**Case Study: Warehouse Inventory Management System**

**Problem Statement:**

Design and implement a Warehouse Inventory Management System using Oracle SQL and PL/SQL. The system will be used to manage inventory items, warehouses, stock levels, and orders. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle inventory updates, order processing, and generating inventory reports.

**Requirements:**

1. **Inventory Item Management**:
   * Implement the functionality to add, update, delete, and search for inventory items.
   * Ensure that each item has attributes such as ITEM\_ID, NAME, DESCRIPTION, PRICE, STOCK\_QUANTITY, and WAREHOUSE\_ID.
2. **Warehouse Management**:
   * Implement the functionality to add, update, delete, and search for warehouses.
   * Ensure that each warehouse has attributes such as WAREHOUSE\_ID, NAME, LOCATION, and CAPACITY.
3. **Stock Management**:
   * Implement the functionality to track stock levels for each item in each warehouse.
   * Ensure that each stock record has attributes such as STOCK\_ID, ITEM\_ID, WAREHOUSE\_ID, QUANTITY, and LAST\_UPDATED.
4. **Order Management**:
   * Implement the functionality to process orders for inventory items.
   * Ensure that each order has attributes such as ORDER\_ID, ITEM\_ID, WAREHOUSE\_ID, QUANTITY, ORDER\_DATE, and STATUS.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Items, Warehouses, Stock, and Orders tables with the appropriate fields and constraints.
   * Define primary keys and foreign keys to maintain data integrity.
2. **Populate the Database with Sample Data**:
   * Insert sample records into the Items, Warehouses, Stock, and Orders tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle inventory updates. The procedure should update the stock quantity for a given item in a given warehouse.
   * Create a procedure to handle order processing. The procedure should update the stock quantity, create an order record, and update the order status.
   * Create a procedure to generate inventory reports, including details such as item information, warehouse information, stock levels, and order history.

**Expected Outcomes:**

1. **Items Table**:
   * Contains all information about the inventory items in the system.
2. **Warehouses Table**:
   * Contains details of all warehouses storing inventory items.
3. **Stock Table**:
   * Tracks the stock levels of inventory items in each warehouse.
4. **Orders Table**:
   * Tracks the order history of inventory items, including order details and status.
5. **PL/SQL Procedures**:
   * Efficiently manage inventory updates, order processing, and generating inventory reports, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Items, Warehouses, Stock, and Orders tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to handle inventory updates, order processing, and generate inventory reports.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **Items Table**:
   * **ITEM\_ID**: Number, Primary Key
   * **NAME**: Varchar2(100)
   * **DESCRIPTION**: Varchar2(255)
   * **PRICE**: Number
   * **STOCK\_QUANTITY**: Number
   * **WAREHOUSE\_ID**: Number, Foreign Key References Warehouses(WAREHOUSE\_ID)
2. **Warehouses Table**:
   * **WAREHOUSE\_ID**: Number, Primary Key
   * **NAME**: Varchar2(100)
   * **LOCATION**: Varchar2(255)
   * **CAPACITY**: Number
3. **Stock Table**:
   * **STOCK\_ID**: Number, Primary Key
   * **ITEM\_ID**: Number, Foreign Key References Items(ITEM\_ID)
   * **WAREHOUSE\_ID**: Number, Foreign Key References Warehouses(WAREHOUSE\_ID)
   * **QUANTITY**: Number
   * **LAST\_UPDATED**: Date
4. **Orders Table**:
   * **ORDER\_ID**: Number, Primary Key
   * **ITEM\_ID**: Number, Foreign Key References Items(ITEM\_ID)
   * **WAREHOUSE\_ID**: Number, Foreign Key References Warehouses(WAREHOUSE\_ID)
   * **QUANTITY**: Number
   * **ORDER\_DATE**: Date
   * **STATUS**: Varchar2(20)

**Case Study Task:**

* **Design**: Create the database schema as provided.
* **Implement**: Insert sample data into the tables.
* **Develop**: Write PL/SQL procedures for handling inventory updates, order processing, and generating inventory reports.
* **Test**: Test the procedures with various scenarios (e.g., updating inventory, processing orders, generating reports, ensuring proper updates).