**Case Study: Inventory Management System**

**Problem Statement:**

Design and implement an Inventory Management System using Oracle SQL and PL/SQL. The system will be used to manage products, suppliers, and product orders. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle product restocking and order processing.

**Requirements:**

1. **Product Management**:
   * Implement the functionality to add, update, delete, and search for products.
   * Ensure that each product has attributes such as PRODUCT\_ID, PRODUCT\_NAME, CATEGORY, PRICE, and STOCK\_QUANTITY.
2. **Supplier Management**:
   * Implement the functionality to add, update, delete, and search for suppliers.
   * Ensure that each supplier has attributes such as SUPPLIER\_ID, SUPPLIER\_NAME, CONTACT\_NAME, CONTACT\_PHONE, and ADDRESS.
3. **Order Management**:
   * Implement the functionality to create and process product orders.
   * Track orders with attributes such as ORDER\_ID, PRODUCT\_ID, SUPPLIER\_ID, ORDER\_DATE, QUANTITY\_ORDERED, and ORDER\_STATUS.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Products, Suppliers, 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 Products, Suppliers, and Orders tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to restock a product. The procedure should update the stock quantity in the Products table based on the quantity ordered and mark the order as processed in the Orders table.
   * Create a procedure to process an order. The procedure should insert a new order record into the Orders table and decrement the stock quantity of the product in the Products table if the product is available.

**Expected Outcomes:**

1. **Products Table**:
   * Contains all information about the products available in the inventory.
2. **Suppliers Table**:
   * Contains details of all suppliers.
3. **Orders Table**:
   * Tracks the orders placed for products, including order dates and statuses.
4. **PL/SQL Procedures**:
   * Efficiently manage product restocking and order processing, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Products, Suppliers, and Orders tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to restock products and process orders.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **Products Table**:
   * **PRODUCT\_ID**: Number, Primary Key
   * **PRODUCT\_NAME**: Varchar2(100)
   * **CATEGORY**: Varchar2(50)
   * **PRICE**: Number
   * **STOCK\_QUANTITY**: Number
2. **Suppliers Table**:
   * **SUPPLIER\_ID**: Number, Primary Key
   * **SUPPLIER\_NAME**: Varchar2(100)
   * **CONTACT\_NAME**: Varchar2(100)
   * **CONTACT\_PHONE**: Varchar2(15)
   * **ADDRESS**: Varchar2(200)
3. **Orders Table**:
   * **ORDER\_ID**: Number, Primary Key
   * **PRODUCT\_ID**: Number, Foreign Key References Products(PRODUCT\_ID)
   * **SUPPLIER\_ID**: Number, Foreign Key References Suppliers(SUPPLIER\_ID)
   * **ORDER\_DATE**: Date
   * **QUANTITY\_ORDERED**: Number
   * **ORDER\_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 restocking products and processing orders.
* **Test**: Test the procedures with various scenarios (e.g., restocking a product, processing an order, ensuring proper stock updates).