**Case Study: Reservation Management System for Railway and Airlines**

**Problem Statement:**

Design and implement a Reservation Management System for Railway and Airlines using Oracle SQL and PL/SQL. The system will be used to manage reservations, process booking requests, and generate travel reports. Your task is to create the necessary database schema, populate the database with sample data, and develop PL/SQL procedures to handle reservation management, booking processing, and report generation.

**Requirements:**

1. **Reservation Management**:
   * Implement the functionality to add, update, delete, and search for reservations.
   * Ensure that each reservation has attributes such as RESERVATION\_ID, CUSTOMER\_ID, TRANSPORT\_TYPE, BOOKING\_DATE, and STATUS.
2. **Booking Processing**:
   * Implement the functionality to process booking requests and update reservation status.
   * Ensure that each processing record has attributes such as PROCESSING\_ID, RESERVATION\_ID, PROCESSING\_DATE, DECISION, and REMARKS.
3. **Report Generation**:
   * Implement the functionality to generate travel reports.
   * Reports should include details such as total reservations, confirmed bookings, cancelled bookings, and pending requests.

**Tasks:**

1. **Design the Database Schema**:
   * Create the Reservations, BookingProcessings, and TravelReports 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 Reservations and BookingProcessings tables to facilitate testing of the system.
3. **Develop PL/SQL Procedures**:
   * Create a procedure to handle reservation management. The procedure should insert, update, and delete reservation records.
   * Create a procedure to process booking requests. The procedure should insert processing records and update reservation status.
   * Create a procedure to generate travel reports. The procedure should aggregate data to provide insights into reservation status.

**Expected Outcomes:**

1. **Reservations Table**:
   * Contains all information about the reservations made for railway and airline transport.
2. **BookingProcessings Table**:
   * Tracks the processing of each booking request.
3. **TravelReports Table**:
   * Stores the generated travel reports.
4. **PL/SQL Procedures**:
   * Efficiently manage reservations, process bookings, and generate reports, maintaining accurate records in the database.

**Deliverables:**

1. SQL scripts to create the Reservations, BookingProcessings, and TravelReports tables.
2. SQL scripts to insert sample data into the Reservations and BookingProcessings tables.
3. PL/SQL scripts for the procedures to handle reservation management, booking processing, and generate travel reports.
4. Documentation explaining how to set up and use the system, including how to run the PL/SQL procedures.

**Database Schema:**

1. **Reservations Table**:
   * **RESERVATION\_ID**: Number, Primary Key
   * **CUSTOMER\_ID**: Number
   * **TRANSPORT\_TYPE**: Varchar2(50)
   * **BOOKING\_DATE**: Date
   * **STATUS**: Varchar2(50)
2. **BookingProcessings Table**:
   * **PROCESSING\_ID**: Number, Primary Key
   * **RESERVATION\_ID**: Number, Foreign Key References Reservations(RESERVATION\_ID)
   * **PROCESSING\_DATE**: Date
   * **DECISION**: Varchar2(50)
   * **REMARKS**: Varchar2(255)
3. **TravelReports Table**:
   * **REPORT\_ID**: Number, Primary Key
   * **REPORT\_DATE**: Date
   * **TOTAL\_RESERVATIONS**: Number
   * **CONFIRMED\_BOOKINGS**: Number
   * **CANCELLED\_BOOKINGS**: Number
   * **PENDING\_REQUESTS**: Number

**Case Study Task:**

* **Design**: Create the database schema as provided.
* **Implement**: Insert sample data into the Reservations and BookingProcessings tables.
* **Develop**: Write PL/SQL procedures for handling reservation management, booking processing, and generating travel reports.
* **Test**: Test the procedures with various scenarios (e.g., managing reservations, processing bookings, generating reports, ensuring proper updates).