Functional Requirements (FR)

1. **FR01 – Product Registration:**
   The system must allow the manager or employee to register new products in the inventory with their respective data (ID, name, category, price, and stock quantity).
2. **FR02 – Product Update:**
   The system must allow modifying the data of an existing product, including name, price, stock, or category.
3. **FR03 – Stock Control:**
   The system must automatically update the stock quantity when a sale is made or when products are added.
4. **FR04 – Low Stock Alert:**
   The system must display an alert when a product has fewer than four units available.
5. **FR05 – Product Availability Validation:**
   The system must verify if a product exists in the inventory before allowing a sale, displaying a message if the product is not available.
6. **FR06 – Search and Filter:**
   The system must allow searching for products by name, category, or ID from the employee menu.
7. **FR07 – Sales Recording:**
   The system must record all sales made, including the products sold, the date, and the employee responsible.
8. **FR08 – Report Generation:**
   The system must generate reports on sales, available products, and products with low stock.
9. **FR09 – User Management:**
   The system must allow the creation and authentication of accounts for managers and employees, including password validation.
10. **FR10 – Data Persistence:**
    The system must save and load inventory and sales information using JSON files to preserve data between executions.

⚙️ Non-Functional Requirements (NFR)

1. **NFR01 – Usability:**
   The system must provide a clear console interface with menus and descriptive messages to guide the user.
2. **NFR02 – Performance:**
   Search, load, and update operations on the inventory must be completed in less than 2 seconds.
3. **NFR03 – Security:**
   User passwords must be stored securely or validated before granting system access.
4. **NFR04 – Maintainability:**
   The code must be organized into separate classes following encapsulation and clean code principles.

5. **NFR05 – Portability:**
   The system must run on any environment with Java 8 or higher without additional configuration.
6. **NFR06 – Scalability:**
   The system must support adding new functionalities (such as supplier management or graphical reports) without altering the core structure.
7. **NFR07 – Reliability:**
   The system must prevent data loss by automatically saving after every major operation.
8. **NFR08 – Compatibility:**
   The JSON files generated must be readable and editable by any compatible text editor.
9. **NFR09 – Robustness:**
   The system must handle invalid user input (e.g., non-numeric values for price or stock) without crashing.
10. **NFR10 – Documentation:**
    The source code must include comments describing the purpose of each class and method to facilitate maintenance.