **FR6** | **Search Functionality**: Users must be able to search for events by keywords or filter by date and location. | Medium |
| **FR7** | **Ticket Selection**: Users should be able to select ticket quantities, seating (if applicable), and ticket types (VIP, general, etc.). | High |
| **FR8** | **Real-time Ticket Availability**: The system must show real-time availability and update inventory automatically after each booking. | High |
| **FR9** | **Event Booking**: Users must be able to book tickets for selected events and proceed to checkout. | High |
| **FR10** | **Payment Integration**: The system must allow users to make secure payments using external payment gateways (e.g., PayPal, Stripe). | High |
| **FR11** | **Payment Confirmation**: The system should confirm payment success and display a confirmation page for users. | High |
| **FR12** | **Email Confirmation**: The system must send a booking confirmation email to the user with the event details and ticket information. | High |
| **FR13** | **Ticket Cancellation**: Users should be able to cancel their bookings, and refunds (if applicable) should be processed. | Medium |
| **FR14** | **Admin Dashboard**: Event organizers should have access to a dashboard to manage events, track sales, and monitor ticket inventory. | High |
| **FR15** | **Event Creation**: Admins must be able to create new events, including setting prices, dates, and other event details. | High |
| **FR16** | **Ticket Pricing**: Admins should be able to set different ticket prices for various categories (VIP, regular, etc.). | Medium |
| **FR17** | **Inventory Management**: Admins should be able to monitor and manage the available ticket inventory for each event. | High |
| **FR18** | **Reporting and Analytics**: Admins must be able to generate reports on sales, revenue, and customer behaviour. | Medium |
| **FR19** | **Notifications**: The system should send email or SMS notifications to users and admins for important updates (e.g., booking, cancellation, reminders). | High |
| **FR20** | **User Profile Management**: Users should be able to view and update their personal details and booking history. | Medium |

**Non-Functional Requirements (NFRs)**

|  |  |  |
| --- | --- | --- |
| **Req ID** | **Req Description** | **Priority** |
| **NFR1** | **Performance**: The system should be able to handle at least 10,000 concurrent users during peak times. | High |
| **NFR2** | **Scalability**: The system should be scalable to support a growing number of users and events. | High |
| **NFR3** | **Availability**: The system should maintain 99.9% uptime, ensuring it is available around the clock. | High |
| **NFR4** | **Response Time**: The system should respond to user actions (e.g., loading pages, processing payments) within 3 seconds. | High |
| **NFR5** | **Security**: All user data, including payment information, must be encrypted in transit (SSL) and at rest. | High |
| **NFR6** | **Compliance**: The system must comply with relevant laws and regulations, including PCI-DSS for secure payment processing. | High |
| **NFR7** | **User Experience**: The system should have a user-friendly interface with an intuitive design, ensuring ease of use for customers and admins. | High |
| **NFR8** | **Cross-Platform Compatibility**: The system must be compatible with all major browsers (Chrome, Firefox, Safari) and mobile devices (iOS, Android). | High |
| **NFR9** | **Localization**: The system should support multiple languages and currencies for international users. | Medium |
| **NFR10** | **Backup and Recovery**: The system must implement automatic daily backups and have disaster recovery plans in place. | High |
| **NFR11** | **Load Balancing**: The system should be able to distribute traffic across multiple servers to maintain performance during high demand. | High |
| **NFR12** | **Data Integrity**: The system must ensure that all data stored in the database is accurate and consistent, especially for ticket availability and user details. | High |
| **NFR13** | **Maintainability**: The system should be designed with maintainability in mind, including modular architecture and clear documentation for future upgrades. | Medium |
| **NFR14** | **Audit Trails**: The system must maintain an audit trail of critical actions (e.g., payment transactions, event modifications) for security and compliance purposes. | Medium |
| **NFR15** | **Customization**: The system should allow for custom branding and styling, enabling event organizers to personalize the platform for their events. | Low |
| **NFR16** | **Search Optimization**: The system should provide fast and accurate search results, even with large event databases. | High |
| **NFR17** | **API Availability**: The system should expose RESTful APIs to allow third-party integrations (e.g., with external ticketing platforms, CRM systems). | Medium |
| **NFR18** | **Notification Delivery**: Notifications (email/SMS) should be delivered within 5 minutes of a transaction or booking change. | High |
| **NFR19** | **Usability Testing**: The system should undergo periodic usability testing to identify and resolve pain points in the user journey. | Medium |
| **NFR20** | **Accessibility**: The system must meet WCAG 2.1 accessibility standards, ensuring it is usable by people with disabilities. | High |

* **Functional Requirements** focus on the specific capabilities the system must have to fulfil its intended purpose, such as handling user registration, payment processing, event creation, and ticket booking.
* **Non-Functional Requirements** address the overall system quality, performance, security, scalability, and other aspects that affect the user experience, operational efficiency, and system reliability.

These requirements ensure that the system is robust, scalable, secure, and capable of supporting high volumes of users and transactions, providing a seamless experience for both event organizers and customers.

**Use case specifications for the Ticketing System Development for Event Management:**

Answer: Use Case Specifications: A use case specification is a detailed description of how a system functions for a specific use case.

|  |  |
| --- | --- |
| **Use Case ID** | **1** |
| **Use Case Name** | User Buying Ticket for Event |
| **Brief Description** | This Use Case explains how a customer buys a ticket for an event through the online ticketing platform. |
| **Actors** | 1. Customer 2. Payment Gateway 3. Event Database |
| **Pre-Conditions** | * There should be an active internet connection.
* Customer should have a registered account or guest access.
* Event tickets should be available for sale.
 |
| **Basic Flow** | 1. User logs in or accesses the website. 2. User browses available events. 3. User selects an event. 4. Application displays event details and available ticket categories. 5. User selects a ticket category and quantity. 6. User adds tickets to the cart. 7. User proceeds to the checkout. 8. User enters payment details and selects payment method. 9. Payment is processed via the payment gateway. 10. Once payment is successful, a confirmation page is displayed. 11. The system sends an email with the ticket and a QR code. 12. Use case ends successfully. |
| **Alternate Flow** | **Invalid User**: If user login fails, app displays: "User login unsuccessful, please try again.” The use case ends with a failure condition. **Payment Failure**: If the payment gateway fails, app displays: "Payment could not be processed, please try again." **Sold Out Event**: If the event reaches maximum capacity, the app displays: "Tickets for this event are sold out." |
| **Post Condition** | **Successful Completion**: User successfully buys the event ticket and receives a confirmation email with a QR code. **Failure Condition**: User could not buy the ticket due to payment failure, sold-out event, or technical issues. |
| **Supplemental Requirements** | • Payment transactions must be secure and comply with PCI-DSS standards.• Event information (date, location, ticket availability) must be accurate and up to date. |

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| **Use Case ID** | **2** |
| **Use Case Name** | User Checking In at Event |
| **Brief Description** | This Use Case explains how a customer checks in at the event using their purchased ticket. |
| **Actors** | 1. Customer 2. Event Staff 3. Ticketing System |
| **Pre-Conditions** | • User must have purchased a valid ticket for the event. • Event check-in must be open and available. |
| **Basic Flow** | 1. User arrives at the event venue. 2. User presents the digital ticket (QR code) via mobile or print. 3. Event staff scans the QR code using a mobile app or scanner. 4. Ticket system validates the QR code. 5. If valid, the system confirms the check-in and updates the attendee status. 6. User is allowed entry to the event. 7. Event staff receives an update on the attendee count. 8. Use case ends successfully. |
| **Alternate Flow** | **Invalid Ticket**: If the QR code is invalid, the system displays: "Invalid ticket. Please contact event staff for assistance." **Duplicate Check-In**: If the QR code has already been scanned, the system displays: "Ticket already used for check-in." |
| **Post Condition** | **Successful Completion**: User is successfully checked in and allowed to attend the event. - **Failure Condition**: User cannot enter due to invalid or duplicate ticket. |
| **Supplemental Requirements** | • The check-in process should be fast, with minimal wait time. • System should have real-time synchronization to avoid multiple check-ins for the same ticket. |

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| **Use Case ID** | **3** |
| **Use Case Name** | Admin Managing Event and Tickets |
| **Brief Description** | This Use Case explains how an event organizer or admin manages an event and ticketing information through the admin panel. |
| **Actors** | 1. Admin/Organizer 2. Event Database |
| **Pre-Conditions** | • Admin must be logged in with the correct permissions. • Admin has access to event and ticket management tools. |
| **Basic Flow** | 1. Admin logs into the event management system. 2. Admin selects "Create New Event" or "Manage Existing Event." 3. Admin enters event details: name, date, location, description, and ticket categories. 4. Admin defines ticket prices, quantity, and availability. 5. Admin can set promotional offers or discounts for specific ticket categories. 6. Admin saves the event details. 7. The system updates the event and ticket information in the database. 8. Admin can view real-time ticket sales reports and adjust ticket availability if necessary. 9. Use case ends successfully. |
| **Alternate Flow** | **Missing Information**: If required event information is missing, the system displays: "Please fill in all required fields before submitting the event." **Ticket Limit Exceeded**: If the number of tickets exceeds the event capacity, the system displays: "Ticket quantity exceeds event capacity. Please adjust." |
| **Post Condition** | **Successful Completion**: Admin successfully creates or updates an event with tickets for sale. **Failure Condition**: Admin cannot create or update the event due to missing information or exceeding ticket limit. |
| **Supplemental Requirements** | • Admin should have role-based access controls to ensure proper permissions for event and ticket management. • System should ensure event data integrity and prevent data corruption during updates. |

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| **Use Case ID** | **4** |
| **Use Case Name** | Customer Applying Discount Codes |
| **Brief Description** | This Use Case explains how a customer applies a discount code during the ticket purchase process. |
| **Actors** | 1. Customer 2. Discount Code System 3. Payment Gateway |
| **Pre-Conditions** | • Customer is logged in or browsing the ticketing website. • A valid discount code is available for the event. |
| **Basic Flow** | 1. User browses available events and selects tickets. 2. At checkout, user enters a valid discount code in the "Coupon" section. 3. System validates the discount code. 4. The discount is applied to the total cost of tickets. 5. User proceeds to payment, with the new discounted total shown. 6. User completes payment. 7. Confirmation page displays the final amount and discount applied. 8. The system sends an email with the ticket and updated payment details. 9. Use case ends successfully. |
| **Alternate Flow** | **Invalid Discount Code**: If the code is invalid or expired, the system displays: "Invalid or expired discount code." **Code Exceeds Limit**: If the discount exceeds the total ticket cost, the system displays: "Discount code exceeds total cost, please check your code." |
| **Post Condition** | **Successful Completion**: User successfully purchases the ticket with the applied discount. **Failure Condition**: User cannot apply the discount code or complete the purchase due to invalid code or technical issues. |
| **Supplemental Requirements** | • Discount codes should have expiration dates and usage limits. • The discount system should support multiple types of discounts (percentage, fixed amount). |

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| **Use Case ID** | **5** |
| **Use Case Name** | User Viewing Event Information |
| **Brief Description** | This Use Case explains how a customer views detailed information about an event before purchasing tickets. |
| **Actors** | 1. Customer 2. Event Database |
| **Pre-Conditions** | • Customer is browsing the ticketing website or app. • Events must be listed on the platform. |
| **Basic Flow** | 1. User visits the event page or browses the event catalog. 2. User selects an event to view more details. 3. The system displays event information, including event description, date, time, location, and available ticket categories. 4. User reviews the information and chooses ticket quantity or category. 5. User proceeds to checkout or adds tickets to the cart. 6. Use case ends successfully. |
| **Alternate Flow** | **Event Not Found**: If the event is not available, the system displays: "No event found, please try again later." |
| **Post Condition** | **Successful Completion**: User successfully views event details and proceeds to ticket purchase. **Failure Condition**: User cannot view event details due to technical issues or unavailable event. |
| **Supplemental Requirements** | • Event details should be accurate and up to date. • The system should support high-quality images and videos for event descriptions. |

**Use Case Diagram:**



**Activity Diagram:**



**3. Make an ERD of creating a support ticket/Ticketing life cycle.**

**Answer:**



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

**Answer:**

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| User Story No: 1  | Tasks: 2 | Priority: Highest |
| As a CustomerI want to browse products on the websiteSo that I can find items I want to purchase. |
| BV: 450 | CP: 01 |
| ACCEPTANCE CRITERIA:User can filter products by categories (e.g., electronics, clothing). Products display price, description, and images.A search bar is available to find specific products. |

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| User Story No: 2 | Tasks: 2 | Priority: Highest |
| As a CustomerI want to add products to my cartSo that I can purchase multiple items in one checkout. |
| **BV:** 400 | **CP:** 02 |
| ACCEPTANCE CRITERIA:User can add items to the cart. The cart shows product names, prices, quantities, and total cost. Option to update or remove items from the cart. |

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| User Story No: 3 | Tasks: 2 | Priority: Highest |
| **As a** Customer**I want to** view my cart**So that I can** review the items before checking out |
| BV: 500 | CP: 02 |
| ACCEPTANCE CRITERIA:The cart displays item details like names, prices, and quantities.Users can modify quantities or remove items.Option to proceed to checkout or continue shopping |

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| User Story No: 4 | Tasks: 2 | Priority: Highest |
| **As a** Customer**I want to** securely check out**So that I can** pay for my order and complete the transaction. |
| BV: 500 | CP: 03 |
| ACCEPTANCE CRITERIA:Secure checkout process with options for shipping address and payment methods.Order confirmation page displayed after completing the checkout.Order summary shows details of items purchased. |

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| User Story No: 5 | Tasks: 1 | Priority: Highest |
| **As a** Customer**I want to** apply discount codes during checkout**So that I can** receive discounts on my purchases. |
| BV: 500 | CP: 02 |
| ACCEPTANCE CRITERIA:A field to enter discount codes is visible during checkout.The system validates and applies the discount.The total cost updates with the applied discount. |

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| User Story No: 6 | Tasks: 1 | Priority: Low |
| **As a** Customer**I want to** select a preferred payment method**So that I can** pay using the payment option I prefer. |
| BV: 50 | CP: 01 |
| ACCEPTANCE CRITERIA:Multiple payment methods (credit card, PayPal, etc.) are available.Secure payment gateway for transaction processing.Payment confirmation is sent to the customer after successful payment  |

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| User Story No: 7 | Tasks: 2 | Priority: Low |
| **As a** Customer**I want to** receive email notifications for order confirmation**So that I can** stay informed about my order status. |
| BV: 50 | CP: 01 |
| ACCEPTANCE CRITERIA:An email is sent after order confirmation.The email contains the order number, item details, and estimated delivery date. |

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| User Story No: 8 | Tasks: 2 | Priority: Medium |
| **As a** Customer**I want to** track the delivery status of my order**So that I can** know when to expect my order. |
| BV: 100 | CP: 02 |
| ACCEPTANCE CRITERIA:A tracking number is provided after dispatch.Delivery status can be tracked via a tracking link or page. |

User Stories:

● As a user, I want to view ratings and reviews for restaurants on Scrum Foods so that I can make

informed decisions.

● As a user, I want to provide ratings and reviews to share my experiences and contribute to the

community.

Acceptance Criteria:

1. Users can view average ratings and detailed reviews on a restaurant's details page.

2. Users can sort and filter reviews by rating or relevance.

3. Users can submit, edit, or delete their reviews within a specific timeframe.

4. Reviews are presented to offer useful insights to others.

5. The system ensures the authenticity of feedback.

2. Real-Time Order Tracking Epic

Description:

Provide users with a seamless experience by allowing them to track their food orders in real-time, enhancing

transparency, satisfaction, and engagement.

User Stories:

● As a customer, I want to view the live status of my order.

● As a customer, I want to track the delivery partner’s real-time location on a map.

● As a customer, I want to receive notifications for significant order updates.

● As a customer, I want to contact the delivery partner through the app.

● As a customer, I want to view the delivery route and estimated delivery time.

● As an admin, I want to monitor order tracking performance to identify improvements.

Acceptance Criteria:

1. Real-Time Updates:

○ Status updates such as "Order received," "Preparing," and "Out for delivery" are displayed in

real-time.

2. Location Tracking:

○ A live map shows the delivery driver’s location and route, updated at regular intervals.

3. Delivery Notifications:

○ Users receive notifications for key events like dispatch and arrival.

4. Privacy and Security:

○ Data privacy regulations are adhered to, ensuring secure handling of location data.

5. Compatibility and Usability:

○ The feature works seamlessly on all platforms (iOS, Android, and web) and supports multiple

orders.

6. Opt-Out Option:

○ Users can disable real-time tracking if desired.

7. Feedback Integration:

○ Users can rate the delivery experience and provide written feedback after the order is

completed.

By delivering these epics, the product ensures improved user engagement, satisfaction, and a seamless

experience, driving the overall success of the app

Question 3– What is epic? Write 2 epics – 5 Marks

Business Value and Complexity Points

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| User Story No: 9 | Tasks: 2 | Priority: High |
| **As a** Customer**I want to** leave a review for a product**So that I can** share my opinion with other shoppers. |
| BV: 200 | CP: 03 |
| ACCEPTANCE CRITERIA:A star rating system (1 to 5 stars) is provided for products.A text field for additional comments is available.Reviews are displayed on product pages. |

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| User Story No: 10 | Tasks: 3 | Priority: High |
| **As an** Admin**I want to** manage product listings**So that I can** add, remove, or update products in the catalog. |
| BV: 200 | CP: 03 |
| ACCEPTANCE CRITERIA:Admin can add new products, update prices, and product details.Admin can remove products that are out of stock or discontinued.Admin can upload product images. |

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| User Story No: 11 | Tasks: 2 | Priority: Medium |
| **As an** Admin**I want to** view sales reports**So that I can** monitor sales performance and trends. |
| BV: 100 | CP: 03 |
| ACCEPTANCE CRITERIA:Admin can generate reports for specific time periods (daily, weekly, monthly).Reports include product performance, revenue, and customer data. |

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| User Story No: 12 | Tasks: 2 | Priority: High |
| **As an** Admin**I want to** moderate product reviews**So that I can** ensure reviews are appropriate and maintain quality standards. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Admin can approve, reject, or flag inappropriate reviews.Admin can filter reviews by product or customer. |

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| User Story No: 13 | Tasks: 2 | Priority: High |
| **As an** Admin**I want to** manage inventory levels**So that I can** keep track of stock and avoid stockouts. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Admin can view real-time stock levels for products.Admin is notified when stock levels are low.Admin can manually update stock levels after new inventory is received. |

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| User Story No: 14 | Tasks: 2 | Priority: High |
| **As an** Admin**I want to** manage customer accounts**So that I can** assist with customer issues or suspend accounts when necessary. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Admin can view and edit customer account details.Admin can suspend or deactivate accounts. |

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| User Story No: 15 | Tasks: 1 | Priority: High |
| **As an** Admin**I want to** create promotional campaigns**So that I can** drive sales and attract more customers. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Admin can create discount codes or special promotions.Promotions can be applied to relevant products or categories. |

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| User Story No: 16 | Tasks: 1 | Priority: High |
| **As a** Customer**I want to** receive personalized product recommendations**So that I can** discover products I might like. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Personalized recommendations based on browsing or purchase history.Recommended products are displayed on the homepage or product pages |

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| User Story No: 17 | Tasks: 2 | Priority: High |
| **As a** Delivery Boy**I want to** register in the system**So that I can** receive orders and begin deliveries |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Registration form for delivery details.Map and routing options provided to optimize delivery time. |

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| User Story No: 18 | Tasks: 1 | Priority: High |
| **As a** Delivery Boy**I want to** view my delivery assignments**So that I can** know which orders to deliver and where. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:A dashboard showing a list of assigned deliveries.Option to mark orders as "out for delivery" and "delivered." |

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| User Story No: 19 | Tasks: 1 | Priority: High |
| **As a** Delivery Boy**I want to** update order status in real-time**So that I can** keep customers and admins informed about delivery progress. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Delivery status updated in real-time.Notifications sent to customers and admin regarding order status (e.g., out for delivery, delivered). |

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| User Story No: 20 | Tasks: 1 | Priority: High |
| **As a** Customer**I want to** compare products before making a purchase**So that I can** make a more informed decision. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:A product comparison tool is available.Comparison includes features, price, ratings, and other relevant details. |

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| User Story No: 21 | Tasks: 3 | Priority: High |
| **As a Customer**, I want to add products to my Wishlist, so that I can save items for future purchases. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can add products to a wishlist.Wishlist can be accessed and edited from the account page. |

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| User Story No: 22 | Tasks: 1 | Priority: Medium |
| **As a Customer**,  I want to share product details with friends, so that I can recommend items I like. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can share product links via email or social media.The shared link directs to the product page. |

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| User Story No: 23 | Tasks: 2 | Priority: High |
| **As a Customer**,I want to set a default delivery address, so that my shipping details are pre-filled during checkout. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can save and set a default delivery address in their account settings. |

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| User Story No: 24 | Tasks: 2 | Priority: High |
| **As a Customer**, I want to update my billing information, so that my payment details are accurate for future purchases. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can edit their billing address and payment methods in account settings.Changes are saved for future transactions. |

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| User Story No: 25 | Tasks: 1 | Priority: Medium |
| **As a Customer**, I want to request a return for items, so that I can return products I no longer wan |
| BV: 100 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can initiate a return request from their order history.A return shipping label and instructions are provided. |

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| User Story No: 26 | Tasks: 7 | Priority: High |
| **As a Customer**, I want to receive a refund for returned products, so that I can get my money back. |
| BV: 200 | CP: 03 |
| ACCEPTANCE CRITERIA:Refunds are processed according to the return policy.Customers receive a confirmation email after the refund is issued |

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| User Story No: 27 | Tasks: 5 | Priority: High |
| **As a Customer**, I want to apply a gift card during checkout, so that I can use it to pay for my order. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can enter and apply a gift card code at checkout.The order total updates to reflect the gift card balance |

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| User Story No: 28 | Tasks: 5 | Priority: Medium |
| **As a Customer**, I want to filter products by brand, so that I can browse items from my preferred brands. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:A filter option is available to show products from selected brands.Filter results display only products from the chosen brand. |

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| User Story No: 29 | Tasks: 5 | Priority: Medium |
| **As a Customer**, I want to view the estimated delivery date of my order, so that I know when to expect my items. |
| BV: 200 | CP: 03 |
| ACCEPTANCE CRITERIA:Estimated delivery date is displayed during checkout.The date is updated based on the shipping method and address. |

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| User Story No: 30 | Tasks: 5 | Priority: Medium |
| **As a Customer**, I want to subscribe to the newsletter, so that I can receive updates on sales and promotions |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:A subscription form is available on the website.Users can opt-in to receive marketing emails with updates |

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| User Story No: 31 | Tasks: 5 | Priority: High |
| **As a Customer**, I want to view my past orders, so that I can track my previous purchases and reorder items. |
| BV: 100 | CP: 03 |
| ACCEPTANCE CRITERIA:Users can access a list of past orders in their account.Each order includes item details, prices, and order status. |

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| User Story No: 32 | Tasks: 3 | Priority: High |
| **As a Customer**, I want to apply multiple discount codes, so that I can maximize my savings. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:The system allows applying multiple valid discount codes at checkout.The total price updates accordingly. |

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| User Story No: 33 | Tasks: 6 | Priority: High |
| **As a Customer**, I want to use cryptocurrency as a payment method, so that I can pay using digital currencies. |
| BV: 200 | CP: 04 |
| ACCEPTANCE CRITERIA:A cryptocurrency payment option is available at checkout.Payment is processed securely with cryptocurrency wallets. |

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| User Story No: 34 | Tasks: 2 | Priority: High |
| **As a Customer**, I want to filter products by customer ratings, so that I can prioritize highly-rated items. |
| BV: 200 | CP: 03 |
| ACCEPTANCE CRITERIA:Products can be filtered based on user ratings (e.g., 4 stars or above).The filtered results show only products with the selected rating. |

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| User Story No: 35 | Tasks: 2 | Priority: Low  |
| **As a Customer**, I want to receive push notifications for sales and discounts, so that I don't miss out on promotions. |
| BV: 50 | CP: 01 |
| ACCEPTANCE CRITERIA:Customers can opt-in to receive notifications for sales and discounts.Notifications appear on the mobile device or browser. |

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| User Story No: 36 | Tasks: 2 | Priority: Medium |
| **As a Customer**, I want to check product availability before adding it to my cart, so that I know if the item is in stock. |
| BV: 100 | CP: 02 |
| ACCEPTANCE CRITERIA:The product page displays whether the item is in stock or out of stock.Users are notified when an item is low in stock or back in stock. |

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| User Story No: 37 | Tasks: 3 | Priority: High |
| **As a Customer**, I want to set an alert for when a product is back in stock, so that I can be notified when it's available. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Users can set an alert for out-of-stock products.Notifications are sent when the product is back in stock. |

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| User Story No: 38 | Tasks: 1 | Priority: Medium |
| **As a Customer**, I want to view personalized deals, so that I can see discounts on items I’m interested in. |
| BV: 200 | CP: 02 |
| ACCEPTANCE CRITERIA:Personalized discounts and deals are shown based on browsing and purchase history.Deals are clearly highlighted on the homepage or product pages. |

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| User Story No: 39 | Tasks: 4 | Priority: Medium |
| **As a Customer**, I want to add a note for gift orders, so that I can include a personal message with my gift. |
| BV: 100 | CP: 03 |
| ACCEPTANCE CRITERIA:A text box is provided for entering a gift note at checkout.The note is included with the package. |

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| User Story No: 40 | Tasks: 4 | Priority: High |
| **As a Customer**, I want to save my search filters, so that I can use them for future searches. |
| BV: 100 | CP: 03 |
| ACCEPTANCE CRITERIA:Users can save their search filters for future use.Saved filters are applied automatically when the user searches again |