**Case Study: Insurance Claims Management System**

**Problem Statement:**

Design and implement an Insurance Claims Management System using Oracle SQL and PL/SQL. The system will be used to manage insurance claims, process claims, and generate reports. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle claim processing, status tracking, and report generation.

**Requirements:**

1. **Claim Management**:
   * Implement the functionality to add, update, delete, and search for insurance claims.
   * Ensure that each claim has attributes such as CLAIM\_ID, POLICY\_NUMBER, CLAIM\_DATE, CLAIM\_AMOUNT, and STATUS.
2. **Claim Processing**:
   * Implement the functionality to process claims and update their status.
   * Ensure that each processing record has attributes such as PROCESSING\_ID, CLAIM\_ID, PROCESSING\_DATE, PROCESSING\_NOTES, and PROCESSING\_STATUS.
3. **Report Generation**:
   * Implement the functionality to generate reports on claims processed.
   * Reports should include details such as total claims processed, average claim amount, and claims status breakdown.

**Tasks:**

1. **Design the Database Schema**:
   * Create the InsuranceClaims, ClaimProcessings, and ClaimsReports 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 InsuranceClaims and ClaimProcessings tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle insurance claim management. The procedure should insert, update, and delete claim records.
   * Create a procedure to process claims. The procedure should insert processing records and update claim status.
   * Create a procedure to generate claims reports. The procedure should aggregate data to provide insights into claims processed.

**Expected Outcomes:**

1. **InsuranceClaims Table**:
   * Contains all information about the insurance claims received.
2. **ClaimProcessings Table**:
   * Tracks the processing of each insurance claim.
3. **ClaimsReports Table**:
   * Stores the generated claims reports.
4. **PL/SQL Procedures**:
   * Efficiently manage insurance claims, process claims, and generate reports, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the InsuranceClaims, ClaimProcessings, and ClaimsReports tables.
2. SQL scripts to insert sample data into the InsuranceClaims and ClaimProcessings tables.
3. PL/SQL scripts for the procedures to handle insurance claim management, claim processing, and generate claims reports.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **InsuranceClaims Table**:
   * **CLAIM\_ID**: Number, Primary Key
   * **POLICY\_NUMBER**: Varchar2(50)
   * **CLAIM\_DATE**: Date
   * **CLAIM\_AMOUNT**: Number
   * **STATUS**: Varchar2(50)
2. **ClaimProcessings Table**:
   * **PROCESSING\_ID**: Number, Primary Key
   * **CLAIM\_ID**: Number, Foreign Key References InsuranceClaims(CLAIM\_ID)
   * **PROCESSING\_DATE**: Date
   * **PROCESSING\_NOTES**: Varchar2(255)
   * **PROCESSING\_STATUS**: Varchar2(50)
3. **ClaimsReports Table**:
   * **REPORT\_ID**: Number, Primary Key
   * **REPORT\_DATE**: Date
   * **TOTAL\_CLAIMS**: Number
   * **AVERAGE\_CLAIM\_AMOUNT**: Number
   * **CLAIMS\_STATUS\_BREAKDOWN**: Clob

**Case Study Task:**

* **Design**: Create the database schema as provided.
* **Implement**: Insert sample data into the InsuranceClaims and ClaimProcessings tables.
* **Develop**: Write PL/SQL procedures for handling insurance claim management, claim processing, and generating claims reports.
* **Test**: Test the procedures with various scenarios (e.g., managing claims, processing claims, generating reports, ensuring proper updates).