**Requirements & Implementation Guide**

| **#** | **Description** | **Marks** | **How You Should Implement It** |
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| 1. | **Spring Boot** | 5 | Build the app with Spring Boot. Avoid any XML configurations. Use @SpringBootApplication and component-based configurations. |
| 2. | **Spring Security** | 10 | - Use **JWT-based authentication**. - Implement **Role-based authorization** (e.g., ADMIN, USER). - Proper **CORS configuration** in security config.  **Endpoints:** - POST /api/auth/register - POST /api/auth/login - POST /api/auth/change-password - POST /api/auth/forgot-password |
| 3. | **Spring AOP (Logging)** | 5 | - Log every API access using AOP. - Write logs to application.log. - Include: endpoint accessed, HTTP method, username (from Spring Security context), timestamp. - Example log: `2025-06-26 14:12:33 |
| 4. | **Spring JDBC** | 5 | - Use **Spring JDBC Template** for all database operations. - Avoid JPA or Hibernate. - Create DAO classes for CRUD operations. |
| 5. | **Layered Architecture** | 5 | Maintain a clear separation of layers: - controller - service - repository - model/entity - config - dto (optional, for request/response formats) |
| 6. | **Version Control** | 5 | - Use **GitHub (Private Repo)** - Minimum **25 commits**. - Maximum **5 commits/day**. - Push regularly (e.g., after major features, fixes). |
| 7. | **Features & REST API** | 60 | **Authentication Features:** - ✅ Login - ✅ Registration - ✅ Change Password - ✅ Forget Password (Send reset link via email) - ✅ Profile Update/View  **Domain-Specific Features:** (minimum 10) - POST /api/products → Add product - PUT /api/products/{id} → Update product info - GET /api/products → List all products - POST /api/sales → Record a sale - GET /api/sales → View sales history - GET /api/low-stock → Alert for low inventory - POST /api/restock → Restock items - GET /api/inventory-report → Inventory summary - GET /api/discounts → Ongoing promotions - POST /api/email-invoice → Send invoice to customer via email  **📧 JavaMailSender Integration:** - Use for password recovery & invoice emailing. |