Product Requirements Document (PRD) for Inventory Management System

1. Background

The Inventory Management System (IMS) is designed to help businesses track and manage their product inventory. It provides real-time insights into stock levels, enables order management, and generates reports for informed decision-making.

2. Key Outputs

- Product Stock Reports
- Low Stock Alerts
- Order Management Records
- Inventory Adjustment Logs
- Sales and Purchase Reports

3. User Action Mapping

User Action	System Response
Add new product	Save product details in the inventory database
Update product details	Modify and store updated information
Check stock levels	Display real-time product stock count
Place order	Update stock levels and record order data
Generate report	Provide downloadable sales and inventory reports
Set stock threshold	Trigger alerts when stock is below threshold

4. Process Flow

1. User logs into the IMS.
2. User adds or updates product information.
3. Stock levels are automatically adjusted with each sale or purchase.
4. Low stock alerts are triggered when thresholds are breached.
5. Users can generate detailed inventory reports.

5. Workflow

```
User → Inventory Dashboard → Product Management → Stock Update → Order
Management → Report Generation
```

6. Specifications

- **Frontend:** ReactJS (User interface for product and order management)
- **Backend:** Java Spring Boot (REST APIs for CRUD operations)

- **Database:** MySQL (Store product data, stock levels, and orders)
- **Authentication:** JWT
- **Notifications:** AWS SNS for low stock alerts
- **Reports:** PDF and CSV report generation using Apache POI

7. Functional Specifications

7.1 Product Management

- Add, update, and delete products
- Track stock levels with automated updates
- Categorize products

7.2 Order Management

- Place new orders
- Track order status (Pending, Completed, Canceled)
- Record sales and purchase transactions

7.3 Reporting

- Generate reports for inventory levels, sales, and purchases
- Filter reports by date range, product category, or order status

7.4 Notifications

- Send email and SMS notifications for low stock alerts

8. Conclusion

This Inventory Management System will help businesses efficiently manage their product inventory, reduce stockouts, and maintain accurate records. The real-time tracking and alerting mechanisms ensure better decision-making and operational efficiency.