**Mocks – 4**

**Questions:**

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.**

**Business Requirement Document (BRD)**

**Project Name:** Inventory Management and Quick Delivery Software for Ice Cream and Milk Product Manufacturing Company.

**Project ID:** INV001

**Document Version: 1.0**

**Date:** 16/01/2025

**1. Executive Summary**

The purpose of this project is to develop a comprehensive software solution to effectively manage inventory and ensure prompt delivery of ice cream and milk products. The software will enhance operational efficiency by integrating real-time inventory tracking and delivery route optimization across manufacturing plants and warehouses, leading to improved customer satisfaction and reduced wastage.

**2. Business Objectives**

* Efficiently manage inventory across multiple locations, including manufacturing plants and warehouses.
* Minimize delays and optimize delivery schedules to meet customer expectations.
* Reduce wastage of perishable goods through improved inventory and expiry tracking.
* Provide stakeholders with real-time visibility and insights into inventory and logistics operations.
* Enhance overall operational efficiency and reduce associated costs.

**3. Scope of the Project**

**3.1 In-Scope**

* **Inventory Management:**
  + Centralized real-time tracking of stock levels.
  + Configurable stock level alerts and notifications for replenishment.
  + Automated reordering system based on predefined thresholds.
  + Batch and expiry tracking for perishable goods.
* **Delivery Optimization:**
  + Dynamic route optimization using real-time traffic data.
  + Real-time tracking of delivery vehicles.
  + Integration with customer order systems for seamless order updates.
  + Analytics on delivery performance and turnaround times.
* **Reporting and Analytics:**
  + Detailed inventory performance and usage reports.
  + Delivery time analysis and optimization recommendations.
  + Predictive analytics for demand forecasting based on historical data.

**3.2 Out-of-Scope**

* Integration with external e-commerce platforms.
* Development of a consumer-facing mobile application (may be considered for future enhancements).

**Approvals:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Signature** | **Date** |
| Project Sponsor | Ramesh Kumar | Director of Operations | Signed | 21/08/2024 |
| Business Owner | Anjali Sharma | HR Head | Signed | 22/08/2024 |
| Project Manager | Arjun Singh | Senior Project Manager | Signed | 22/08/2024 |
| System Architect | Priya Iyer | Lead System Architect | Signed | 23/08/2024 |
| Development Lead | Rajesh Gupta | Development Team Lead | Signed | 24/08/2024 |
| UX/UI Lead | Sneha Nair | UX/UI Designer | Signed | 24/08/2024 |
| Quality Lead | Vikram Reddy | QA Manager | Signed | 25/08/2024 |
| Content Lead | Meera Menon | Content Strategist | Signed | 25/08/2024 |

**RACI Chart:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Position** | **R** | **A** | **S** | **C** | **I** |
| **Ramesh Kumar** | Project Sponsor |  | ✓ |  |  | ✓ |
| **Anjali Sharma** | Business Owner |  | ✓ |  | ✓ |  |
| **Arjun Singh** | Project Manager | ✓ | ✓ | ✓ |  | ✓ |
| **Priya Iyer** | System Architect | ✓ | ✓ |  |  |  |
| **Rajesh Gupta** | Development Lead | ✓ |  |  | ✓ |  |
| **Sneha Nair** | User Experience Lead |  |  | ✓ | ✓ |  |
| **Vikram Reddy** | Quality Lead |  |  | ✓ | ✓ |  |
| **Meera Menon** | Content Lead |  |  | ✓ | ✓ |  |
| **Rahul Verma** | Client Representative |  |  | ✓ | ✓ |  |

* **R (Responsible):** The person(s) responsible for performing the task.
* **A (Accountable):** The person who is ultimately accountable for the task’s completion.
* **S (Supportive):** People who provide support and resources to complete the task.
* **C (Consulted):** People who are consulted and whose opinions are sought.
* **I (Informed):** People who are kept informed about the task but are not directly involved.

**Business Goals:**

**Efficient Inventory Management:**

* **Objective:** To maintain real-time tracking and management of inventory levels across all manufacturing plants and warehouses.
* **Key Goals:**
  + Optimize stock levels to prevent overstocking or stockouts.
  + Enable automated reordering of products based on predefined thresholds.
  + Ensure accurate and up-to-date inventory data across multiple locations.
  + Streamline the management of perishable items, such as ice-cream and milk products, to minimize wastage.
  + Provide detailed reporting on inventory status, product movement, and warehouse utilization.

**Quickest Delivery to Customers:**

* **Objective:** To reduce delivery time and ensure timely and efficient distribution of products to customers.
* **Key Goals:**
  + Implement a route optimization system to ensure the fastest and most cost-effective delivery routes.
  + Enable real-time tracking and updates for both customers and delivery teams.
  + Ensure that the nearest warehouse or plant is always prioritized for deliveries to customers, reducing delivery time.
  + Improve communication and coordination between warehouses, plants, and delivery teams.

**Modules:**

**Inventory Management Module**

* + Real-time inventory tracking.
  + Stock level management and alerts for replenishment.
  + Batch tracking for perishable items (ice-cream and milk products).
  + Integration with barcode/QR code systems.
  + Expiry date and shelf-life monitoring.
  + Transfer management between warehouses and plants.
  + Reporting and analytics for inventory performance.

**2. Order Management Module**

* + Order processing and status tracking.
  + Automated order allocation to the nearest warehouse or plant.
  + Order cancellation, modification, and returns management.
  + Customer notifications for order confirmation and delivery updates.
  + Integration with customer-facing systems (e.g., website or mobile app).

**3. Delivery Management Module**

* + Route optimization for quickest deliveries.
  + Delivery scheduling and prioritization.
  + Integration with GPS for real-time delivery tracking.
  + Proof of delivery (e-signatures, images).
  + Delivery fleet management and assignment.

**4. Warehouse Management Module**

* + Warehouse space optimization.
  + Product categorization and storage location tracking.
  + Inbound and outbound logistics management.
  + Quality checks for incoming and outgoing products.

**5. Customer Management Module**

* + Customer database and profile management.
  + Order history and preferences tracking.
  + Feedback and complaints management.
  + Loyalty programs and discounts.

**6. Reporting and Analytics Module**

* + Inventory turnover reports.
  + Delivery time analysis and performance metrics.
  + Sales reports and demand forecasting.
  + Wastage and loss tracking reports.
  + Real-time dashboards for key metrics.

**7. User Management and Role-Based Access Control Module**

* + Role-based access for different user types (e.g., admins, warehouse staff, delivery teams).
  + User activity logs and audit trails.
  + Secure authentication mechanisms.

**8. Integration and API Module**

* + APIs for integration with external systems (e.g., e-commerce platforms, CRM tools).
  + Payment gateway integration (if needed for direct sales).
  + Integration with IoT devices like temperature sensors in warehouses.

**9. Notification and Alerts Module**

* + Stock alerts for replenishment and expiry warnings.
  + Delivery reminders and updates for customers and staff.
  + Notifications for system errors or delays.

**Assumptions:**

**Inventory Details**

* The company already has a database of all inventory items categorized by product type, location, and current stock levels.
* Existing barcode or QR code labels are available for inventory tracking.

**Manufacturing and Warehousing**

* Manufacturing plants and warehouses are equipped with IoT-enabled devices for temperature and humidity monitoring, where required.
* Stock is periodically updated and synchronized across all warehouses.

**Delivery System**

* The company has an established logistics network with in-house and third-party delivery partners.
* Delivery vehicles are GPS-enabled for real-time location tracking.

**Software Integration**

* The company uses basic ERP or other software systems that can be integrated with the new solution.
* APIs or interfaces for data exchange between the new software and existing systems are available.

**User Roles and Permissions**

* Employees in relevant roles (inventory managers, logistics coordinators, etc.) have basic technical skills for operating the software.
* The system will have multi-level user access with permissions based on roles.

**Customer Interaction**

* Customers can place orders via a website or mobile app linked to the software.
* Most customers have access to smartphones for order tracking and notifications.

**Regulatory Compliance**

* The software will adhere to local regulations for food safety, data protection, and delivery protocols.
* Taxation rules and requirements are well-documented and will be provided for implementation.

**Scalability**

* The software is designed to accommodate a 50% growth in inventory and customer base over the next five years.
* New warehouse or manufacturing locations can be added seamlessly.

**Technology**

* Reliable and high-speed internet is available at all locations to ensure uninterrupted system functionality.
* Cloud-based infrastructure is assumed for flexibility and scalability.

**Training and Support**

* The company will provide training sessions for employees to understand and operate the new system.
* A dedicated support team will be available to address system issues post-deployment.

**Budget Constraints:**

* The project must be completed within the allocated budget.
* Any additional features or upgrades may require separate approvals.

**Timeline Constraints**

* The software development and deployment must be completed within a specified timeframe to align with business operations.
* Testing and training need to be completed before the start of the next peak season.

**Resource Availability**

* Limited availability of key stakeholders for requirement gathering and validation.
* The development team has a predefined capacity and cannot exceed a certain workload.

**Technological Constraints**

* The software must be compatible with existing hardware and infrastructure, such as IoT devices, barcode scanners, and GPS systems.
* Legacy systems may limit integration capabilities or require additional middleware.

**Regulatory Compliance**

* The solution must comply with government regulations for food safety, data privacy, and taxation.
* Constraints may arise from regional variations in regulations across the country.

**Data Accuracy**

* The software's effectiveness depends on the accuracy of existing inventory and logistics data, which may require initial cleanup and validation.

**Geographic Spread**

* The company's operations are spread across various parts of the country, which may lead to challenges in real-time synchronization and network reliability.

**Delivery Constraints**

* Delivery routes and times are subject to external factors such as weather conditions, traffic, and vehicle availability.
* Cold chain logistics for ice cream and milk products require strict temperature control during transportation.

**Training and Adoption**

* The system must be user-friendly as employees may have varying levels of technical proficiency.
* Resistance to adopting new technology may cause delays in implementation.

**Scalability**

* The software must handle current operations while allowing for future expansion, which may be constrained by initial design decisions.

**Security Constraints**

* Data security measures must not overly complicate the user experience while ensuring compliance with industry standards.

**Third-party Dependencies**

* Reliance on third-party delivery services or logistics providers may limit the system's end-to-end control over operations.

**Performance Requirements**

* The system must deliver real-time updates, but processing speed could be constrained by network bandwidth and server capacity.

**Risks:**

**Operational Risks**

1. **Inventory Inaccuracy**
   * Existing discrepancies in inventory data could lead to errors in the system, resulting in overstocking or stockouts.
2. **Supply Chain Disruption**
   * Delays in the supply chain due to natural disasters, strikes, or transportation issues may affect delivery schedules.
3. **Cold Chain Failures**
   * The failure to maintain the required temperature during storage or transportation may result in product spoilage.
4. **Resistance to Change**
   * Employees may be resistant to adopting the new system, causing delays in implementation and inefficiencies in operations.
5. **Inconsistent Internet Connectivity**
   * Remote warehouses and plants may face connectivity issues, affecting real-time data updates.

**Technical Risks**

1. **Integration Challenges**
   * Difficulties in integrating the new software with existing systems, such as IoT devices, barcode scanners, or ERP platforms.
2. **Performance Issues**
   * High transaction volumes may lead to system slowdowns or crashes, especially during peak seasons.
3. **Data Migration Risks**
   * Errors during data migration from legacy systems could result in loss or corruption of critical data.
4. **Cybersecurity Threats**
   * Potential risks of data breaches or hacking, leading to loss of sensitive business information.
5. **Scalability Limitations**
   * The system may fail to handle future growth in operations if not designed for scalability.

**Financial Risks**

1. **Budget Overruns**
   * Unforeseen complexities in software development could lead to exceeding the allocated budget.
2. **Loss of Revenue**
   * Delayed implementation or system downtime may result in missed sales opportunities.

**Compliance Risks**

1. **Regulatory Non-Compliance**
   * Failure to comply with regional food safety, taxation, or data privacy regulations could result in fines or penalties.
2. **Environmental Impact Regulations**
   * Cold chain operations may need to meet specific environmental standards, such as reduced carbon emissions.

**Functional Requirement:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| FR001 | Real-Time Inventory Tracking | Track real-time inventory across all manufacturing plants and warehouses. | High |
| FR002 | Inventory Management Operations | Allow users to add, update, and delete inventory items. | High |
| FR003 | Inventory Replenishment Alerts | Generate alerts for inventory replenishment based on pre-set thresholds. | High |
| FR004 | Batch Tracking and Expiry Management | Enable batch tracking, including expiry dates for products. | High |
| FR005 | Inventory Categorization | Categorize inventory by type, location, and status. | High |
| FR006 | Inventory Dashboard | Provide a dashboard showing inventory levels, trends, and alerts. | High |
| FR007 | Barcode/QR Code Integration | Integrate with barcode/QR code scanners for inventory tracking. | Medium |
| FR008 | Stock Transfer Workflow | Enable stock transfers between locations, including approval workflows. | Medium |
| FR009 | Stock Movement and Analysis Reports | Generate reports for stock movement, utilization, and wastage analysis. | Medium |
| FR010 | GPS Integration for Route Optimization | Integrate with GPS systems for delivery route optimization. | High |
| FR011 | IoT-Based Temperature Monitoring | Integrate with IoT sensors for warehouse temperature monitoring. | Medium |
| FR012 | Critical Inventory Notifications | Notify users about low stock or other critical alerts via email/SMS. | High |
| FR013 | Automated Replenishment Ordering | Support automated order placement for replenishment when stocks are low. | High |
| FR014 | Online Order Placement | Allow customers to place orders online. | High |
| FR015 | Real-Time Order Tracking | Enable customers to track their orders in real-time. | High |
| FR016 | Payment Gateway Integration | Integrate with external payment gateways for customer orders. | Medium |
| FR017 | Multi-Tier User Roles and Permissions | Support multi-tier user roles with specific access permissions. | High |
| FR018 | Comprehensive Audit Logging | Maintain a comprehensive audit log for all inventory transactions. | High |
| FR019 | Product Bundling for Orders | Enable product bundling for order placement (e.g., ice cream combos). | Medium |
| FR020 | Delivery Packing and Scheduling | Optimize packing and scheduling for delivery based on order priorities. | High |
| FR021 | Delivery Time Estimation | Estimate delivery times for customer orders based on location. | High |
| FR022 | Third-Party Logistics Integration | Support integration with third-party logistics providers. | Medium |
| FR023 | Automated Invoice Generation | Generate automated invoices for customer orders. | High |
| FR024 | Dynamic Delivery Cost Calculation | Calculate and display delivery costs dynamically. | Medium |
| FR025 | Configurable Tax Settings | Support configurable tax settings for billing and invoicing. | Medium |
| FR026 | Customer Delivery Scheduling | Allow customers to schedule deliveries based on their preferences. | Medium |
| FR027 | Multi-Location Order Fulfillment | Support multi-location warehouse search for order fulfillment. | High |
| FR028 | Customer Order History and Statuses | Display order history and statuses for customers. | High |
| FR029 | Post-Order Inventory Synchronization | Provide real-time inventory updates post order placement. | High |
| FR030 | ERP Financial Data Synchronization | Synchronize financial data with existing ERP systems. | Medium |
| FR031 | Predictive Analytics for Sales and Inventory | Provide predictive analytics for sales and inventory trends. | Medium |
| FR032 | Damaged and Expired Stock Tracking | Track and display damaged or expired stock. | Medium |
| FR033 | Bulk Inventory Data Upload | Allow bulk upload of inventory data via CSV/Excel files. | Low |
| FR034 | Custom Reporting | Allow custom reporting based on user-defined parameters. | Medium |
| FR035 | Role-Specific Dashboards | Provide role-specific dashboards for operational staff and managers. | Medium |
| FR036 | High-Demand Product Restocking | Prioritize high-demand products in inventory restocking. | Medium |
| FR037 | E-Commerce Platform Integration | Support API integrations with e-commerce platforms. | Medium |
| FR038 | Warehouse Capacity Utilization Tracking | Track and display warehouse capacity utilization in real-time. | Medium |
| FR039 | Bulk Order Dynamic Pricing | Enable dynamic pricing for bulk orders. | Medium |
| FR040 | Analytics Tool Integration via APIs | Provide API-based integrations with analytics tools (e.g., Power BI). | Medium |

**Non – Functional Requirement:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| NFR001 | Concurrent User Handling | Handle 1,000 concurrent users at peak load. | High |
| NFR002 | Critical Operation Response Time | Provide a response time of under 2 seconds for all critical operations. | High |
| NFR003 | High Uptime Assurance | Ensure 99.9% uptime for critical functionalities. | High |
| NFR004 | Scalability for Warehouse Expansion | Support scaling to 2x the current number of warehouses. | High |
| NFR005 | Data Encryption and Security | Encrypt all sensitive data in transit and at rest. | High |
| NFR006 | Compliance with Food Safety Standards | Comply with food safety standards and regulations. | High |
| NFR007 | Multilingual Interface Support | Provide a multilingual interface supporting English and Hindi. | Medium |
| NFR008 | Legacy System Integration | Ensure seamless integration with legacy systems. | High |
| NFR009 | Real-Time Data Updates | Provide real-time data updates with a latency of less than 1 second. | Medium |
| NFR010 | Cross-Platform Support | Support mobile and desktop platforms. | High |
| NFR011 | Role-Specific UI Customization | Provide role-specific customizations for user interfaces. | High |
| NFR012 | Frequent Data Backup | Back up all data every 30 minutes. | High |
| NFR013 | Rapid Data Recovery | Ensure recovery from data loss within 1 hour. | High |
| NFR014 | RESTful API Support | Provide RESTful APIs for third-party integrations. | High |
| NFR015 | IoT Protocol Integration | Support IoT protocols for sensor data exchange. | Medium |
| NFR016 | Cloud-Based Architecture | Use a cloud-based architecture for flexibility and scalability. | High |
| NFR017 | Intuitive User Experience | Ensure a seamless user experience with an intuitive UI design. | High |
| NFR018 | Quick Software Updates | Complete software updates within 2 hours of deployment. | Medium |
| NFR019 | Rapid Report Generation | Generate reports within 10 seconds of a user request. | Medium |
| NFR020 | Historical Data Archiving | Archive historical data for at least 5 years. | Medium |
| NFR021 | Limited Maintenance Downtime | Limit downtime during maintenance to 1 hour per month. | High |
| NFR022 | Multi-Factor Authentication | Support multi-factor authentication for all user roles. | High |
| NFR023 | Third-Party Logistics Integration | Integrate seamlessly with third-party logistics tools. | Medium |
| NFR024 | Role-Based Customizable Reports | Ensure that reports are customizable based on user roles. | Medium |
| NFR025 | Secure Payment Gateway Integration | Use secure payment gateways with PCI compliance. | Medium |
| NFR026 | Concurrent Delivery Support | Support concurrent deliveries across 100 locations. | High |
| NFR027 | Regular Scalability Testing | Perform scalability testing every quarter. | Medium |
| NFR028 | ISO 27001 Compliance | Adhere to ISO 27001 for data security. | High |
| NFR029 | Multi-Format Data Export | Support data exports in multiple formats (e.g., CSV, Excel, PDF). | Medium |
| NFR030 | Low Power Consumption for IoT Devices | Minimize power consumption for IoT integrations. | Low |
| NFR031 | Load Balancing for High Availability | Ensure load balancing for high availability. | High |
| NFR032 | API-Based Real-Time Order Updates | Allow real-time order status updates via APIs. | High |
| NFR033 | Optimized Database Query Execution | Ensure database query execution time under 3 seconds. | Medium |
| NFR034 | Multiple Delivery Prioritization Strategies | Support multiple delivery prioritization strategies. | Medium |
| NFR035 | Automated Zero-Downtime Deployment | Allow automated deployment of new features with zero downtime. | Medium |
| NFR036 | Secure Sandbox for Testing | Maintain a secure sandbox environment for testing new modules. | Medium |
| NFR037 | Automated SLA Monitoring | Provide automated SLA monitoring for logistics integrations. | Medium |
| NFR038 | GDPR and Privacy Law Compliance | Adhere to GDPR and local privacy laws. | High |
| NFR039 | High-Resolution UI Elements | Provide high-resolution UI elements for seamless cross-device usage. | Medium |
| NFR040 | Immutable Transaction Logs | Ensure transaction logs are immutable for auditing. | High |

**AS-IS (Current State)**

1. **Inventory Management**

* Inventory is managed manually using spreadsheets, leading to errors and delays in stock updates.
* No real-time alerts for low stock or replenishment needs.
* Categorization of products is inconsistent, making it difficult for customers to browse effectively.

1. **Order Management**

* Orders are processed manually, increasing the chances of errors and delays in order fulfillment.
* Limited integration with payment gateways, resulting in frequent transaction failures or delays.
* Customers lack real-time order status updates, causing dissatisfaction.

1. **Delivery Management**

* Basic tracking for deliveries with no route optimization, leading to delayed shipments.
* Delivery personnel are not equipped with tools for efficient task management.
* Proof of delivery is handled manually, increasing risks of disputes.

1. **Customer Engagement**

* No personalization in product recommendations.
* Customer support is reactive, handled via emails or phone calls without a centralized system.
* No loyalty programs or special offers are in place to retain customers.

1. **Reporting and Analytics**

* Sales and inventory data are not analyzed effectively, resulting in missed opportunities for optimization.
* Reports are generated manually, consuming time and reducing accuracy.

1. **System Performance**

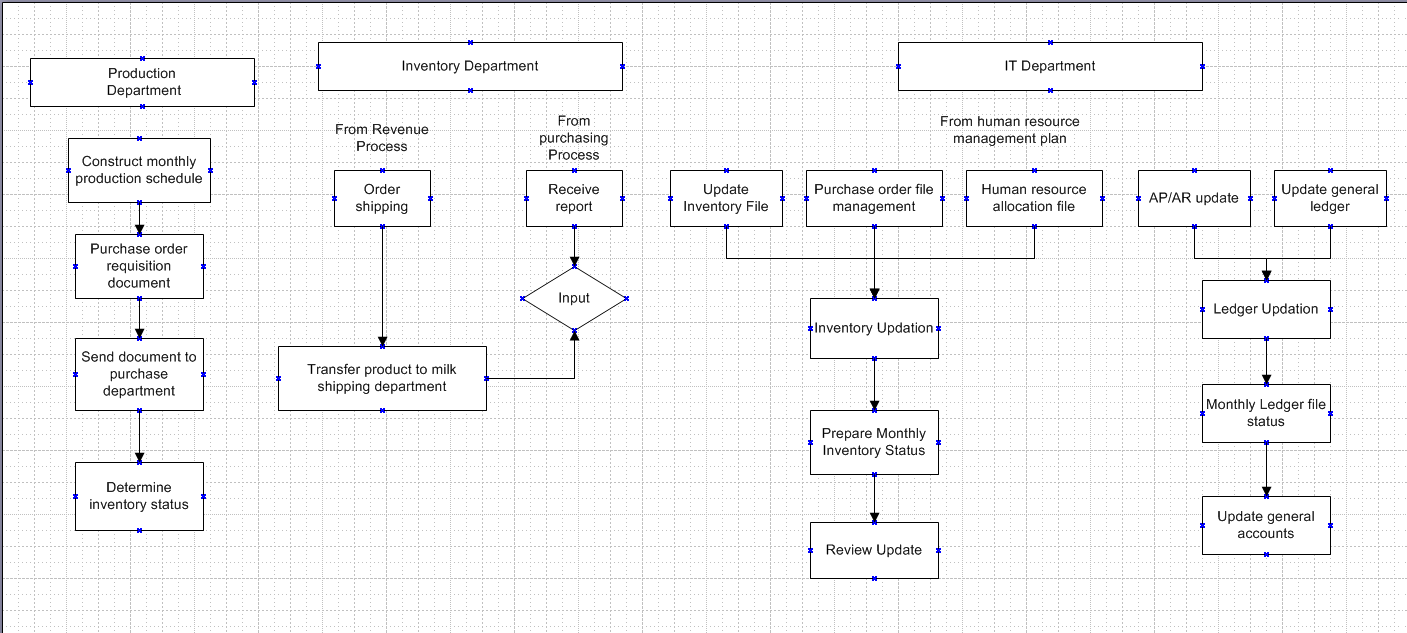
* The platform experiences frequent downtime during high traffic, leading to lost sales.
* Slow response times frustrate users and lead to higher cart abandonment rates.

1. **User Interface**

* The website design is outdated and not responsive, providing a subpar user experience on mobile devices.
* Navigation is complex, making it difficult for users to find desired products quickly.

**Process Flow Diagram:**



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**TO-BE (Desired State)**

1. **Inventory Management**
   * Implement a real-time inventory tracking system with automated alerts for low stock and replenishment needs.
   * Streamlined product categorization with advanced filtering and search capabilities to enhance customer browsing.
   * Enable dynamic pricing based on demand, stock levels, and seasonal trends.
2. **Order Management**

* Automated order processing with status updates for customers at every stage (order placed, shipped, delivered).
* Seamless integration with multiple secure payment gateways for fast and reliable transactions.
* Streamlined return and refund processes with clear communication to customers.

1. **Delivery Management**

* Real-time delivery tracking with dynamic route optimization for faster shipments.
* Equip delivery personnel with mobile tools for task management and proof of delivery (e.g., e-signatures).
* Automated notifications for customers regarding shipment status and estimated delivery time.

1. **Customer Engagement**

* AI-driven personalization to offer tailored product recommendations and promotions.
* Centralized customer support system with live chat, email, and ticketing options for query resolution.
* Introduction of loyalty programs, exclusive discounts, and festive offers to enhance customer retention.

1. **Reporting and Analytics**

* Interactive dashboards providing insights into sales performance, customer behavior, and inventory turnover.
* Predictive analytics for demand forecasting and trend identification to optimize stock and sales.
* Automated report generation for operational metrics and decision-making support.

1. **System Performance**

* Ensure 99.9% uptime with scalable infrastructure to handle high traffic during peak times.
* Optimize system response time to under 3 seconds for all user interactions.
* Implement robust security measures, including data encryption and fraud detection, to protect sensitive customer data.

**Resource Planning:**

**1. Budget Breakdown**

|  |  |  |
| --- | --- | --- |
| **Category** | **Estimated Cost (₹)** | **Percentage of Budget** |
| Software Development | 35,00,000 | 35% |
| Infrastructure (Hardware/Cloud) | 15,00,000 | 15% |
| Testing & Quality Assurance | 10,00,000 | 10% |
| UX/UI Design | 8,00,000 | 8% |
| Project Management | 7,00,000 | 7% |
| Training & Change Management | 5,00,000 | 5% |
| Miscellaneous (Documentation, etc.) | 5,00,000 | 5% |
| Contingency Reserve | 15,00,000 | 15% |
| **Total** | **1,00,00,000** | **100%** |

**2. Team Allocation**

|  |  |
| --- | --- |
| **Role** | **No. of Resources** |
| **Project Manager** | 1 |
| **System Architect** | 1 |
| **Backend Developers** | 3 |
| **Frontend Developers** | 2 |
| **UX/UI Designers** | 2 |
| **Business Analyst** | 2 |
| **QA Engineers** | 2 |
| **DevOps Engineer** | 1 |
| **Trainers (Post-Implementation)** | 2 |
| **Content Specialist** | 1 |
| **Client Support Team** | 2 |
| **Total** | 19 |

**3. Timeline Allocation**

|  |  |  |
| --- | --- | --- |
| **Phase** | **Duration (Months)** | **Key Activities** |
| **1. Requirement Gathering & Analysis** | 2 | Stakeholder meetings, BRD preparation, approvals. |
| **2. System Design** | 2 | Architecture design, wireframes, and prototypes. |
| **3. Development** | 6 | Backend and frontend development, integrations. |
| **4. Testing & QA** | 2 | System testing, UAT, bug fixes, and refinements. |
| **5. Deployment** | 1 | Final deployment, go-live preparations. |
| **6. Post-Implementation Support** | 1 | Training, troubleshooting, and handover. |

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

**1.Registration:**



**2.Login:**



**3.Add a Product (Branch & Merge Condition):**

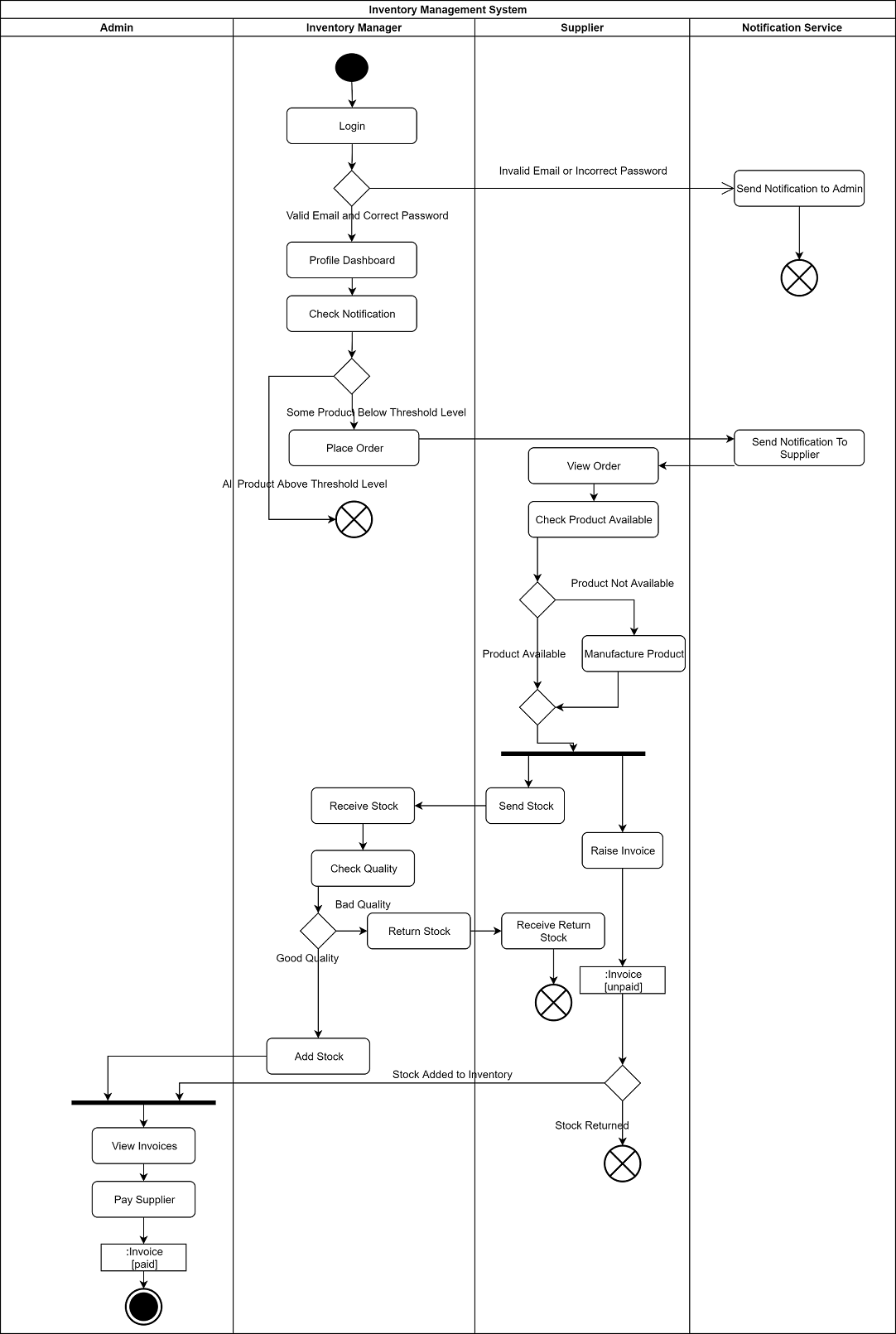


**4. Payment Gateway (Branch & Merge):**



**5. Delivery Tracking (Fork & Join):**



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**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:**

**Subject:** Introduction as Your Business Analyst

**Dear Rajesh,**

I hope this message finds you well. Myself Rakshana R, and I am thrilled to introduce myself as the Business Analyst assigned to collaborate with you and your team on the development of a comprehensive software solution. This project aims to address your key business objectives: efficient inventory management and ensuring the quickest delivery of your ice-cream and milk products to customers across the country. With a strong focus on delivering tailored and actionable solutions, I am committed to guiding the initial phases of understanding your business requirements and aligning them with the project’s goals.

**About My Role: As your Business Analyst, my primary responsibilities include:**

* **Understanding Your Business Needs:** Collaborating closely with stakeholders to identify and analyze challenges related to inventory management and delivery operations.
* **Requirements Documentation:** Gathering and documenting detailed requirements for the proposed software solution, ensuring alignment with your business objectives.
* **Solution Alignment:** Working with development teams to design a solution that optimizes inventory processes and delivery logistics.
* **Facilitating Communication:** Acting as the central point of contact between your team and our development team to ensure transparency and smooth progress throughout the project.

**Key Benefits of the Project:**

1. **Enhanced Inventory Management:** The solution will provide real-time tracking of raw materials and finished goods, helping reduce wastage and ensure availability.
2. **Optimized Delivery Operations:** By leveraging advanced algorithms, the software will optimize delivery routes to ensure quicker and cost-effective service to customers.
3. **Improved Decision-Making:** With integrated analytics and reporting features, your team will gain valuable insights into operational performance.

**Next Steps: To initiate this exciting journey, I propose scheduling an initial meeting where we can:**

1. Discuss your specific challenges and pain points in detail.
2. Identify key stakeholders and define their roles in the project.
3. Outline a preliminary timeline, deliverables, and success criteria for the software solution.
4. Address any questions or concerns to ensure we are aligned on project expectations.

Please let me know a convenient time for this meeting. I am flexible and can adapt to your schedule to make the discussion as productive as possible.

**Contact Information:** Should you have any questions or require immediate assistance, please do not hesitate to reach out to me directly at rakshana@abccompany.com or +91 90000 00000.

I am genuinely excited about the opportunity to collaborate with you and your team to create a solution that streamlines your operations and enhances customer satisfaction. Thank you for entrusting us with this important project. Together, I am confident we will achieve outstanding results.

**Warm regards,**

**Rakshana R  
Business Analyst  
90000 00000**

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

**BRD Template:**

**Online Store:**

**Project Name:** Online Store Management and Optimization Software

**Project ID:** OS001

**Document Version:** 1.0

**Date:** 23/01/2025

**1. Executive Summary**

The goal of this project is to develop an online store management software to streamline operations, enhance customer experience, and optimize the e-commerce workflow. This software will enable real-time inventory tracking, efficient order processing, and personalized customer interactions, ensuring seamless online shopping experiences and improved operational efficiency.

**2. Business Objectives**

* + Efficiently manage online inventory, including stock levels, pricing, and product availability.
  + Ensure quick and accurate order processing and delivery.
  + Provide customers with a user-friendly interface for browsing, purchasing, and tracking orders.
  + Integrate analytics to track sales, customer preferences, and operational efficiency.
  + Enhance customer satisfaction and retention through personalized experiences and reliable services.

**3. Scope of the Project**

**3.1 In-Scope**

**Inventory Management:**

• Real-time stock tracking with automated alerts for replenishment.

• Product categorization and detailed descriptions for easy navigation.

• Dynamic pricing adjustments based on demand and stock levels.

**Order Management:**

* + Order placement, processing, and status tracking.
  + Integration with payment gateways for secure transactions.
  + Return and refund management.

**Delivery Optimization:**

* + Real-time delivery tracking for customers and admins.
  + Dynamic route optimization for delivery efficiency.
  + Notifications for delivery updates.

**Customer Engagement:**

* + Personalized product recommendations based on browsing history.
  + Customer support integration for queries and complaints.
  + Loyalty programs and special offers.

**Reporting and Analytics:**

* + Sales performance reports.
  + Customer behavior analytics.
  + Inventory turnover and replenishment insights.

**3.2 Out-of-Scope**

* + Offline retail store integration.
  + Integration with third-party marketplaces (e.g., Amazon, eBay).

**Approvals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Signature** | **Date** |
| Project Sponsor | Anil Kapoor | E-commerce Director | Signed | 20/01/2025 |
| Business Owner | Priya Menon | Operations Head | Signed | 21/01/2025 |
| Project Manager | Rahul Sharma | Senior Project Manager | Signed | 21/01/2025 |
| System Architect | Sneha Iyer | Lead System Architect | Signed | 22/01/2025 |
| Development Lead | Karan Mehta | Development Team Lead | Signed | 22/01/2025 |
| UX/UI Lead | Megha Nair | UX/UI Designer | Signed | 23/01/2025 |
| Quality Lead | Aditya Rao | QA Manager | Signed | 23/01/2025 |

**Business Goals**

Efficient Online Store Management:

**Objective:** To simplify and optimize the management of the online store’s operations.

**Key Goals:**

* + Ensure real-time inventory updates for accurate stock levels.
  + Automate reordering and replenishment processes.
  + Provide detailed insights into product performance and sales trends.
  + Enable easy management of product listings and categories.

**Enhanced Customer Experience:**

**Objective:** To provide a seamless, user-friendly online shopping platform.

**Key Goals:**

* + Ensure fast and secure payment processing.
  + Provide real-time updates on order status and delivery.
  + Personalize customer recommendations to improve sales.
  + Offer responsive customer support for resolving queries promptly.

**Modules**

**Inventory Management Module**

* + Real-time inventory tracking and updates.
  + Product categorization and search optimization.
  + Alerts for low stock levels.
  + Integration with barcode scanning systems.

**Order Management Module**

* + Order placement and status tracking.
  + Integration with payment gateways.
  + Management of returns, cancellations, and refunds.
  + Notifications for order confirmation and shipping.

**Delivery Management Module**

* + Route optimization for timely deliveries.
  + Real-time delivery tracking for customers.
  + Fleet and delivery assignment management.
  + Proof of delivery (e.g., e-signatures).

**Customer Engagement Module**

* + Personalized product recommendations.
  + Loyalty program management.
  + Customer feedback and complaint resolution.

**Reporting and Analytics Module**

* + Real-time sales dashboards.
  + Inventory and stock performance reports.
  + Customer behavior analytics.
  + Predictive analytics for demand forecasting.

**User Management and Role-Based Access Control Module**

* + Role-specific permissions and access control.
  + Audit trails and user activity logs.
  + Secure login and authentication mechanisms.

**Notification and Alerts Module**

* + Order and delivery status updates.
  + Stock replenishment and expiration alerts.
  + Promotional notifications for customers.

**RACI Matrix:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Position** | **R** | **A** | **S** | **C** | **I** |
| Ramesh Kumar | Project Sponsor |  | ✓ |  | ✓ |  |
| Anjali Sharma | Business Owner | ✓ |  | ✓ |  |  |
| Arjun Singh | Project Manager | ✓ | ✓ | ✓ |  | ✓ |
| Priya Iyer | System Architect | ✓ | ✓ |  |  |  |
| Rajesh Gupta | Development Lead | ✓ |  |  | ✓ |  |
| Sneha Nair | User Experience Lead |  | ✓ |  | ✓ |  |
| Vikram Reddy | Quality Lead |  | ✓ |  | ✓ |  |
| Meera Menon | Content Lead |  | ✓ |  | ✓ |  |
| Rahul Verma | Client Representative |  | ✓ |  | ✓ |  |

**Functional Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| FR001 | User Registration and Profile Management | Allow users to register, log in, and manage their profiles. | High |
| FR002 | Product Browsing and Filtering | Enable users to browse products by categories and search filters. | High |
| FR003 | Cart Management | Allow users to add, update, or remove items from their cart. | High |
| FR004 | Guest Checkout | Support guest checkout for faster transactions. | High |
| FR005 | Secure Payment Integration | Enable secure payment options with multiple gateways. | High |
| FR006 | Real-Time Stock Updates | Provide real-time stock availability updates. | High |
| FR007 | Promotional Code Application | Allow customers to apply promotional codes during checkout. | Medium |
| FR008 | Order Confirmation Notifications | Generate and send order confirmations via email/SMS. | High |
| FR009 | Real-Time Order Tracking | Allow users to track their orders in real-time. | High |
| FR010 | Customer Product Reviews and Ratings | Support product reviews and ratings by customers. | Medium |
| FR011 | Wishlist Management | Enable wishlist creation for future purchases. | Medium |
| FR012 | Automated Product Recommendations | Provide automated recommendations based on user behavior. | High |
| FR013 | Third-Party Logistics Integration | Allow integration with third-party logistics for delivery. | Medium |
| FR014 | Return and Refund Management | Provide a return/refund management system. | High |
| FR015 | Gift Wrapping Option | Allow customers to request gift wrapping for their orders. | Low |
| FR016 | Multilingual Product Descriptions | Support multilingual product descriptions. | Medium |
| FR017 | Live Chat Support | Enable live chat support for customer queries. | Medium |
| FR018 | Admin Product Management | Allow admin users to add, edit, or delete products. | High |
| FR019 | Sales and Inventory Reporting | Provide reporting tools for sales analytics and inventory. | High |
| FR020 | Product Sorting | Allow product sorting by price, rating, and popularity. | Medium |
| FR021 | Location-Based Product Availability | Enable location-based product availability checks. | High |
| FR022 | Recurring Order Subscriptions | Support recurring order subscriptions for specific products. | Medium |
| FR023 | Dynamic Pricing | Allow dynamic pricing based on demand and supply. | Medium |
| FR024 | Product Comparison | Provide product comparisons for customers. | Medium |
| FR025 | Sustainability-Based Product Filtering | Allow filtering products based on sustainability (e.g., eco-friendly). | Low |
| FR026 | CRM Integration | Integrate with external CRM systems for customer management. | Medium |
| FR027 | Order History and Reorder | Provide order history and reorder functionality. | High |
| FR028 | Bulk Order Placement | Support bulk order placements for B2B customers. | Medium |
| FR029 | Custom Gift Messages | Allow custom messages for gift deliveries. | Low |
| FR030 | Multiple Shipping Address Management | Enable users to save multiple shipping addresses. | Medium |
| FR031 | Product Availability Alerts | Provide a product availability alert system. | Medium |
| FR032 | Barcode Scanning for Warehouse Management | Enable barcode scanning for warehouse management. | Medium |
| FR033 | Multiple Payment Methods Support | Support multiple payment methods, including wallets and BNPL. | High |
| FR034 | Scheduled Deliveries | Allow scheduled deliveries based on customer preferences. | Medium |
| FR035 | Loyalty Points System | Enable loyalty point accumulation and redemption. | Medium |
| FR036 | Social Media Login | Provide a secure login option using social media accounts. | Low |
| FR037 | Delivery Status Notifications | Track delivery statuses and notify customers of updates. | High |
| FR038 | Out-of-Stock Suggestions | Allow customers to leave suggestions for out-of-stock items. | Low |
| FR039 | Product Tagging | Enable product tagging for better search visibility. | Medium |
| FR040 | Admin Dashboard for Performance Monitoring | Provide admin dashboards for monitoring website performance. | High |

**Non-Functional Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| NFR001 | Key User Action Response Time | Ensure a response time of under 2 seconds for key user actions. | High |
| NFR002 | System Uptime Guarantee | Provide 99.9% system uptime, excluding scheduled maintenance. | High |
| NFR003 | Concurrent User Performance | Support 1,000 concurrent users with no performance degradation. | High |
| NFR004 | Data Encryption | Encrypt sensitive data at rest and during transmission. | High |
| NFR005 | PCI DSS Compliance | Ensure compliance with PCI DSS for payment security. | High |
| NFR006 | Scalable Architecture | Provide a scalable architecture to handle peak traffic. | High |
| NFR007 | Cross-Platform Usability | Enable seamless cross-platform usage (desktop and mobile). | High |
| NFR008 | GDPR and Privacy Law Compliance | Adhere to GDPR and other local privacy laws. | High |
| NFR009 | Data Backup Frequency | Back up all system data every 15 minutes. | Medium |
| NFR010 | Data Restoration Timeframe | Restore data within 30 minutes of a failure. | High |
| NFR011 | Multilingual User Interface | Ensure a multilingual interface for global users. | Medium |
| NFR012 | Zero Downtime Updates | Allow updates with zero downtime through CI/CD pipelines. | Medium |
| NFR013 | Real-Time Server Monitoring | Provide real-time monitoring of server health and performance. | High |
| NFR014 | Fast Sales Report Generation | Generate sales reports within 10 seconds. | Medium |
| NFR015 | User Session Expiry | Allow user sessions to expire after 15 minutes of inactivity. | High |
| NFR016 | API Integration Compatibility | Ensure integration compatibility with third-party APIs. | High |
| NFR017 | Audit Log Storage Duration | Store logs for at least 6 months for auditing purposes. | Medium |
| NFR018 | Intuitive and Accessible UI/UX | Maintain an intuitive and accessible UI/UX design. | High |
| NFR019 | Role-Based Access Control | Support role-based access control for secure admin operations. | High |
| NFR020 | Regular Scalability Testing | Ensure scalability testing every six months. | Medium |
| NFR021 | Role-Specific Performance Dashboards | Provide role-specific performance dashboards. | Medium |
| NFR022 | Customer Account Archiving | Archive inactive customer accounts after one year. | Medium |
| NFR023 | Eco-Friendly Server Operations | Minimize server-side energy consumption for eco-friendliness. | Low |
| NFR024 | WCAG 2.1 UI Compliance | Ensure all UI components are WCAG 2.1 compliant. | Medium |
| NFR025 | Multi-Format Report Export | Allow exports of financial reports in multiple formats. | Medium |
| NFR026 | Delivery Simulation Support | Support delivery simulations for logistics planning. | Medium |
| NFR027 | API Usage Monitoring and Throttling | Monitor API usage and throttle requests beyond set limits. | High |
| NFR028 | ISO 27001 Compliance | Adhere to ISO 27001 standards for security management. | High |
| NFR029 | Disaster Recovery Support | Provide disaster recovery support for critical failures. | High |
| NFR030 | Quarterly Browser Compatibility Testing | Test the platform on all major browsers quarterly. | Medium |
| NFR031 | Dynamic Scaling for Peak Traffic | Allow dynamic scaling for holiday sales peaks. | Medium |
| NFR032 | Page Load Time Optimization | Minimize page load times to under 3 seconds for all pages. | High |
| NFR033 | Fast Payment Processing | Ensure all payments are processed within 5 seconds. | High |
| NFR034 | SLA Compliance Automation | Automate SLA compliance tracking for third-party integrations. | Medium |
| NFR035 | Content Delivery Network Usage | Use a Content Delivery Network (CDN) to distribute static assets. | Medium |
| NFR036 | Immutable Transaction Logging | Ensure transactions are logged immutably for compliance. | High |
| NFR037 | Localization for Currencies and Taxes | Provide localization support for currencies and taxes. | Medium |
| NFR038 | Automatic Failover for High Availability | Enable automatic failover for high availability. | High |
| NFR039 | Pre-Event Load Testing | Perform load testing before major promotional events. | High |
| NFR040 | Admin Two-Factor Authentication | Secure admin operations with two-factor authentication. | High |

**Assumptions:**

1. Resource Availability: All key team members (e.g., developers, designers, content creators) are available as required for the project.
2. Technology Stack: The project will use the agreed-upon technology stack and third-party tools without any major changes during implementation.
3. Business Requirements: Business requirements will remain stable throughout the project and will be well defined at the beginning.
4. Stakeholder Engagement: Stakeholders will be actively engaged and provide timely feedback.
5. Budget Allocation: The project will have a consistent budget allocation throughout its lifecycle with no unexpected financial constraints.
6. Testing Environment: A suitable testing environment will be provided for the quality assurance process, and all necessary data will be available for testing.

**Constraints:**

1. Time Limit: The project must be completed within a fixed timeline, which may limit the ability to incorporate additional features or modifications during development.
2. Budget: There is a predefined budget for the project, limiting the flexibility for extra expenses or features.
3. Compliance Regulations: The online store must comply with all local laws and regulations (e.g., data protection, privacy laws, etc.), which might affect design and functionality.
4. Integration with Third-party Services: The availability and reliability of third-party services (payment gateways, shipping services) could constrain the project.
5. Technology Compatibility: The store needs to be compatible with different devices, browsers, and operating systems, which may create challenges in the development process.
6. Skill Limitations: The project might face challenges due to the current skill levels of some team members or the availability of subject matter experts.

**Risks:**

1. Requirement Changes: Any significant changes in the business requirements during the project lifecycle could cause delays and require additional resources.
2. Scope Creep: Uncontrolled expansion of scope or adding features beyond the original requirements could affect deadlines and budget.
3. Technology Failures: Technical issues or failure of any chosen software or tools could cause delays in development and deployment.
4. Integration Issues: Difficulty in integrating the online store with external systems such as payment gateways, inventory systems, or CRM platforms could disrupt the project flow.
5. Team Dependency: Over-dependence on key individuals for specific tasks could cause delays if they are unavailable or leave the project unexpectedly.
6. Quality Assurance Failures: Insufficient testing or overlooking critical bugs could result in poor user experience or issues after the launch, affecting brand reputation.
7. Client Stakeholder Delays: Delays in receiving feedback or approvals from client representatives or other stakeholders may result in project timeline setbacks.
8. Cybersecurity Threats: The online store may be vulnerable to security threats like data breaches or cyberattacks, affecting the project's success and user trust.

**Resource Planning:**

**1. Human Resources:**

* **Project Manager (PM)**: Essential to oversee the entire project, ensure adherence to timelines, and manage the team.
  + **Salary Estimate**: ₹10-15 Lakhs per annum
* **Business Analysts (BA)**: 2 to 3 BAs to gather requirements and document business processes, supporting project execution.
  + **Salary Estimate**: ₹8-12 Lakhs per annum per person
* **System Architect**: To design the overall system architecture and ensure scalability.
  + **Salary Estimate**: ₹12-18 Lakhs per annum
* **Development Team**: Front-end and back-end developers, including 1 or 2 senior developers and 2-3 junior developers.
  + **Salary Estimate**: ₹10-20 Lakhs per annum per senior developer and ₹6-10 Lakhs per junior developer
* **UX/UI Designers**: For creating an intuitive and user-friendly experience, including 1-2 designers.
  + **Salary Estimate**: ₹8-12 Lakhs per annum per designer
* **Quality Assurance (QA)**: 2-3 testers for performing quality checks and ensuring bug-free releases.
  + **Salary Estimate**: ₹5-8 Lakhs per annum per QA specialist
* **Content Team**: Writers, SEO specialists, and content strategists for maintaining the online store's content.
  + **Salary Estimate**: ₹6-8 Lakhs per annum per person
* **Support Staff**: For administrative tasks, customer support, etc.
  + **Salary Estimate**: ₹3-5 Lakhs per annum per person

**2. Technology Costs:**

* **Software Licenses/Tools**: MS Office, project management tools (e.g., Jira), design tools (e.g., Figma, Adobe), and development environments.
  + **Estimated Cost**: ₹10-20 Lakhs for the entire duration
* **Server and Hosting Costs**: Cloud storage, servers for staging/production environments.
  + **Estimated Cost**: ₹10-15 Lakhs for 18 months
* **Security Tools/Firewalls**: To ensure secure transactions and data protection.
  + **Estimated Cost**: ₹5-10 Lakhs

**3. Training and Development:**

* **Training for Staff**: In case new tools or technologies are introduced, some funds will be allocated for training the team.
  + **Estimated Cost**: ₹2-5 Lakhs

**4. Miscellaneous Expenses:**

* **Contingency Fund**: For unforeseen expenses, last-minute changes, or additional resources required during the project.
  + **Estimated Cost**: ₹10-15 Lakhs
* **Travel and Miscellaneous Costs**: For any team meetings, conferences, or customer-related travel.
  + **Estimated Cost**: ₹5-8 Lakhs

**Estimated Breakdown:**

|  |  |
| --- | --- |
| **Resource/Expense** | **Estimated Cost Range (₹)** |
| Project Manager Salary | 10-15 Lakhs |
| Business Analysts (2-3) | 16-36 Lakhs |
| System Architect Salary | 12-18 Lakhs |
| Development Team (5-6) | 50-80 Lakhs |
| UX/UI Designers (1-2) | 8-24 Lakhs |
| Quality Assurance Team (2-3) | 10-24 Lakhs |
| Content Team (2-3) | 12-24 Lakhs |
| Support Staff | 6-10 Lakhs |
| Software/Tools/License | 10-20 Lakhs |
| Server/Hosting | 10-15 Lakhs |
| Security Tools/Firewalls | 5-10 Lakhs |
| Training & Development | 2-5 Lakhs |
| Miscellaneous/Contingency | 15-20 Lakhs |
| **Total Estimated Budget** | **₹2 Crores** |

**Timeline:**

**The 18-month timeline can be divided into phases:**

1. **Initiation and Planning (1-2 months):**
   * Resource allocation, finalizing project scope, business requirements, and detailed project planning.
2. **Design Phase (3-4 months):**
   * System architecture design, wireframing, UX/UI design, and approval from stakeholders.
3. **Development Phase (6-8 months):**
   * Core development of the online store, including front-end and back-end functionality, integration with third-party services, etc.
4. **Testing and Quality Assurance (2-3 months):**
   * Testing for bugs, user experience, functionality, and security.
5. **Deployment and Go-Live (1 month):**
   * Final testing, deployment to production, and user training.
6. **Post-Launch Support and Maintenance (1 month):**
   * Fixing bugs or issues reported by users after launch, and providing ongoing support.

**AS-IS (Current State):**

**1. Inventory Management**

* Inventory is managed manually using spreadsheets, leading to errors and delays in stock updates.
* No real-time alerts for low stock or replenishment needs.
* Categorization of products is inconsistent, making it difficult for customers to browse effectively.

**2. Order Management**

* Orders are processed manually, increasing the chances of errors and delays in order fulfillment.
* Limited integration with payment gateways, resulting in frequent transaction failures or delays.
* Customers lack real-time order status updates, causing dissatisfaction**.**

**3. Delivery Management**

* Basic tracking for deliveries with no route optimization, leading to delayed shipments.
* Delivery personnel are not equipped with tools for efficient task management.
* Proof of delivery is handled manually, increasing risks of disputes.

**4. Customer Engagement**

* No personalization in product recommendations.
* Customer support is reactive, handled via emails or phone calls without a centralized system.
* No loyalty programs or special offers are in place to retain customers.

**5. Reporting and Analytics**

* Sales and inventory data are not analyzed effectively, resulting in missed opportunities for optimization.
* Reports are generated manually, consuming time and reducing accuracy.

**6. System Performance**

* The platform experiences frequent downtime during high traffic, leading to lost sales.
* Slow response times frustrate users and lead to higher cart abandonment rates.

**7. User Interface**

* The website design is outdated and not responsive, providing a subpar user experience on mobile devices.
* Navigation is complex, making it difficult for users to find desired products quickly.

**Process Flow Diagram:**



**Desired State:**

**1. Inventory Management**

* Real-time inventory tracking using automated systems, ensuring accurate stock updates and minimizing errors.
* Automated alerts for low stock and replenishment needs based on predefined thresholds, reducing manual intervention.
* Consistent and logical categorization of products, enabling users to browse efficiently with intuitive search and filter options.

**2. Order Management**

* Automated order processing to reduce errors and delays, with seamless integration to track orders at every stage.
* Full integration with multiple payment gateways, ensuring smooth and secure transactions with minimal failures or delays.
* Real-time order tracking for customers, providing updates on order status through the platform and notifications via email/SMS.

**3. Delivery Management**

* Optimized delivery routes through integration with advanced logistics tools to ensure faster and more efficient shipments.
* Equipped delivery personnel with tools and mobile apps for real-time updates and efficient task management.
* Automated proof of delivery captured digitally, minimizing disputes and ensuring accurate records.

**4. Customer Engagement**

* Personalized product recommendations based on customer behavior and preferences, enhancing the shopping experience.
* Centralized and responsive customer support system, enabling efficient query resolution via live chat, ticketing, or integrated helpdesks.
* Loyalty programs and special offers to retain customers and encourage repeat purchases through rewards, discounts, and promotions.

**5. Reporting and Analytics**

* Comprehensive sales and inventory data analysis using advanced reporting tools to optimize stock levels and sales strategies.
* Automated report generation that saves time and improves accuracy, with dashboards for real-time insights into business performance.

**6. System Performance**

* Scalable and reliable platform that can handle high traffic loads with minimal downtime, ensuring continuous sales during peak periods.
* Optimized response times for faster page loads and quicker transaction processing, improving the user experience and reducing cart abandonment.

**7. User Interface**

* Modern and responsive web design that provides an optimal user experience across all devices, including mobile and tablet.
* Simplified and intuitive navigation, making it easier for users to find and purchase products with minimal clicks.

**Software Requirements Specification (SRS) for Online Store**

**Client Name:** Rajesh Kumar   
**Project Name:** Online Store  
Software Requirement Specification  
**Date:** January 25, 2025

**Record of Revisions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Version** | **Date of Release / Revision** | **Prepared / Revised By** | **Reviewed By** | **Approved By** | **Reasons for revisions** |
| 1 | 25-Jan-25 | Rakshana R | Santhosh | Rajesh | Initial version |

**1.0 Introduction**

**1.1 Overview**

The Online Store is an e-commerce platform designed to facilitate the sale of various product categories, such as electronics, clothing, beauty products, and home goods. The platform will allow customers to browse, search, add items to a shopping cart, place orders, and make payments securely. Vendors can manage their inventory, orders, and customers via an Admin Panel.

**1.2 Acronyms and Definitions**

|  |  |
| --- | --- |
| **Term** | **Description** |
| UI | User Interface |
| API | Application Programming Interface |
| DB | Database |
| Admin | Administrator |
| User | Customer/Consumer |
| SKU | Stock Keeping Unit (product identifier) |
| CMS | Content Management System |

**1.3 Operational Requirements**

**1.3.1 Software Requirements**

* Frontend: HTML5, CSS3, JavaScript, React.js or Angular
* Backend: Node.js or PHP, MySQL or MongoDB
* Payment Gateway: Integration with Stripe, PayPal, Razorpay, or similar
* Hosting: Cloud-based hosting (e.g., AWS, Azure)
* Additional Tools: Version control (Git), Build tools (Webpack)

**1.3.2 Hardware Requirements**

* Server: At least 4GB of RAM, 2 CPU cores
* Storage: 100GB for product images, customer data, transaction logs
* Network: High-speed internet for seamless user experience
* Backup: Daily backup for all data, including transactions

**1.4 References**

* Proposal Document
* User Requirements Document
* UI/UX Design Mockups

**1.5 Design and Implementation Constraints**

* Technology Stack: The system must be built using the chosen technology stack, and no alternatives will be allowed unless they meet the project’s specific requirements.
* Compliance: The application must comply with e-commerce industry standards (e.g., PCI DSS for payment processing).
* Security Standards: Secure payment gateways, SSL encryption for data transmission.
* Third-party Integrations: Dependencies on third-party APIs (payment processors, shipping providers).

**1.6 Assumed Factors That Could Affect the Requirements Stated In the SRS**

* Payment Gateway Integration: Integration with third-party payment gateways depends on their API availability and the security compliance required.
* Inventory Management: Real-time inventory updates may be affected by vendor stock levels.
* Shipping Providers: Integration with external logistics services for delivery may be subject to availability and pricing changes.

**2.0 System Overview**

**2.1 Current System**

Currently, the client does not have an online platform for their store. All sales are carried out through physical stores and third-party platforms. The lack of an integrated online presence limits their reach and customer base.

**2.2 Proposed System**

The proposed system is an online store where customers can browse various categories, add products to their cart, and make purchases securely. The store will include:

* Product Catalog: A categorized listing of all products.
* Shopping Cart: Allows users to review and modify their orders.
* Checkout System: Secure order placement and payment processing.
* Admin Dashboard: For managing products, users, and orders.

**2.3 Benefits of the Proposed System**

* Increased Reach: Customers can access the store from anywhere at any time.
* Enhanced User Experience: An easy-to-navigate interface with a responsive design.
* Efficient Order Management: Real-time inventory and order tracking for administrators.
* Secure Transactions: Integration with trusted payment gateways ensures secure online payments.
* Data Analytics: Admin can track user behavior, sales trends, and inventory status.

**3.0 UI Requirements**

**3.1 Project Contents**

**Every Module Functionality Description required:**

* Homepage: A clean, attractive homepage with top products, search functionality, and promotions.
* Product Pages: High-quality images, detailed product descriptions, pricing, and "Add to Cart" functionality.
* Shopping Cart: A page that displays selected products, their quantities, and a summary of total cost.
* Checkout Page: Includes shipping details, payment options, and order confirmation.
* Admin Panel: An interface for managing products, orders, and customer data.

**3.2 Detailed UI Requirements**

* Design: The UI should follow modern design principles, ensuring consistency and a responsive layout.
* Navigation: Intuitive navigation menus for product categories and account management.
* Search Functionality: Users should be able to search products by name, category, price range, etc.
* Product Filters: Filters for sorting products by price, ratings, popularity, and more.
* Accessibility: The platform should be accessible to people with disabilities, meeting WCAG guidelines.

**4.0 Functional Requirements**

**4.1 User Registration & Login**

* Users should be able to create an account using email or social media logins.
* Email verification required to activate the account.
* Users should be able to recover/reset their password via email.

**4.2 Product Catalog & Search**

* The product catalog must be categorized, and users should be able to filter products by category, price, or other attributes.
* Product details must include images, specifications, and customer reviews.

**4.3 Shopping Cart**

* Users should be able to add, remove, and modify products in their cart.
* The cart should display product details, quantities, and total cost.
* Cart items should be saved when users log in or out.

**4.4 Checkout & Payment**

* Users should be able to provide shipping details, select a payment method, and place the order.
* Multiple payment methods: credit/debit card, PayPal, Razorpay, etc.
* Order summary and confirmation page after successful payment.

**4.5 Order Management (Admin)**

* Admin should be able to view, update, and process orders.
* Admin should be able to manage product inventory, including adding, updating, and deleting products.
* Admin should be able to view and manage customer accounts and their orders.

**Functional Requirement:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| FR001 | User Registration and Profile Management | Allow users to register, log in, and manage their profiles. | High |
| FR002 | Product Browsing and Filtering | Enable users to browse products by categories and search filters. | High |
| FR003 | Cart Management | Allow users to add, update, or remove items from their cart. | High |
| FR004 | Guest Checkout | Support guest checkout for faster transactions. | High |
| FR005 | Secure Payment Integration | Enable secure payment options with multiple gateways. | High |
| FR006 | Real-Time Stock Updates | Provide real-time stock availability updates. | High |
| FR007 | Promotional Code Application | Allow customers to apply promotional codes during checkout. | Medium |
| FR008 | Order Confirmation Notifications | Generate and send order confirmations via email/SMS. | High |
| FR009 | Real-Time Order Tracking | Allow users to track their orders in real-time. | High |
| FR010 | Customer Product Reviews and Ratings | Support product reviews and ratings by customers. | Medium |
| FR011 | Wishlist Management | Enable wishlist creation for future purchases. | Medium |
| FR012 | Automated Product Recommendations | Provide automated recommendations based on user behavior. | High |
| FR013 | Third-Party Logistics Integration | Allow integration with third-party logistics for delivery. | Medium |
| FR014 | Return and Refund Management | Provide a return/refund management system. | High |
| FR015 | Gift Wrapping Option | Allow customers to request gift wrapping for their orders. | Low |
| FR016 | Multilingual Product Descriptions | Support multilingual product descriptions. | Medium |
| FR017 | Live Chat Support | Enable live chat support for customer queries. | Medium |
| FR018 | Admin Product Management | Allow admin users to add, edit, or delete products. | High |
| FR019 | Sales and Inventory Reporting | Provide reporting tools for sales analytics and inventory. | High |
| FR020 | Product Sorting | Allow product sorting by price, rating, and popularity. | Medium |
| FR021 | Location-Based Product Availability | Enable location-based product availability checks. | High |
| FR022 | Recurring Order Subscriptions | Support recurring order subscriptions for specific products. | Medium |
| FR023 | Dynamic Pricing | Allow dynamic pricing based on demand and supply. | Medium |
| FR024 | Product Comparison | Provide product comparisons for customers. | Medium |
| FR025 | Sustainability-Based Product Filtering | Allow filtering products based on sustainability (e.g., eco-friendly). | Low |
| FR026 | CRM Integration | Integrate with external CRM systems for customer management. | Medium |
| FR027 | Order History and Reorder | Provide order history and reorder functionality. | High |
| FR028 | Bulk Order Placement | Support bulk order placements for B2B customers. | Medium |
| FR029 | Custom Gift Messages | Allow custom messages for gift deliveries. | Low |
| FR030 | Multiple Shipping Address Management | Enable users to save multiple shipping addresses. | Medium |
| FR031 | Product Availability Alerts | Provide a product availability alert system. | Medium |
| FR032 | Barcode Scanning for Warehouse Management | Enable barcode scanning for warehouse management. | Medium |
| FR033 | Multiple Payment Methods Support | Support multiple payment methods, including wallets and BNPL. | High |
| FR034 | Scheduled Deliveries | Allow scheduled deliveries based on customer preferences. | Medium |
| FR035 | Loyalty Points System | Enable loyalty point accumulation and redemption. | Medium |
| FR036 | Social Media Login | Provide a secure login option using social media accounts. | Low |
| FR037 | Delivery Status Notifications | Track delivery statuses and notify customers of updates. | High |
| FR038 | Out-of-Stock Suggestions | Allow customers to leave suggestions for out-of-stock items. | Low |
| FR039 | Product Tagging | Enable product tagging for better search visibility. | Medium |
| FR040 | Admin Dashboard for Performance Monitoring | Provide admin dashboards for monitoring website performance. | High |

**Non-Functional Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Request Name** | **Requirement Description** | **Priority** |
| NFR001 | Key User Action Response Time | Ensure a response time of under 2 seconds for key user actions. | High |
| NFR002 | System Uptime Guarantee | Provide 99.9% system uptime, excluding scheduled maintenance. | High |
| NFR003 | Concurrent User Performance | Support 1,000 concurrent users with no performance degradation. | High |
| NFR004 | Data Encryption | Encrypt sensitive data at rest and during transmission. | High |
| NFR005 | PCI DSS Compliance | Ensure compliance with PCI DSS for payment security. | High |
| NFR006 | Scalable Architecture | Provide a scalable architecture to handle peak traffic. | High |
| NFR007 | Cross-Platform Usability | Enable seamless cross-platform usage (desktop and mobile). | High |
| NFR008 | GDPR and Privacy Law Compliance | Adhere to GDPR and other local privacy laws. | High |
| NFR009 | Data Backup Frequency | Back up all system data every 15 minutes. | Medium |
| NFR010 | Data Restoration Timeframe | Restore data within 30 minutes of a failure. | High |
| NFR011 | Multilingual User Interface | Ensure a multilingual interface for global users. | Medium |
| NFR012 | Zero Downtime Updates | Allow updates with zero downtime through CI/CD pipelines. | Medium |
| NFR013 | Real-Time Server Monitoring | Provide real-time monitoring of server health and performance. | High |
| NFR014 | Fast Sales Report Generation | Generate sales reports within 10 seconds. | Medium |
| NFR015 | User Session Expiry | Allow user sessions to expire after 15 minutes of inactivity. | High |
| NFR016 | API Integration Compatibility | Ensure integration compatibility with third-party APIs. | High |
| NFR017 | Audit Log Storage Duration | Store logs for at least 6 months for auditing purposes. | Medium |
| NFR018 | Intuitive and Accessible UI/UX | Maintain an intuitive and accessible UI/UX design. | High |
| NFR019 | Role-Based Access Control | Support role-based access control for secure admin operations. | High |
| NFR020 | Regular Scalability Testing | Ensure scalability testing every six months. | Medium |
| NFR021 | Role-Specific Performance Dashboards | Provide role-specific performance dashboards. | Medium |
| NFR022 | Customer Account Archiving | Archive inactive customer accounts after one year. | Medium |
| NFR023 | Eco-Friendly Server Operations | Minimize server-side energy consumption for eco-friendliness. | Low |
| NFR024 | WCAG 2.1 UI Compliance | Ensure all UI components are WCAG 2.1 compliant. | Medium |
| NFR025 | Multi-Format Report Export | Allow exports of financial reports in multiple formats. | Medium |
| NFR026 | Delivery Simulation Support | Support delivery simulations for logistics planning. | Medium |
| NFR027 | API Usage Monitoring and Throttling | Monitor API usage and throttle requests beyond set limits. | High |
| NFR028 | ISO 27001 Compliance | Adhere to ISO 27001 standards for security management. | High |
| NFR029 | Disaster Recovery Support | Provide disaster recovery support for critical failures. | High |
| NFR030 | Quarterly Browser Compatibility Testing | Test the platform on all major browsers quarterly. | Medium |
| NFR031 | Dynamic Scaling for Peak Traffic | Allow dynamic scaling for holiday sales peaks. | Medium |
| NFR032 | Page Load Time Optimization | Minimize page load times to under 3 seconds for all pages. | High |
| NFR033 | Fast Payment Processing | Ensure all payments are processed within 5 seconds. | High |
| NFR034 | SLA Compliance Automation | Automate SLA compliance tracking for third-party integrations. | Medium |
| NFR035 | Content Delivery Network Usage | Use a Content Delivery Network (CDN) to distribute static assets. | Medium |
| NFR036 | Immutable Transaction Logging | Ensure transactions are logged immutably for compliance. | High |
| NFR037 | Localization for Currencies and Taxes | Provide localization support for currencies and taxes. | Medium |
| NFR038 | Automatic Failover for High Availability | Enable automatic failover for high availability. | High |
| NFR039 | Pre-Event Load Testing | Perform load testing before major promotional events. | High |
| NFR040 | Admin Two-Factor Authentication | Secure admin operations with two-factor authentication. | High |

**5.0 Non-Functional Requirements**

**5.1 Performance**

* The system should be able to handle at least 1,000 concurrent users.
* Pages should load within 3 seconds under normal load.

**5.2 Security**

* Secure login with two-factor authentication.
* HTTPS encryption for all transactions.
* Compliance with PCI DSS for payment processing.

**5.3 Usability**

* User-friendly UI for both customers and administrators.
* The platform should be accessible on mobile devices with a responsive design.

**5.4 Reliability**

* The system should have an uptime of 99.9%.
* Regular data backups to ensure recovery in case of failure.

**6.0 Other Parameters**

**6.1 Acceptance Criteria**

The client will review and accept the application upon receiving the following deliverables:

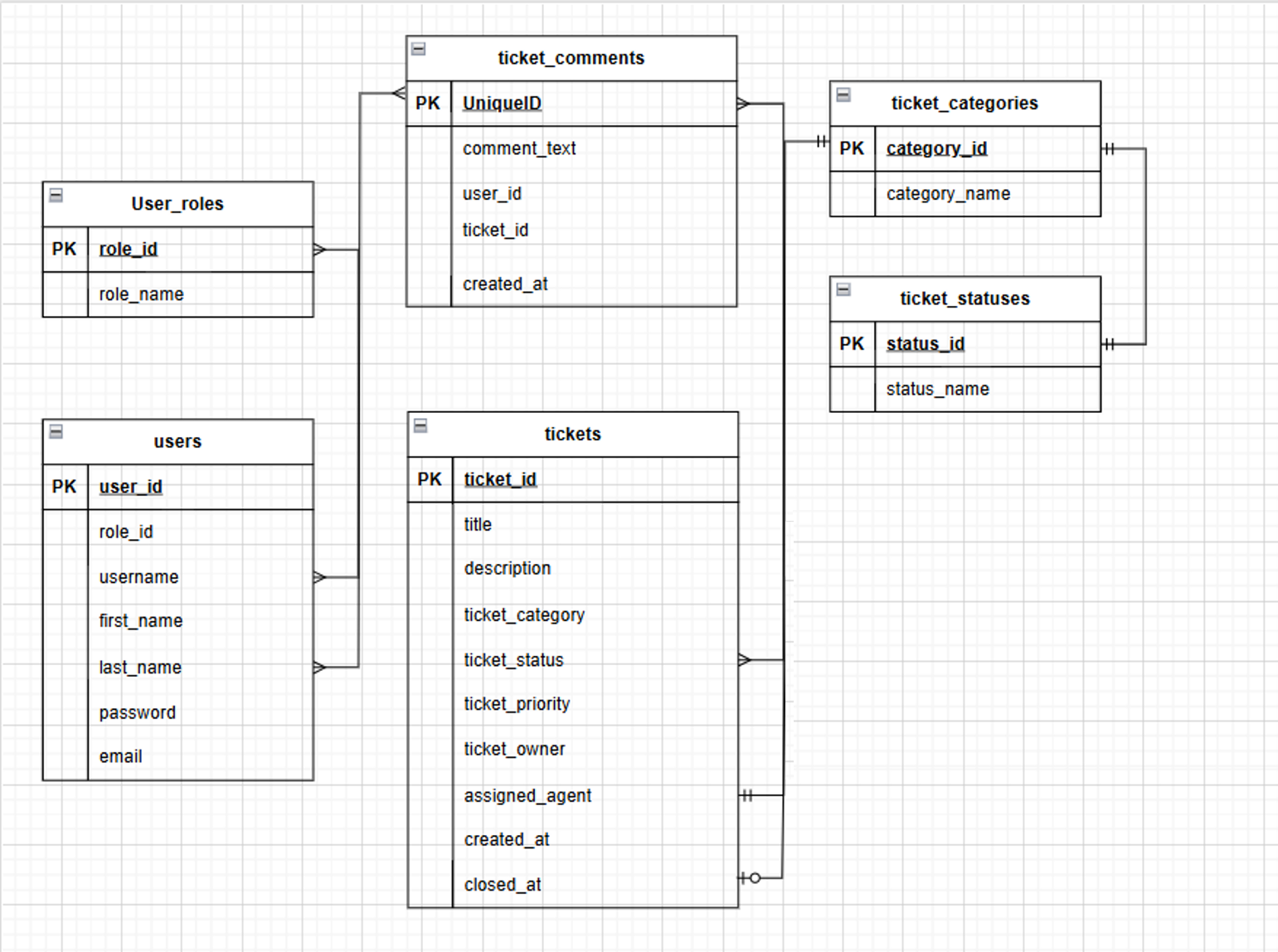
* Functional prototypes for all major features.
* A fully functional, tested application.
* Documentation, including installation guide and user manual.

**6.2 Future Enhancements**

* Mobile App Development for Android and iOS.
* Integration with additional payment gateways.
* AI-based product recommendations based on user behavior.

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

**ER Diagram of Support Ticket:**

****

This ER diagram represents a comprehensive database schema for a ticketing system, involving users, roles, tickets, ticket categories, statuses, priorities, and comments. Below is a detailed explanation of the entities and their relationships:

**Entities and Attributes:**

1. **Users Table:**
   * user\_id (PK): A unique identifier for each user.
   * role\_id (FK): A foreign key linking the user to the User\_roles table, indicating the user's role.
   * username: The login username of the user.
   * first\_name: The user's first name.
   * last\_name: The user's last name.
   * password: The user's password for authentication.
   * email: The user's email address.

**Description:** This table stores the information of all users in the system, such as their personal details and their role, which determines their access permissions within the system.

1. **User\_roles Table:**
   * role\_id (PK): A unique identifier for each user role.
   * role\_name: The name of the role (e.g., "Admin", "Agent", "Customer").

**Description:** This table defines the roles assigned to users. It helps in managing access control by specifying what each role can do within the system (e.g., admin can manage tickets, agents can respond to them, etc.).

1. **Tickets Table:**
   * ticket\_id (PK): A unique identifier for each ticket.
   * title: The title or summary of the ticket.
   * description: A detailed description of the issue or request raised in the ticket.
   * ticket\_category (FK): A foreign key referencing ticket\_categories, specifying the category of the ticket (e.g., "Technical Issue", "Billing Query").
   * ticket\_status (FK): A foreign key referencing ticket\_statuses, indicating the current status of the ticket (e.g., "Open", "In Progress", "Closed").
   * ticket\_priority (FK): A foreign key referencing ticket\_priorities, denoting the priority level of the ticket (e.g., "High", "Medium", "Low").
   * ticket\_owner (FK): A foreign key referencing the users table. This field indicates the user (typically an admin or customer) who created the ticket.
   * assigned\_agent: The user (typically an agent) who is assigned to work on the ticket.

**Description:** The tickets table holds all the information related to individual tickets raised within the system. It connects to other tables like categories, statuses, and priorities to track the ticket's journey through the system.

1. **Ticket\_categories Table:**
   * category\_id (PK): A unique identifier for each ticket category.
   * category\_name: The name of the category (e.g., "Technical", "Billing").

**Description:** This table categorizes tickets, helping to classify them into different types (e.g., "Technical Issue", "Service Request"). It ensures tickets are organized according to their nature and allows for better filtering and tracking.

1. **Ticket\_statuses Table:**
   * status\_id (PK): A unique identifier for each ticket status.
   * status\_name: The name of the ticket status (e.g., "Open", "In Progress", "Closed").

**Description:** This table maintains the possible statuses of tickets. It is used to track the current state of each ticket in the system. For example, a ticket may move through statuses such as "Open", "In Progress", and "Resolved".

**6. Ticket\_comments Table:**

* + UniqueID (PK): A unique identifier for each comment.
  + comment\_text: The text content of the comment.
  + user\_id (FK): A foreign key referencing the users table, indicating the user who made the comment.
  + ticket\_id (FK): A foreign key referencing the tickets table, linking the comment to a specific ticket.
  + created\_at: The timestamp when the comment was made.

**Description:** This table stores all comments made on tickets. Each comment is linked to a ticket (via ticket\_id) and a user (via user\_id). Comments allow users to add notes, updates, or feedback on tickets, enabling communication between the ticket owner, assigned agents, and other relevant users.

**Relationships:**

1. **Users to User\_roles (One-to-Many):** Each user is associated with one role (e.g., “Admin”, “Agent”), but each role can be assigned to many users. This is represented by the role\_id foreign key in the users table.
2. **Tickets to Ticket\_categories, Ticket\_statuses, Ticket\_priorities (Many-to-One):**
   * Each ticket belongs to one category, one status, and one priority.
   * The ticket\_category, ticket\_status, and ticket\_priority fields in the tickets table reference their respective foreign keys in the ticket\_categories, ticket\_statuses, and ticket\_priorities tables.
3. **Tickets to Users (One-to-Many):**
   * Each ticket is created by one user (the ticket\_owner) and can be assigned to one or more agents (via the assigned\_agent field).
   * The ticket\_owner field in the tickets table is a foreign key that references the users table, while assigned\_agent is also a foreign key linking to the same users table.
4. **Ticket\_comments to Tickets and Users (Many-to-One):**
   * Each comment is linked to one ticket and one user.
   * The ticket\_id in the ticket\_comments table references the tickets table, while the user\_id references the users table.

**Normalization & Design:**

* **Normalization:** The diagram follows normalization principles to eliminate redundancy and ensure data integrity. Each entity is stored separately with relationships managed via foreign keys.
* **Referential Integrity:** Foreign key constraints ensure that data is consistent across related tables (e.g., a comment must belong to an existing ticket, and a ticket owner must be an existing user).

**Conclusion:**

This database schema is designed to manage a ticketing system effectively. It allows for user management, ticket categorization, status tracking, priority setting, and commenting, making it robust for real-world ticket management scenarios.

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

**User Story No: 1**

|  |  |
| --- | --- |
| **Tasks** | **Create login functionality, validate user credentials, integrate authentication system.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to log into my account to access personalized features. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Enter valid credentials. |
| 2. Click "Login." |
| 3. Redirect to personalized homepage on successful login. |
| 4. Display error on invalid credentials. |

**User Story No: 2**

|  |  |
| --- | --- |
| **Tasks** | **Create product search bar, integrate filters, and search functionality.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to search for products easily to find items I want to purchase. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. User can type in the search bar. |
| 2. Filters are available for product categories. |
| 3. Display relevant results based on search input. |

**User Story No: 3**

|  |  |
| --- | --- |
| **Tasks** | **Implement product filtering by price, brand, and category.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to filter products by price, brand, and category to find the most relevant products. |
| **BV** | ₹1000 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Filters are shown on the sidebar. |
| 2. User can select multiple filters. |
| 3. Results update automatically based on selected filters. |

**User Story No: 4**

|  |  |
| --- | --- |
| **Tasks** | **Design product details page with images, description, and pricing.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to view the product details so I can make an informed purchase decision. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Product images are clear. |
| 2. Product description is accurate. |
| 3. Price and available discounts are clearly shown. |

**User Story No: 5**

|  |  |
| --- | --- |
| **Tasks** | **Add to cart functionality, display cart summary.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to add items to my cart to review them before checkout. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. User can add products to the cart. |
| 2. Cart icon updates with the number of items. |
| 3. Cart page shows product name, quantity, and price. |

|  |  |  |
| --- | --- | --- |
| **Tasks** |  | **Implement checkout process with address input and payment options.** |
| **Priority** |  | High |
| **Value Statement** |  | As a user, I want to check out quickly with my selected products and provide necessary details for delivery. |
| **BV** |  | ₹1000 |
| **CP** |  | 13 |
| **Acceptance Criteria** |  | 1. User can input shipping address. |
|  | 2. Multiple payment options are available. |
|  | 3. Order summary is displayed before final confirmation. |

**User Story No: 6**

**User Story No: 7**

|  |  |
| --- | --- |
| **Tasks** | **Add option to track order status.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to track my order status to know when it will arrive. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. User can view order status on "My Orders" page. |
| 2. Status is updated in real-time. |

**User Story No: 8**

|  |  |
| --- | --- |
| **Tasks** | **Allow users to save favorite products.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to save my favorite products for later purchase. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. User can click on "Save for later" on product page. |
| 2. Favorite items appear in "Saved" section. |

**User Story No: 9**

|  |  |
| --- | --- |
| **Tasks** | **Integrate product reviews and ratings system.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to read reviews and ratings from other customers to help me make a purchase decision. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. Reviews are visible on the product page. |
| 2. Users can rate products from 1 to 5 stars. |
| 3. Users can write reviews. |

**User Story No: 10**

|  |  |
| --- | --- |
| **Tasks** | **Implement order confirmation email and SMS notifications.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to receive an order confirmation email and SMS to verify my purchase. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. User receives confirmation email. |
| 2. User receives SMS with order details. |

**User Story No: 11**

|  |  |
| --- | --- |
| **Tasks** | **Implement payment gateway integration for secure transactions.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to pay securely for my purchases through various payment methods. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. Payment methods include credit/debit cards, UPI, and wallets. |
| 2. Secure payment gateway is used. |
| 3. Transaction is confirmed after payment. |

**User Story No: 12**

|  |  |
| --- | --- |
| **Tasks** | **Allow users to view related products on product pages.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to see related products to explore more options while shopping. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Display related products based on category. |
| 2. Related products are clickable and lead to their respective pages. |

**User Story No: 13**

|  |  |
| --- | --- |
| **Tasks** | **Provide an option for users to apply discount coupons.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to apply discount codes to reduce the cost of my purchases. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Coupon input field is available at checkout. |
| 2. Discount is applied after entering the valid coupon code. |

**User Story No: 14**

|  |  |
| --- | --- |
| **Tasks** | **Display estimated delivery time for each product.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to know the estimated delivery time for my product before purchasing. |
| **BV** | ₹1000 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Delivery time is displayed clearly on the product page. |
| 2. The time is updated based on the shipping address. |

**User Story No: 15**

|  |  |
| --- | --- |
| **Tasks** | **Implement wishlist feature for users to save products.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to save products in my wishlist for future purchase. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Users can add products to the wishlist. |
| 2. Wishlist can be accessed from the user profile. |

**User Story No: 16**

|  |  |
| --- | --- |
| **Tasks** | **Implement user account settings page for profile management.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to manage my account details, such as email, password, and address. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. User can update email, password, and address details. |
| 2. Changes are saved upon clicking "Save Changes." |

**User Story No: 17**

|  |  |
| --- | --- |
| **Tasks** | **Enable product availability check for out-of-stock items.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to know if a product is out of stock before adding it to the cart. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Out-of-stock message appears when an item is unavailable. |
| 2. Availability status is updated in real-time. |

**User Story No: 18**

|  |  |
| --- | --- |
| **Tasks** | **Add option for users to sort products by price, rating, and popularity.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to sort products based on my preferences, such as price, rating, and popularity. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Sorting options are available in the product list. |
| 2. Products are sorted correctly according to the selected criteria. |

**User Story No: 19**

|  |  |
| --- | --- |
| **Tasks** | **Implement search history functionality for users.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to see my search history to quickly revisit previous products. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Recent searches are displayed under the search bar. |
| 2. Users can clear search history. |

**User Story No: 20**

|  |  |
| --- | --- |
| **Tasks** | **Enable multiple shipping address options for users.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to use different shipping addresses for my orders. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Users can add multiple shipping addresses. |
| 2. User can select the preferred address during checkout. |

**User Story No: 21**

|  |  |
| --- | --- |
| **Tasks** | **Add option to change product quantity in the cart.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to change the quantity of products in my cart before checkout. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. User can increase or decrease the product quantity. |
| 2. Cart total updates automatically based on quantity changes. |

**User Story No: 22**

|  |  |
| --- | --- |
| **Tasks** | **Implement user order history page with details.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to view my past orders to track previous purchases and reorder. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Display a list of all previous orders with details. |
| 2. Users can reorder items from order history. |

**User Story No: 23**

|  |  |
| --- | --- |
| **Tasks** | **Implement guest checkout option for non-registered users.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to check out as a guest without creating an account. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. User can proceed to checkout without signing in. |
| 2. Guest users are asked for basic information (name, address, payment). |

**User Story No: 24**

|  |  |
| --- | --- |
| **Tasks** | **Allow users to share products via social media.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to share products on social media with my friends and family. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Share buttons for Facebook, Twitter, and WhatsApp are available on the product page. |
| 2. Users can share product links easily. |

**User Story No: 25**

|  |  |
| --- | --- |
| **Tasks** | **Implement product comparison feature.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to compare products to make an informed purchase decision. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. User can select multiple products to compare. |
| 2. A comparison table is displayed showing key features and prices. |

|  |  |
| --- | --- |
| **Tasks** | **Enable users to track delivery progress with real-time updates.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to track my delivery progress in real-time to know exactly when my order will arrive. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. User can see the delivery status (e.g., "Shipped," "Out for Delivery"). |
| 2. Delivery updates are pushed via notifications. |

**User Story No: 26**

**User Story No: 27**

|  |  |
| --- | --- |
| **Tasks** | **Enable users to view return and refund policies.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to understand the return and refund policies before making a purchase. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Return and refund policies are clearly displayed on the product page. |
| 2. User can access policies from the checkout page. |

**User Story No: 28**

|  |  |
| --- | --- |
| **Tasks** | **Enable users to write product reviews and upload images.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to write reviews and upload images of products I purchased to help other customers. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. Review and image upload options are available on the product page. |
| 2. Reviews with images are displayed along with the product. |

**User Story No: 29**

|  |  |
| --- | --- |
| **Tasks** | **Implement multiple currency support for international users.** |
| **Priority** | Medium |
| **Value Statement** | As an international user, I want to view product prices in my local currency. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Currency option is available in the header. |
| 2. User can select their preferred currency. |
| 3. Prices are displayed in the selected currency. |

**User Story No: 30**

|  |  |
| --- | --- |
| **Tasks** | **Add product zoom functionality for images.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to zoom in on product images to view detailed visuals before purchasing. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Product images can be zoomed in with a hover or click. |
| 2. Zoomed-in images show more detailed visuals of the product. |

**User Story No: 31**

|  |  |
| --- | --- |
| **Tasks** | **Implement a feedback system for users to rate the shopping experience.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to provide feedback on my shopping experience to help improve the platform. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Users can rate their shopping experience from 1 to 5 stars. |
| 2. A feedback form is provided for detailed input. |

**User Story No: 32**

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| --- | --- |
| **Tasks** | **Provide product warranty information on the product page.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to know the warranty details for a product before purchasing it. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Warranty information is clearly visible on the product page. |
| 2. Users can click to view more detailed warranty terms. |

**User Story No: 33**

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| --- | --- |
| **Tasks** | **Add order confirmation page with order details.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to see my order details and confirmation after placing an order. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. Confirmation page displays product, quantity, price, shipping address, and delivery date. |
| 2. A confirmation email is sent to the user. |

**User Story No: 34**

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| --- | --- |
| **Tasks** | **Implement product availability notification for out-of-stock items.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to be notified when a product that is out of stock becomes available again. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. Users can opt-in to be notified via email when a product is back in stock. |
| 2. Notification email is sent when the product is available again. |

**User Story No: 35**

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| --- | --- |
| **Tasks** | **Allow users to save shipping details for future purchases.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to save my shipping details to make future checkouts faster. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. User can save and edit shipping details. |
| 2. Saved shipping details are automatically filled during checkout. |

**User Story No: 36**

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| --- | --- |
| **Tasks** | **Implement live chat support for customer service.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to chat with customer service to get immediate help during my shopping experience. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. A chat window is available on every page for users to initiate a conversation. |
| 2. Support agents respond in real-time. |

**User Story No: 37**

|  |  |
| --- | --- |
| **Tasks** | **Add search filter for size and color options.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to filter products by size and color to find exactly what I’m looking for. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Filters for size and color are available on the product page. |
| 2. Products are displayed based on selected filter options. |

**User Story No: 38**

|  |  |
| --- | --- |
| **Tasks** | **Enable users to apply gift wrapping for their orders.** |
| **Priority** | Low |
| **Value Statement** | As a user, I want to have the option to gift wrap my purchased items. |
| **BV** | ₹500 |
| **CP** | 5 |
| **Acceptance Criteria** | 1. A gift wrapping option is available at checkout. |
| 2. Users can select the gift wrap style and include a message. |

**User Story No: 39**

|  |  |
| --- | --- |
| **Tasks** | **Add product review rating feature on the product page.** |
| **Priority** | High |
| **Value Statement** | As a user, I want to see product ratings and reviews from other customers to make an informed purchase decision. |
| **BV** | ₹1000 |
| **CP** | 13 |
| **Acceptance Criteria** | 1. Ratings are shown in stars (1-5). |
| 2. Reviews are displayed with product ratings. |

**User Story No: 40**

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| --- | --- |
| **Tasks** | **Allow users to filter search results by price range.** |
| **Priority** | Medium |
| **Value Statement** | As a user, I want to filter search results by price to find products within my budget. |
| **BV** | ₹500 |
| **CP** | 8 |
| **Acceptance Criteria** | 1. Price range filter is available on the search page. |
| 2. Results are updated according to the selected price range. |