**Case Study: Customer Relationship Management (CRM) System**

**Problem Statement:**

Design and implement a Customer Relationship Management (CRM) System using Oracle SQL and PL/SQL. The system will be used to manage customer information, track interactions, and manage sales opportunities. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle customer management, interaction tracking, and sales opportunity management.

**Requirements:**

1. **Customer Management**:
   * Implement the functionality to add, update, delete, and search for customers.
   * Ensure that each customer has attributes such as CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME, EMAIL, PHONE\_NUMBER, and ADDRESS.
2. **Interaction Tracking**:
   * Implement the functionality to manage interactions with customers.
   * Ensure that each interaction has attributes such as INTERACTION\_ID, CUSTOMER\_ID, DATE, TYPE, NOTES, and EMPLOYEE\_ID.
3. **Sales Opportunity Management**:
   * Implement the functionality to manage sales opportunities.
   * Ensure that each sales opportunity has attributes such as OPPORTUNITY\_ID, CUSTOMER\_ID, PRODUCT\_ID, STAGE, VALUE, and CLOSE\_DATE.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Customers, Interactions, and Opportunities 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 Customers, Interactions, and Opportunities tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle customer management. The procedure should insert, update, and delete customer records.
   * Create a procedure to manage interactions. The procedure should insert new interactions, update existing ones, and delete interactions.
   * Create a procedure to manage sales opportunities. The procedure should insert new opportunities, update existing ones, and change the stage of opportunities.

**Expected Outcomes:**

1. **Customers Table**:
   * Contains all information about the customers managed by the company.
2. **Interactions Table**:
   * Stores interaction details with each customer.
3. **Opportunities Table**:
   * Tracks the sales opportunities, including their current stage and potential value.
4. **PL/SQL Procedures**:
   * Efficiently manage customers, interactions, and sales opportunities, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Customers, Interactions, and Opportunities tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to handle customer management, interaction tracking, and sales opportunity management.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **Customers Table**:
   * **CUSTOMER\_ID**: Number, Primary Key
   * **FIRST\_NAME**: Varchar2(50)
   * **LAST\_NAME**: Varchar2(50)
   * **EMAIL**: Varchar2(100)
   * **PHONE\_NUMBER**: Varchar2(15)
   * **ADDRESS**: Varchar2(255)
2. **Interactions Table**:
   * **INTERACTION\_ID**: Number, Primary Key
   * **CUSTOMER\_ID**: Number, Foreign Key References Customers(CUSTOMER\_ID)
   * **DATE**: Date
   * **TYPE**: Varchar2(50)
   * **NOTES**: Varchar2(500)
   * **EMPLOYEE\_ID**: Number
3. **Opportunities Table**:
   * **OPPORTUNITY\_ID**: Number, Primary Key
   * **CUSTOMER\_ID**: Number, Foreign Key References Customers(CUSTOMER\_ID)
   * **PRODUCT\_ID**: Number
   * **STAGE**: Varchar2(50)
   * **VALUE**: Number
   * **CLOSE\_DATE**: Date

**Case Study Task:**

* **Design**: Create the database schema as provided.
* **Implement**: Insert sample data into the Customers, Interactions, and Opportunities tables.
* **Develop**: Write PL/SQL procedures for handling customer management, interaction tracking, and sales opportunity management.
* **Test**: Test the procedures with various scenarios (e.g., adding new customers, logging interactions, managing sales opportunities, ensuring proper updates).