**Assignment 1:**

**Business Requirements Document (BRD)**

**Project Name:** Manufacturing & Delivery Management System
**Client:** [Company Name]
**Date:** [Date]
**Prepared By:** P Singa Ram

**1. Introduction**

[Company Name] specializes in manufacturing and distributing ice-cream and milk products. To enhance operational efficiency and customer satisfaction, the company seeks to develop a software solution to manage inventory across manufacturing plants and warehouses while ensuring the quickest delivery to customers.

**2. Business Objectives**

1. **Efficient Inventory Management**
	* Real-time tracking of stock levels in manufacturing plants and warehouses.
	* Automated stock replenishment and demand forecasting.
	* Reduction in product wastage and loss.
2. **Optimized Delivery System**
	* Route optimization for fastest deliveries.
	* Order tracking and status updates for customers.
	* Integration with logistics partners and fleet management.

**3. Scope of Work**

**3.1 Functional Requirements**

**Inventory Management**

* Centralized dashboard for inventory monitoring.
* Automated alerts for low stock and expiry dates.
* Batch tracking and quality control checks.
* Integration with manufacturing units for real-time stock updates.

**Delivery Management**

* Order processing and fulfillment.
* Route optimization using AI algorithms.
* Real-time vehicle tracking and dispatch management.
* Customer notifications (SMS/Email) for order status updates.

**3.2 Non-Functional Requirements**

* High availability and scalability.
* Secure access control and user authentication.
* Mobile-friendly interfaces for drivers and warehouse managers.
* Integration with third-party ERP and logistics systems.

**4. Stakeholders**

* **Manufacturing Team** (Monitors stock & production levels)
* **Warehouse Managers** (Handles inventory storage & dispatch)
* **Logistics & Delivery Team** (Ensures timely deliveries)
* **IT Team** (Maintains system infrastructure)
* **Customers** (Receives products and tracks orders)

**5. Development Plan**

**5.1 Technology Stack**

* **Backend:** Java (Spring Boot), Golang
* **Frontend:** React.js / Angular
* **Database:** PostgreSQL
* **Cloud Infrastructure:** AWS (EC2, S3, RDS, Lambda)
* **Message Queue:** RabbitMQ / Kafka
* **Monitoring & Logging:** Prometheus, Grafana

**5.2 Development Timeline**

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| **Phase** | **Duration** | **Key Deliverables** |
| Requirement Analysis | 2 Weeks | BRD Finalization |
| System Design | 3 Weeks | Architecture & Wireframes |
| Development (MVP) | 8 Weeks | Inventory & Delivery Modules |
| Testing & QA | 4 Weeks | Functional & Performance Testing |
| Deployment & Training | 3 Weeks | Go-Live & User Training |

Total Estimated Time: **20 Weeks**

**5.3 Resource Plan**

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| --- | --- | --- |
| **Role** | **Count** | **Responsibilities** |
| Project Manager | 1 | Overall project planning & execution |
| Business Analyst | 1 | Requirement gathering & client coordination |
| Backend Developers | 3 | API development & database design |
| Frontend Developers | 2 | UI/UX development |
| DevOps Engineer | 1 | Cloud deployment & infrastructure setup |
| QA Engineers | 2 | Functional & performance testing |
| Data Engineer | 1 | Data analytics & reporting |

**6. Risk Assessment & Mitigation**

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| **Risk** | **Impact** | **Mitigation** **Strategy** |
| Data Loss | High | Implement automatic backups in AWS S3 & RDS |
| System Downtime | Medium | Ensure high availability architecture |
| Delivery Delays | High | AI-based route optimization & tracking |
| User Adoption | Medium | Provide training & detailed documentation |

**7. Conclusion**

This software solution will enable [Company Name] to optimize inventory management, minimize waste, and enhance delivery efficiency. The system will be developed using robust and scalable technologies, ensuring seamless integration with existing processes. With the proposed timeline and resource allocation, the project is expected to be delivered within 20 weeks.

**Prepared By:** PSinga Ram

**Date:** [Date]

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



**Assignment 2:**

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

**P Singa Ram**
Business Analyst
Dr Reddy’s Lab
psingaramdrl@gmail.com | 9439438835
[Date]

**[Client’s Name]**
[Client’s Position]
[Client’s Company Name]
[Client’s Email]

1. **Subject: Introduction as Your Business Analyst & Next Steps**

Dear [Client’s Name],

I hope this email finds you well. My name is P Singa Ram, and I am the Business Analyst assigned to work with you and your team on the [Project Name]. I am excited to collaborate and assist in understanding your business needs, defining project requirements, and ensuring we build a solution that aligns with your goals.

Our first step will be to conduct a **business understanding process**, where I will work closely with you to gather insights about your operations, challenges, and expectations for the project. This will help us establish a clear roadmap and ensure the final solution meets your specific needs.

I would love to schedule a **kickoff meeting** at your convenience to discuss the project scope, key objectives, and next steps. Please let me know a suitable time for you and your team.

Looking forward to working with you and making this project a success. Please feel free to reach out if you have any questions.

Best regards,
**P Singa Ram**
Business Analyst
Dr Reddys’ Lab

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

**Business Requirements Document (BRD)**

**Project Name:** Ticketing System
**Client:** [Client Name]
**Date:** [Date]
**Prepared By:** P Singa Ram

**1. Introduction**

The **Ticketing System** is designed to manage and track customer or internal support requests efficiently. It enables users to create, assign, and resolve tickets while ensuring proper communication between stakeholders. The system aims to improve response times, enhance issue resolution, and provide insights into operational performance.

**2. Goal**

The goal of this project is to develop a **centralized ticketing system** that allows users to report issues, monitor their progress, and ensure timely resolution by support teams.

**3. Objectives**

* **Streamline Ticket Creation & Management**: Provide a structured workflow for users to submit, update, and track tickets.
* **Enhance Communication**: Enable notifications and collaboration between users and support agents.
* **Automate Ticket Assignment**: Assign tickets based on predefined rules and agent availability.
* **Improve Resolution Times**: Reduce delays through prioritization and escalation mechanisms.
* **Provide Analytics & Reporting**: Generate reports on ticket trends, resolution times, and performance metrics.

**4. Use Case Diagram**



1. **5. Use Case Specification**
2. **5.1 Use Case: Create Ticket**

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| **Use Case ID** | **UC-01** |
| Name | Create Ticket |
| Actor | User |
| Description | User submits a new ticket describing an issue. |
| Precondition | User must be logged into the system. |
| Steps | Ticket is created, assigned, and logged in the system. |
| 1. User navigates to the "Create Ticket" page. |
| 2. User fills in required details (issue description, priority, category). |
| 3. User submits the ticket. |
| 4. System assigns the ticket to an available support agent. |
| 5. Confirmation is displayed, and a notification is sent. |
| Postcondition |

**5.2 Use Case: Assign & Resolve Ticket**

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| **Use Case ID** | **UC-02** |
| Name | Assign & Resolve Ticket |
| Actor | Support Agent |
| Description | A support agent views, assigns, and resolves a ticket. |
| Precondition | A ticket must be created and pending resolution. |
| Steps | The ticket is resolved and marked as closed. |
| 1. Support agent logs into the system. |
| 2. Agent views the list of open tickets. |
| 3. Agent assigns the ticket to themselves or another agent. |
| 4. Agent works on resolving the issue and updates the ticket status. |
| 5. Once resolved, the agent closes the ticket. |
| 6. System notifies the user about resolution. |
| Postcondition |

**5.3 Use Case: Escalate Ticket**

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| **Use Case ID** | **UC-03** |
| Name | Escalate Ticket |
| Actor | Support Agent, Administrator |
| Description | A ticket is escalated to a higher level of support. |
| Precondition | A ticket must be unresolved or require higher-level intervention. |
| Steps | The ticket is resolved at an appropriate support level. |
| 1. Support agent identifies the need for escalation. |
| 2. Agent updates the ticket with escalation details. |
| 3. System notifies the administrator or senior support staff. |
| 4. The escalated ticket is reassigned to a higher-tier support agent. |
| 5. Higher-tier agent resolves and closes the ticket. |
| Postcondition |

**5.4 Use Case: Generate Reports**

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| **Use Case ID** | **UC-04** |
| Name | Generate Reports |
| Actor | Administrator |
| Description | The administrator generates reports on ticket trends and performance metrics. |
| Precondition | The system must contain historical ticket data. |
| Steps | The report is generated successfully and available for analysis. |
| 1. Administrator logs into the system. |
| 2. Admin navigates to the reporting section. |
| 3. Admin selects the desired report type and time frame. |
| 4. System fetches and generates the report. |
| 5. Admin views, downloads, or shares the report. |
| Postcondition |

1. **Make an ERD of creating a support ticket.**



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

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| User Story No: 1  | Tasks: 03 | Priority: High |
| I WANT TO CREATE AN ACCOUNTSO THAT I CAN SAVE MY PERSONAL DETAILS AND TRACK ORDERS |
| **BV:** 300  | CP: 03 |
| Acceptance Criteria:✅ Users should be able to register with an email and password.✅ Users should receive a confirmation email upon successful registration.✅ Users should be able to log in using their credentials.✅ Users should be able to reset their password if forgotten. |
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| User Story No: 2  | | **Tasks: 03**  | Priority: High |
| As a user, I want to log in securely using my email and password so that I can access my account. |
| **BV:** 250  | CP: 03 |
| ✔ Secure password authentication.✔ "Remember Me" functionality.✔ Error handling for invalid credentials. |
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| User Story No: 3  | Tasks: 04  | Priority: High |
| As a user, I want to reset my password if I forget it so that I can regain access to my account. |
| **BV:** 275  | CP: 03 |
| ✔ Password reset via email.✔ Password reset link expiration.✔ Secure password reset process. |
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| User Story No: 4 | Tasks: 04  | Priority: High |
| As a user, I want to update my profile details so that my information is up to date. |
| **BV:** 275  | CP: 03 |
| ✔ Profile update form.✔ Validation for profile fields.✔ Confirmation message on update. |
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| User Story No: 5 | Tasks: 04  | Priority: High |
| As a user, I want to view my order history so that I can track my past purchases. |
| **BV:** 275  | CP: 03 |
| ✔ Order history page.✔ Display of order details (date, items, amount).✔ Option to reorder. |
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| User Story No: 6 | Tasks: 04  | Priority: High |
| As a user, I want to browse products by category so that I can easily find what I need. |
| **BV:** 275  | CP: 03 |
| ✔ Product categories displayed.✔ Category pages with product listings.✔ Clear navigation between categories. |
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| User Story No: 7 | Tasks: 04  | Priority: High |
| As a user, I want to search for products using keywords so that I can quickly find items. |
| **BV:** 275  | CP: 03 |
| ✔ Search bar functionality.✔ Relevant search results.✔ Handling of no results. |
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| User Story No: 8 | Tasks: 04  | Priority: High |
| As a user, I want to filter products by price, brand, and rating so that I can narrow my search results. |
| **BV:** 275  | CP: 03 |
| ✔ Filter options for price, brand, and rating.✔ Dynamic update of results on filter selection.✔ Clear display of applied filters. |
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| User Story No: 9 | Tasks: 04  | Priority: High |
| As a user, I want to sort products by price, popularity, and ratings so that I can find the best deals. |
| **BV:** 275  | CP: 03 |
| ✔ Sort options for price, popularity, and ratings.✔ Accurate sorting of results.✔ Visual indication of current sorting order. |
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| User Story No: 10 | Tasks: 04  | Priority: High |
| As a user, I want to view product details so that I can learn more about a product before purchasing. |
| **BV:** 275  | CP: 03 |
| ✔ Detailed product page.✔ Product images, description, specifications.✔ Customer reviews and ratings. |
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| User Story No: 11 | Tasks: 04  | Priority: High |
| As a user, I want to add products to my shopping cart so that I can purchase them later. |
| **BV:** 275  | CP: 03 |
| ✔ "Add to Cart" button on product page.✔ Confirmation message on adding to cart.✔ Cart icon showing number of items. |
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| User Story No: 12 | Tasks: 04  | Priority: High |
| As a user, I want to remove products from my cart if I change my mind. |
| **BV:** 275  | CP: 03 |
| ✔ "Remove" option for cart items.✔ Update of cart total on removal.✔ Confirmation message on removal. |
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| User Story No: 13 | Tasks: 04  | Priority: High |
| As a user, I want to update the quantity of items in my cart so that I can adjust my order. |
| **BV:** 275  | CP: 03 |
| ✔ Quantity input field for cart items.✔ Update of cart total on quantity change.✔ Validation for quantity input. |
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| User Story No: 14 | Tasks: 04  | Priority: High |
| As a user, I want to save products to my wishlist so that I can buy them later. |
| **BV:** 275  | CP: 03 |
| ✔ "Add to Wishlist" button on product page.✔ Confirmation message on adding to wishlist.✔ Wishlist page with saved items. |
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| User Story No: 15 | Tasks: 04  | Priority: High |
| As a user, I want to move items from my wishlist to my cart so that I can easily purchase them. |
| **BV:** 275  | CP: 03 |
| ✔ "Move to Cart" option on wishlist items.✔ Update of cart and wishlist on moving items. |
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| User Story No: 16 | Tasks: 04  | Priority: High |
| As a user, I want to enter my shipping details so that my order is delivered to the correct address. |
| **BV:** 275  | CP: 03 |
| ✔ Shipping address form.✔ Validation for address fields.✔ Option to save multiple addresses. |
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| User Story No: 17 | Tasks: 04  | Priority: High |
| As a user, I want to select a payment method (credit card, PayPal, etc.) so that I can complete my purchase. |
| **BV:** 275  | CP: 03 |
| ✔ Integration with payment gateways (Stripe, PayPal, etc.).✔ Secure handling of payment information.✔ Support for multiple payment methods. |
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| User Story No: 18 | Tasks: 04  | Priority: High |
| As a user, I want to apply discount codes at checkout so that I can save money. |
| **BV:** 275  | CP: 03 |
| ✔ Discount code input field.✔ Validation for discount codes.✔ Update of order total on applying discount. |
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| User Story No: 19 | Tasks: 04  | Priority: High |
| As a user, I want to review my order summary before payment so that I can ensure everything is correct. |
| **BV:** 275  | CP: 03 |
| ✔ Order summary page with all details.✔ Clear display of items, shipping address, payment method, and total.✔ Option to edit order before proceeding. |
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| User Story No: 20 | Tasks: 04  | Priority: High |
| As a user, I want to receive an order confirmation email so that I have proof of my purchase. |
| **BV:** 275  | CP: 03 |
| ✔ Automated order confirmation email.✔ Email includes order details and tracking information. |
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| User Story No: 21 | Tasks: 04  | Priority: High |
| As a user, I want to track my order status so that I know when it will be delivered. |
| **BV:** 275  | CP: 03 |
| ✔ Order tracking page.✔ Real-time updates on order status.✔ Estimated delivery date and time. |
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| User Story No: 22 | Tasks: 04  | Priority: High |
| As a user, I want to get notifications for order dispatch and delivery so that I stay informed. |
| **BV:** 275  | CP: 03 |
| ✔ Email or SMS notifications for dispatch and delivery.✔ Customizable notification preferences. |
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| User Story No: 23 | Tasks: 04  | Priority: High |
| As a user, I want to change my shipping address before dispatch so that my order reaches the correct location. |
| **BV:** 275  | CP: 03 |
| ✔ Option to edit shipping address on order tracking page.✔ Validation for new address.✔ Confirmation message on address update. |
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| User Story No: 24 | Tasks: 04  | Priority: High |
| As a user, I want to view the estimated delivery time so that I can plan accordingly. |
| **BV:** 275  | CP: 03 |
| ✔ Estimated delivery time displayed on order tracking page.✔ Updates to delivery time if delays occur. |
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| User Story No: 25 | Tasks: 04  | Priority: High |
| As a user, I want to contact customer support regarding my order if I have any issues. |
| **BV:** 275  | CP: 03 |
| ✔ "Contact Support" link on order tracking page.✔ Integration with customer support system. |
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| User Story No: 26 | Tasks: 04  | Priority: High |
| As a user, I want to request a return if I receive a defective or incorrect product. |
| **BV:** 275  | CP: 03 |
| ✔ "Request Return" option on order details page.✔ Reason for return selection (e.g., defective, wrong item, size issue).✔ Option to upload supporting images/videos.✔ Confirmation message on return request.✔ Return request status tracking. |
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| User Story No: 27 | Tasks: 04  | Priority: High |
| As a user, I want to schedule a pickup for returned items so that I don’t have to visit a store. |
| **BV:** 275  | CP: 03 |
| ✔ Option to schedule pickup date and time.✔ Address selection for pickup (same as delivery or new address).✔ Confirmation of pickup schedule (date, time, address).✔ Integration with logistics provider for pickup scheduling.✔ Option to reschedule or cancel pickup. |
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| User Story No: 28 | Tasks: 04  | Priority: High |
| As a user, I want to get a refund after my return is approved so that I can receive my money back. |
| **BV:** 275  | CP: 03 |
| ✔ Refund initiated automatically after return approval.✔ Refund amount calculation (including any applicable deductions).✔ Notification to user about refund initiation.✔ Refund status tracking (e.g., pending, processed, completed).✔ Support for multiple refund methods (original payment method, store credit, etc.). |
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| User Story No: 29 | Tasks: 04  | Priority: High |
| As a user, I want to exchange a product instead of returning it so that I get the correct item. |
| **BV:** 275  | CP: 03 |
| ✔ "Request Exchange" option on order details page.✔ Option to select the replacement item (same product in different size/color, or different product).✔ Exchange request approval process.✔ Shipping of replacement item after receiving returned item.✔ Tracking of exchange order. |
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| User Story No: 30 | Tasks: 04  | Priority: High |
| As a user, I want to receive an email notification about my refund status so that I stay updated. |
| **BV:** 275  | CP: 03 |
| ✔ Automated email notifications about refund status changes (e.g., initiated, processed, completed).✔ Clear information about refund amount and method in the email. |
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| User Story No: 31 | Tasks: 04  | Priority: High |
| As a user, I want to leave a review for a product so that I can share my experience. |
| **BV:** 275  | CP: 03 |
| ✔ Text review input field.✔ Option to add images/videos to the review.✔ Review submission process.✔ Display of user's review on the product page. |
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| User Story No: 32 | Tasks: 04  | Priority: High |
| As a user, I want to rate a product with stars so that I can provide feedback. |
| **BV:** 275  | CP: 03 |
| ✔ Star rating system (e.g., 1 to 5 stars).✔ Clear visual representation of the rating.✔ Aggregation of ratings to display average rating. |
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| User Story No: 33 | Tasks: 04  | Priority: High |
| As a user, I want to view other users’ reviews before purchasing so that I can make an informed decision. |
| **BV:** 275  | CP: 03 |
| ✔ Display of reviews on product page.✔ Sorting and filtering options for reviews (e.g., by rating, date).✔ Clear indication of reviewer information (e.g., username, date). |
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| User Story No: 34 | Tasks: 04  | Priority: High |
| As a user, I want to report fake or inappropriate reviews so that the platform maintains quality. |
| **BV:** 275  | CP: 03 |
| ✔ "Report" button or link on reviews.✔ Reporting process with reason selection.✔ Moderation system for handling reported reviews. |
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| User Story No: 35 | Tasks: 04  | Priority: High |
| As a user, I want to ask questions about a product so that I can get more details before buying. |
| **BV:** 275  | CP: 03 |
| ✔ "Ask a Question" section on product page.✔ Question input field.✔ Display of questions and answers.✔ Notification to sellers about new questions. |
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| User Story No: 36 | Tasks: 04  | Priority: High |
| As an admin, I want to add new products to the catalog so that customers can purchase them. |
| **BV:** 275  | CP: 03 |
| ✔ Product creation form with required fields (name, description, price, images, etc.).✔ Product categories and tags management.✔ Product visibility and status control (e.g., active, inactive).✔ Confirmation message on successful product creation. |
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| User Story No: 37 | Tasks: 04  | Priority: High |
| As an admin, I want to manage product inventory so that out-of-stock products are updated. |
| **BV:** 275  | CP: 03 |
| ✔ Real-time inventory tracking.✔ Low stock alerts and notifications.✔ Option to update inventory levels manually or via bulk upload.✔ Automatic update of product status to "out of stock" when quantity reaches zero. |
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| User Story No: 38 | Tasks: 04  | Priority: High |
| As an admin, I want to process orders and manage deliveries so that customers receive their items on time. |
| **BV:** 275  | CP: 03 |
| ✔ Order management dashboard with order details and status.✔ Option to assign orders to delivery personnel.✔ Integration with delivery tracking system.✔ Delivery status updates and notifications. |
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| User Story No: 39 | Tasks: 04  | Priority: High |
| As a seller, I want to view sales analytics and reports so that I can track my business performance. |
| **BV:** 275  | CP: 03 |
| ✔ Sales dashboard with key metrics (revenue, orders, units sold, etc.).✔ Customizable reports with filters and date range selection.✔ Data visualization tools (charts, graphs) to display sales trends. |
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| User Story No: 40 | Tasks: 04  | Priority: High |
| As a seller, I want to respond to customer queries about my products so that I can provide better service. |
| **BV:** 275  | CP: 03 |
| ✔ Customer query management system.✔ Notification of new customer queries.✔ Option to respond to queries and track their status.✔ Integration with customer support system. |