**Case Study: Product Inventory Tracking System**

**Problem Statement:**

Design and implement a Product Inventory Tracking System using Oracle SQL and PL/SQL. The system will be used to track products, suppliers, purchases, and stock levels. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle product purchases, stock updates, and generating inventory reports.

**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, STOCK\_QUANTITY, and SUPPLIER\_ID.
2. **Supplier Management**:
   * Implement the functionality to add, update, delete, and search for suppliers.
   * Ensure that each supplier has attributes such as SUPPLIER\_ID, NAME, CONTACT\_PERSON, PHONE\_NUMBER, and EMAIL.
3. **Purchase Management**:
   * Implement the functionality to record product purchases and update stock levels.
   * Ensure that each purchase has attributes such as PURCHASE\_ID, PRODUCT\_ID, SUPPLIER\_ID, PURCHASE\_DATE, QUANTITY, and TOTAL\_PRICE.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Products, Suppliers, and Purchases 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 Purchases tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle product purchases. The procedure should insert a new purchase record, update the stock quantity, and calculate the total price.
   * Create a procedure to handle stock updates. The procedure should update the stock quantity for a given product.
   * Create a procedure to generate inventory reports, including details such as product information, supplier information, purchase date, quantity, and total price.

**Expected Outcomes:**

1. **Products Table**:
   * Contains all information about the products in the inventory.
2. **Suppliers Table**:
   * Contains details of all suppliers providing products to the inventory.
3. **Purchases Table**:
   * Tracks the purchase history, including purchase details and total price.
4. **PL/SQL Procedures**:
   * Efficiently manage product purchases, stock updates, and generating inventory reports, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Products, Suppliers, and Purchases tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to handle purchases, update stock, 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. **Products Table**:
   * **PRODUCT\_ID**: Number, Primary Key
   * **NAME**: Varchar2(100)
   * **DESCRIPTION**: Varchar2(255)
   * **PRICE**: Number
   * **STOCK\_QUANTITY**: Number
   * **SUPPLIER\_ID**: Number, Foreign Key References Suppliers(SUPPLIER\_ID)
2. **Suppliers Table**:
   * **SUPPLIER\_ID**: Number, Primary Key
   * **NAME**: Varchar2(100)
   * **CONTACT\_PERSON**: Varchar2(50)
   * **PHONE\_NUMBER**: Varchar2(15)
   * **EMAIL**: Varchar2(100)
3. **Purchases Table**:
   * **PURCHASE\_ID**: Number, Primary Key
   * **PRODUCT\_ID**: Number, Foreign Key References Products(PRODUCT\_ID)
   * **SUPPLIER\_ID**: Number, Foreign Key References Suppliers(SUPPLIER\_ID)
   * **PURCHASE\_DATE**: Date
   * **QUANTITY**: Number
   * **TOTAL\_PRICE**: Number

**Case Study Task:**

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