**Case Study: E-Commerce Platform Management System**

**Problem Statement:**

Design and implement an E-Commerce Platform Management System using Oracle SQL and PL/SQL. The system will be used to manage products, orders, customers, and inventory for an e-commerce platform. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle product management, order processing, and inventory tracking.

**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, NAME, DESCRIPTION, PRICE, and AVAILABLE\_QUANTITY.
2. **Order Processing**:
   * Implement the functionality to process customer orders.
   * Ensure that each order has attributes such as ORDER\_ID, CUSTOMER\_ID, PRODUCT\_ID, QUANTITY, ORDER\_DATE, and STATUS.
3. **Customer Management**:
   * Implement the functionality to add, update, delete, and search for customer information.
   * Ensure that each customer record has attributes such as CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME, EMAIL, and PHONE\_NUMBER.
4. **Inventory Tracking**:
   * Implement the functionality to track product inventory.
   * Ensure that each product record has attributes such as PRODUCT\_ID, NAME, DESCRIPTION, PRICE, and AVAILABLE\_QUANTITY.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Products, Orders, Customers, and Inventory 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, Customers, and Inventory tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle product management. The procedure should insert, update, and delete product records.
   * Create a procedure to process customer orders. The procedure should insert order records, update inventory quantities, and update order status.
   * Create a procedure to manage customer information. The procedure should insert, update, and delete customer records.

**Expected Outcomes:**

1. **Products Table**:
   * Contains all information about the products available for sale.
2. **Orders Table**:
   * Tracks the orders placed by customers.
3. **Customers Table**:
   * Stores customer information for the e-commerce platform.
4. **Inventory Table**:
   * Tracks the inventory of products available for sale.
5. **PL/SQL Procedures**:
   * Efficiently manage products, customer orders, customer information, and inventory, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Products, Orders, Customers, and Inventory tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to handle product management, order processing, customer management, and inventory tracking.
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
   * **NAME**: Varchar2(100)
   * **DESCRIPTION**: Clob
   * **PRICE**: Number
   * **AVAILABLE\_QUANTITY**: Number
2. **Orders Table**:
   * **ORDER\_ID**: Number, Primary Key
   * **CUSTOMER\_ID**: Number, Foreign Key References Customers(CUSTOMER\_ID)
   * **PRODUCT\_ID**: Number, Foreign Key References Products(PRODUCT\_ID)
   * **QUANTITY**: Number
   * **ORDER\_DATE**: Date
   * **STATUS**: Varchar2(50)
3. **Customers Table**:
   * **CUSTOMER\_ID**: Number, Primary Key
   * **FIRST\_NAME**: Varchar2(50)
   * **LAST\_NAME**: Varchar2(50)
   * **EMAIL**: Varchar2(100)
   * **PHONE\_NUMBER**: Varchar2(15)
4. **Inventory Table**:
   * **PRODUCT\_ID**: Number, Primary Key
   * **NAME**: Varchar2(100)
   * **DESCRIPTION**: Clob
   * **PRICE**: Number
   * **AVAILABLE\_QUANTITY**: Number

**Case Study Task:**

* **Design**: Create the database schema as provided.
* **Implement**: Insert sample data into the Products, Customers, and Inventory tables.
* **Develop**: Write PL/SQL procedures for handling product management, order processing, customer management, and inventory tracking.
* **Test**: Test the procedures with various scenarios (e.g., managing products, processing orders, managing customers, tracking inventory, ensuring proper updates).