**Case Study: Employee Attendance Management System**

**Problem Statement:**

Design and implement an Employee Attendance Management System using Oracle SQL and PL/SQL. The system will be used to manage employees, track their attendance, and generate attendance reports. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle attendance marking, leave requests, and generating monthly attendance summaries.

**Requirements:**

1. **Employee Management**:
   * Implement the functionality to add, update, delete, and search for employees.
   * Ensure that each employee has attributes such as EMPLOYEE\_ID, FIRST\_NAME, LAST\_NAME, DEPARTMENT, POSITION, and JOIN\_DATE.
2. **Attendance Management**:
   * Implement the functionality to mark daily attendance for employees.
   * Track attendance with attributes such as ATTENDANCE\_ID, EMPLOYEE\_ID, ATTENDANCE\_DATE, STATUS, and REMARKS.
3. **Leave Management**:
   * Implement the functionality to request and manage leaves.
   * Track leave requests with attributes such as LEAVE\_ID, EMPLOYEE\_ID, LEAVE\_TYPE, START\_DATE, END\_DATE, and STATUS.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Employees, Attendance, and Leaves 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 Employees, Attendance, and Leaves tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to mark daily attendance for employees. The procedure should insert a new attendance record and update the status accordingly.
   * Create a procedure to request leave. The procedure should insert a new leave record and update the employee's leave status.
   * Create a procedure to generate monthly attendance summaries, including total days present, absent, and on leave.

**Expected Outcomes:**

1. **Employees Table**:
   * Contains all information about the employees in the organization.
2. **Attendance Table**:
   * Tracks the daily attendance of employees, including attendance dates and statuses.
3. **Leaves Table**:
   * Tracks leave requests and statuses for employees.
4. **PL/SQL Procedures**:
   * Efficiently manage attendance marking, leave requests, and generating attendance summaries, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Employees, Attendance, and Leaves tables.
2. SQL scripts to insert sample data into the tables.
3. PL/SQL scripts for the procedures to mark attendance, request leave, and generate attendance summaries.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **Employees Table**:
   * **EMPLOYEE\_ID**: Number, Primary Key
   * **FIRST\_NAME**: Varchar2(50)
   * **LAST\_NAME**: Varchar2(50)
   * **DEPARTMENT**: Varchar2(50)
   * **POSITION**: Varchar2(50)
   * **JOIN\_DATE**: Date
2. **Attendance Table**:
   * **ATTENDANCE\_ID**: Number, Primary Key
   * **EMPLOYEE\_ID**: Number, Foreign Key References Employees(EMPLOYEE\_ID)
   * **ATTENDANCE\_DATE**: Date
   * **STATUS**: Varchar2(20)
   * **REMARKS**: Varchar2(200)
3. **Leaves Table**:
   * **LEAVE\_ID**: Number, Primary Key
   * **EMPLOYEE\_ID**: Number, Foreign Key References Employees(EMPLOYEE\_ID)
   * **LEAVE\_TYPE**: Varchar2(20)
   * **START\_DATE**: Date
   * **END\_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 marking attendance, requesting leave, and generating attendance summaries.
* **Test**: Test the procedures with various scenarios (e.g., marking attendance, requesting leave, generating summaries, ensuring proper updates).