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**ĐỀ TÀI BÁN VÉ CHUYẾN BAY**

MÔN HỌC NHẬP MÔN CÔNG NGHỆ PHẦN MỀM

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Tp. Hồ Chí Minh, tháng 5/2022

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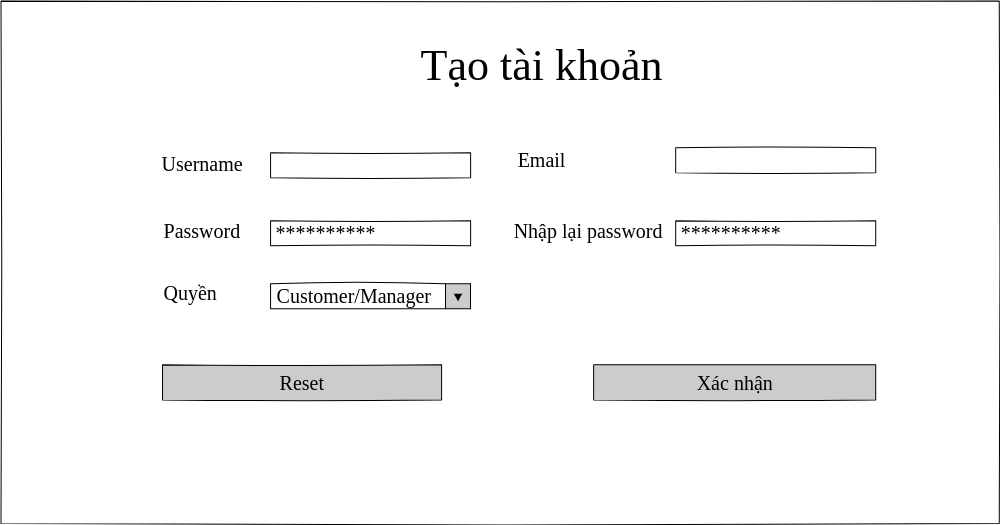
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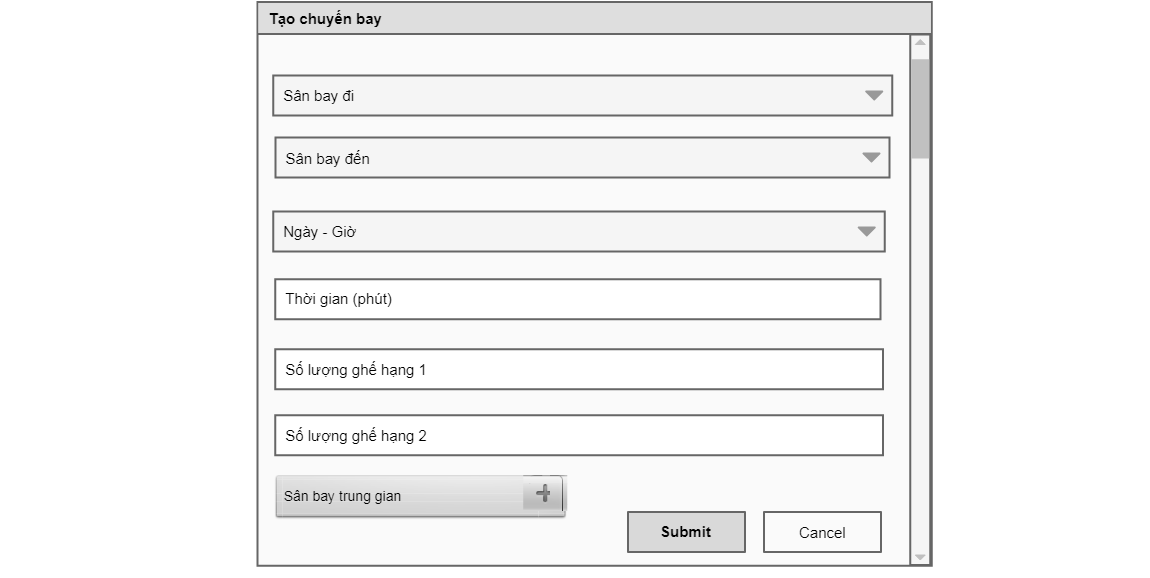
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# **Chương 2 Requirement Analysis**

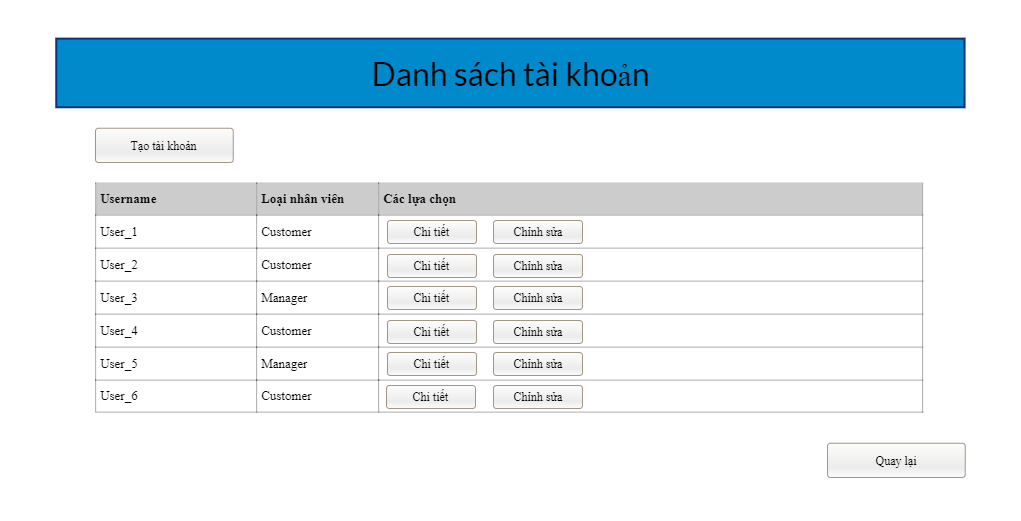
## **2.1 Wireframe**



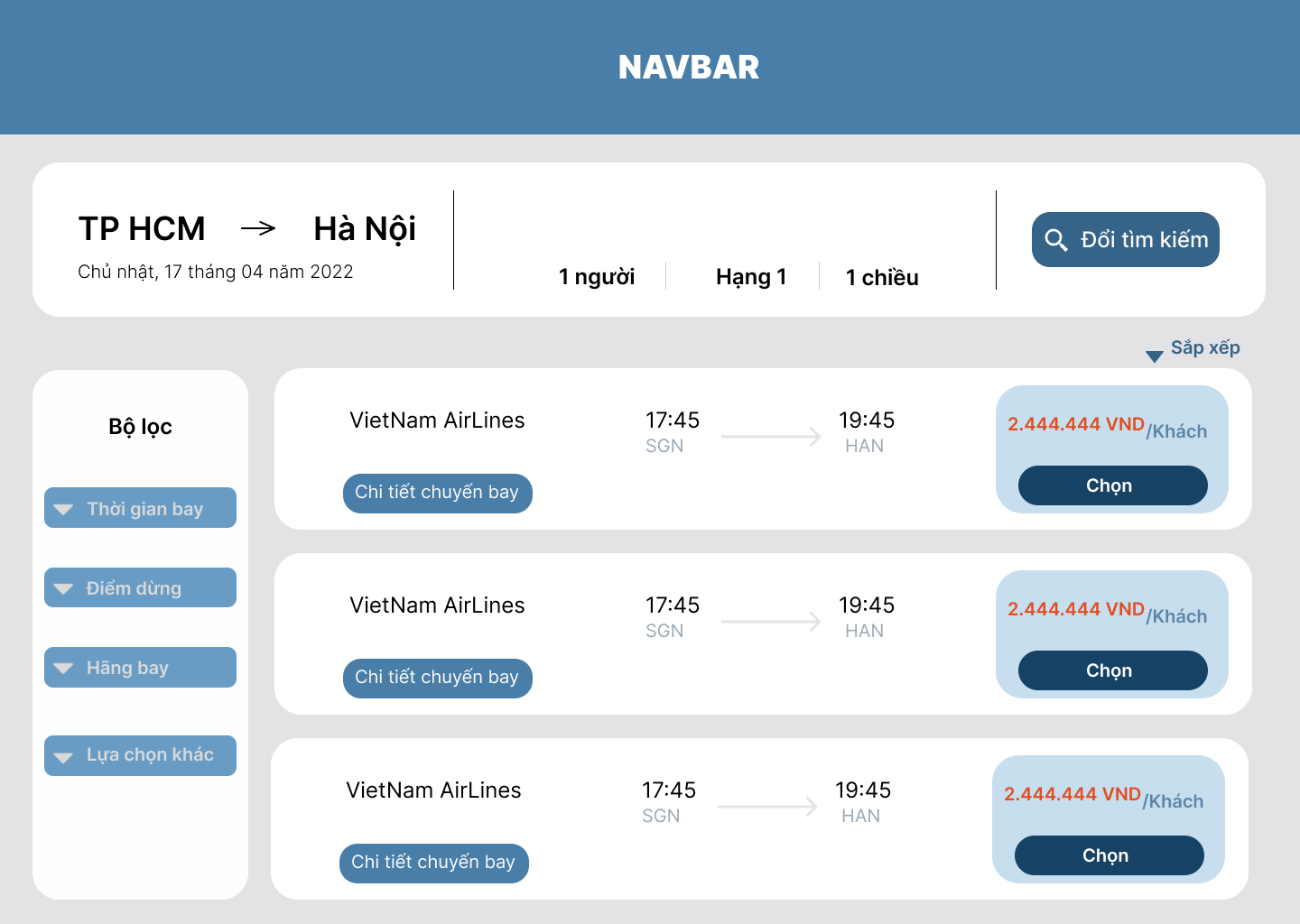
**Hình 2.1: Wireframe màn hình tạo tài khoản mới của Admin**



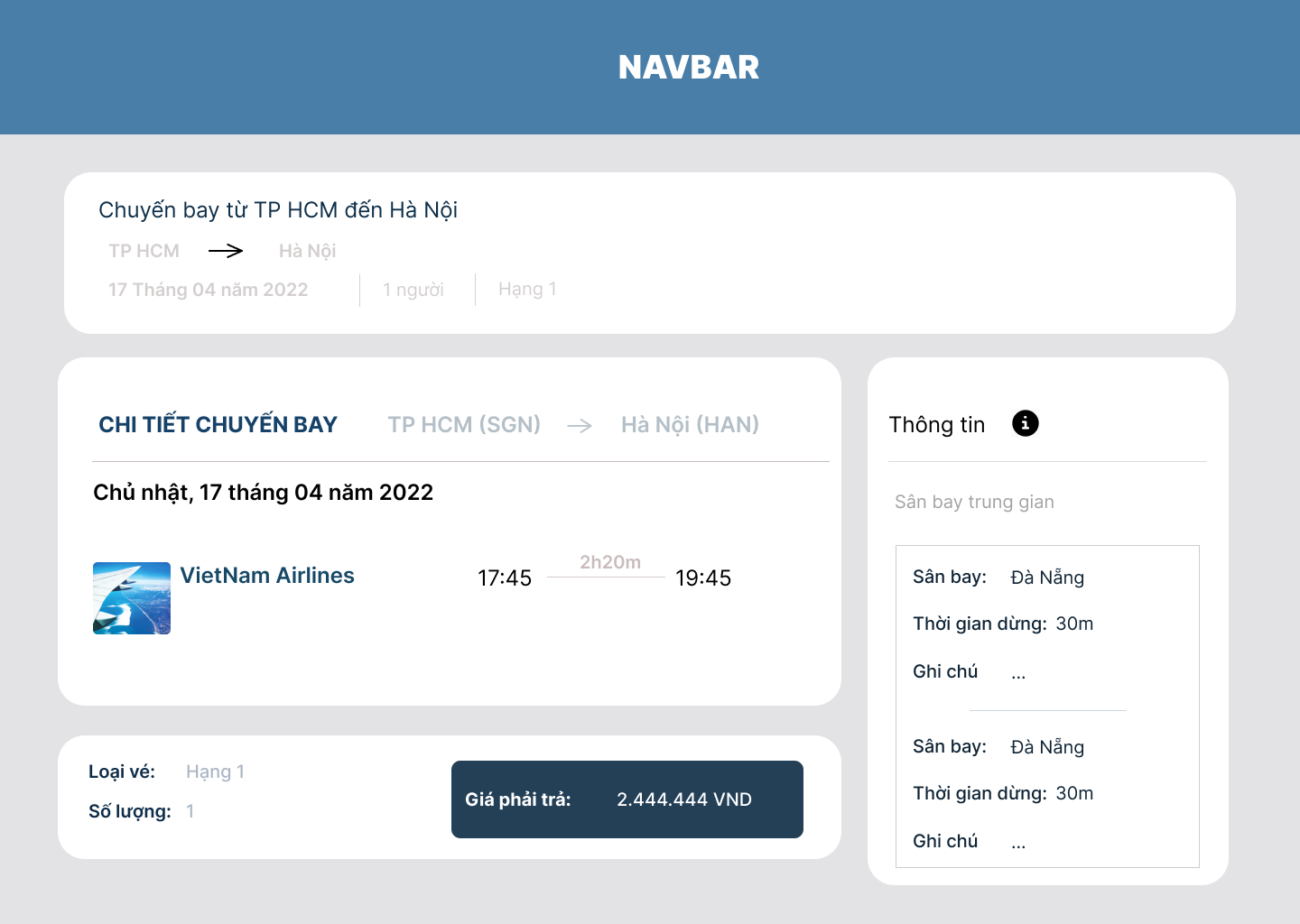
**Hình 2.2: Wireframe màn hình tạo chuyến bay**



**Hình 2.3: Wireframe màn hình Xem danh sách tài khoản.**

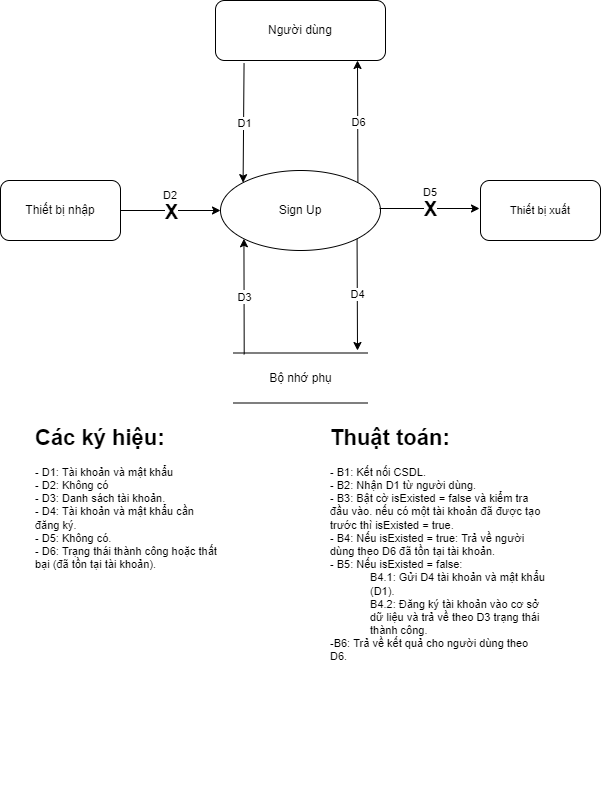


**Hình 2.4: Wireframe xem danh sách chuyến bay (khách hàng)**

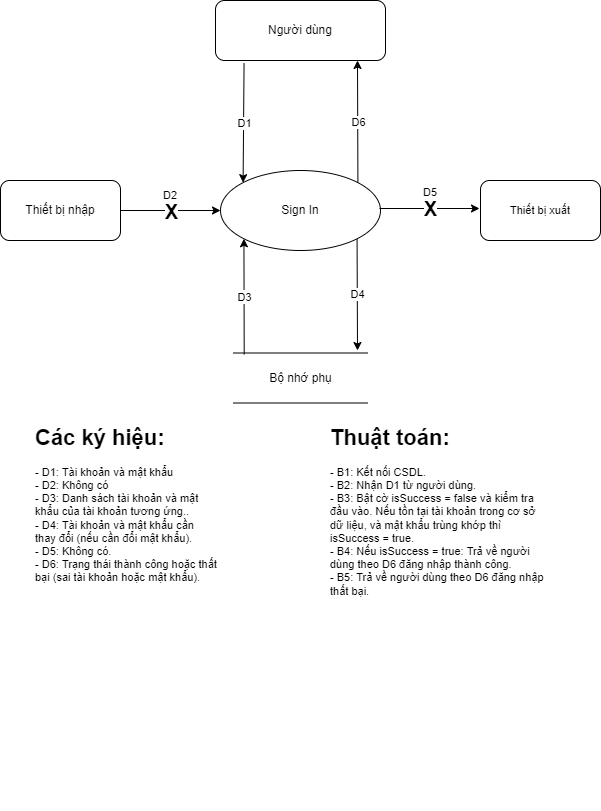


**Hình 2.5: Wireframe màn hình xem chi tiết chuyến bay**

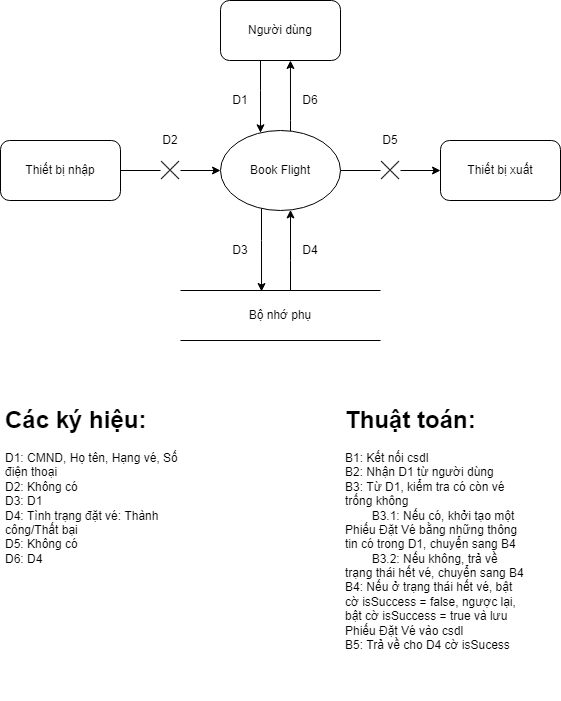
## **2.2 Data Flow Diagram**



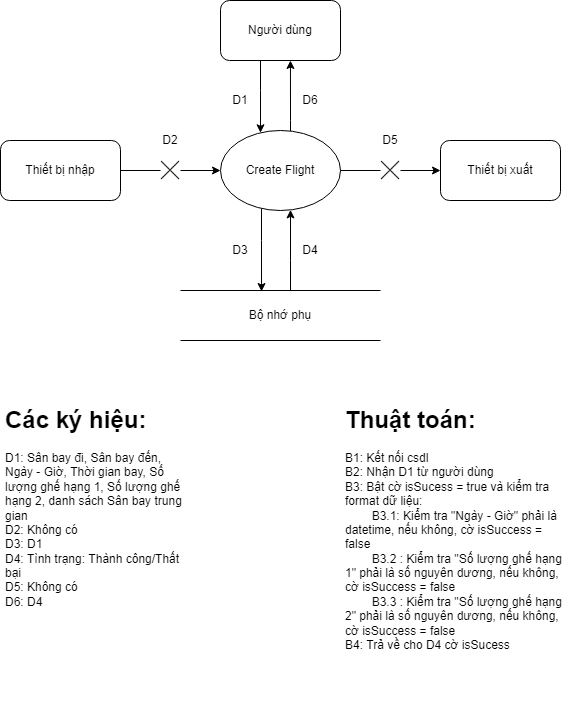
**Hình 2.6: Sơ đồ DFD tổng quát cho màn hình Đăng ký tài khoản**



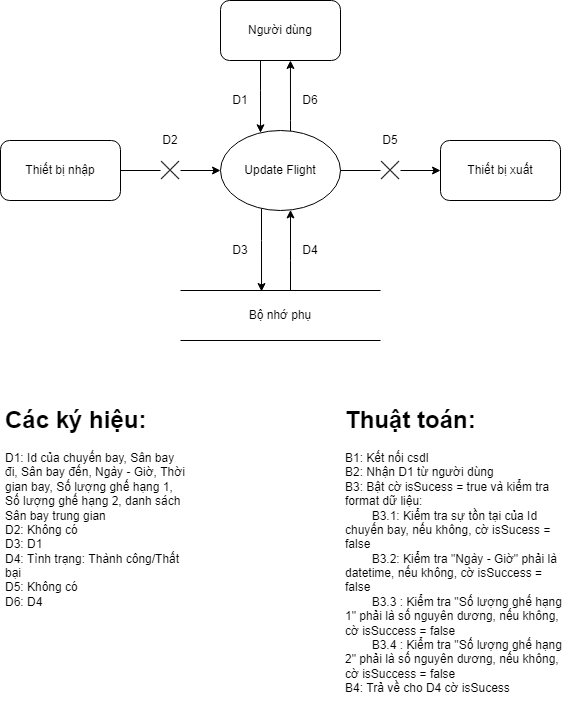
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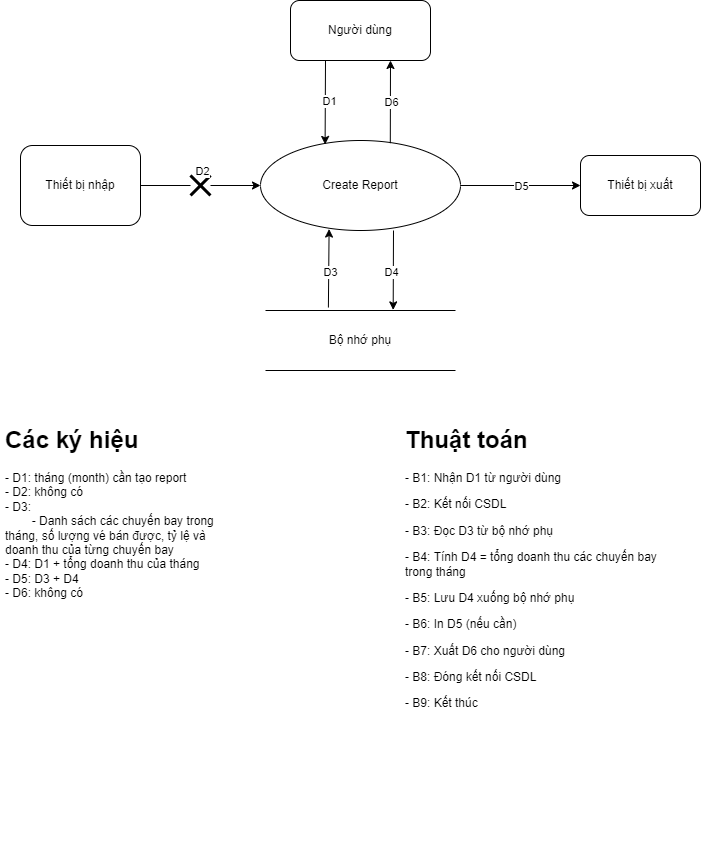
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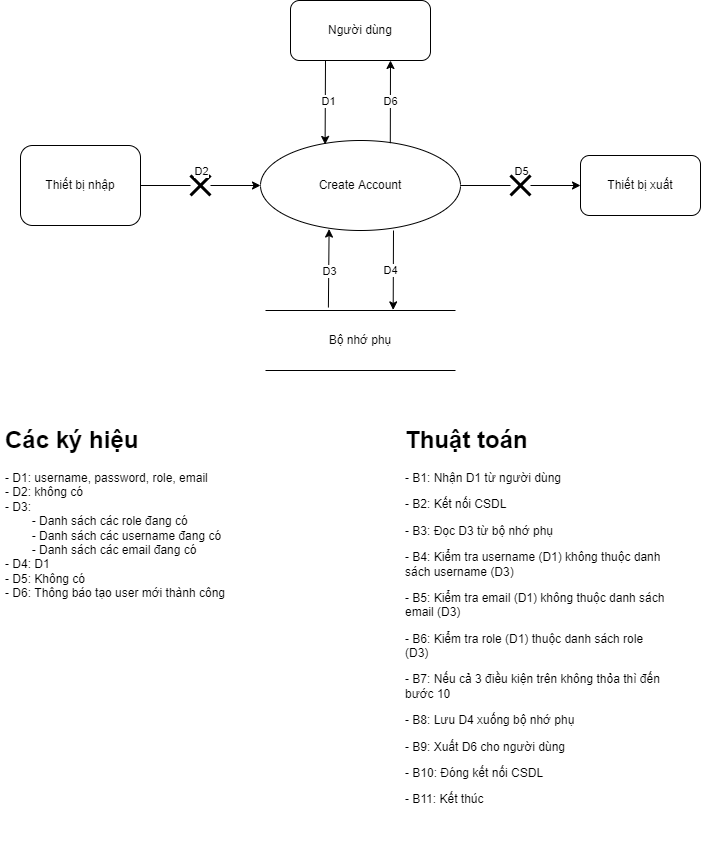
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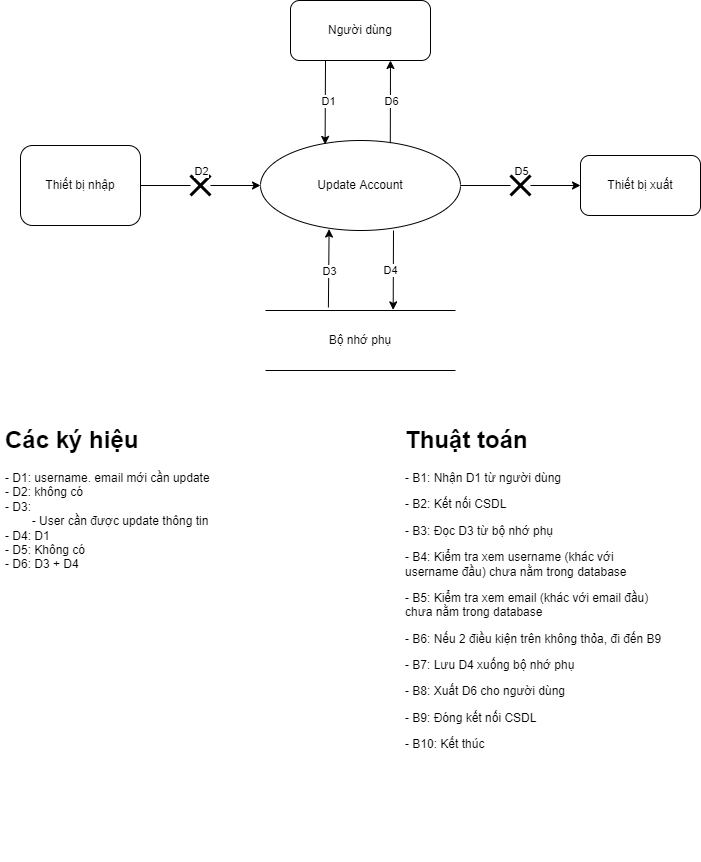
**Hình 2.10: Sơ đồ DFD tổng quát cho màn hình Cập nhật thông tin chuyến bay**



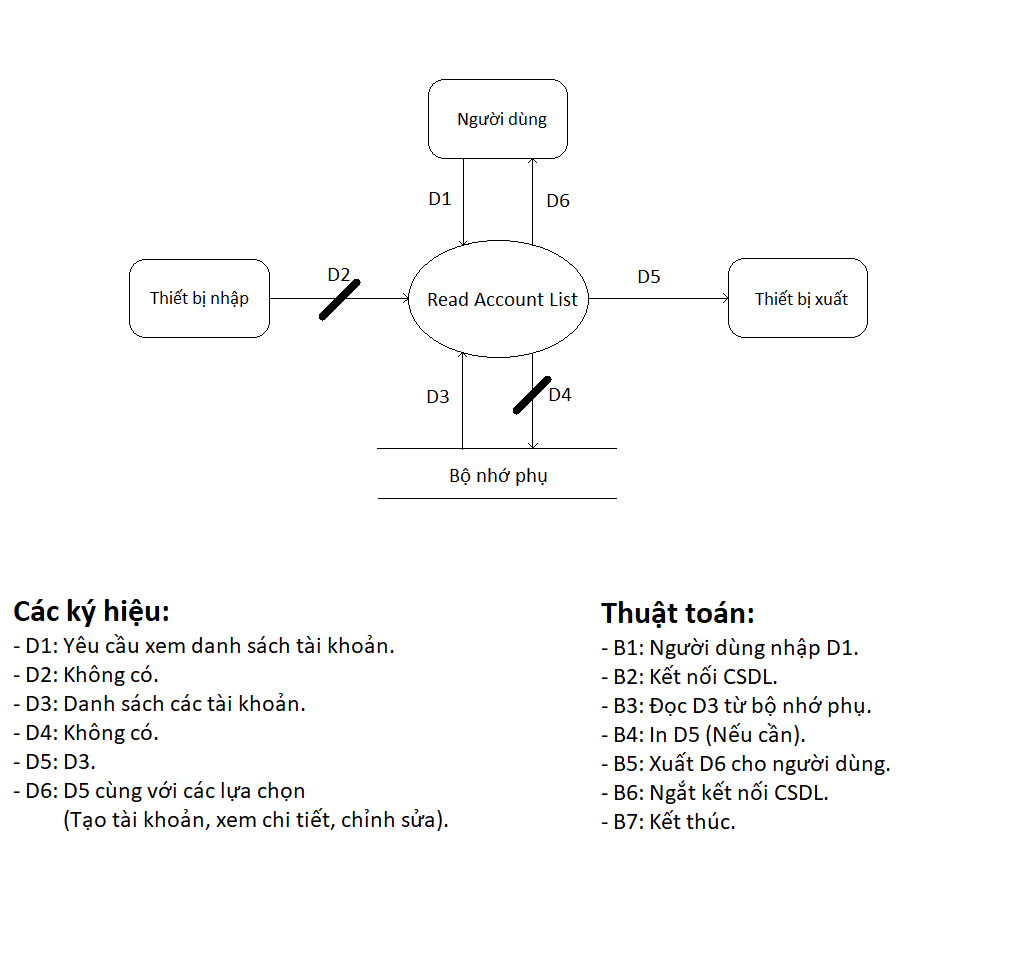
**Hình 2.11: Sơ đồ DFD tổng quát cho màn hình Tạo báo cáo theo tháng**



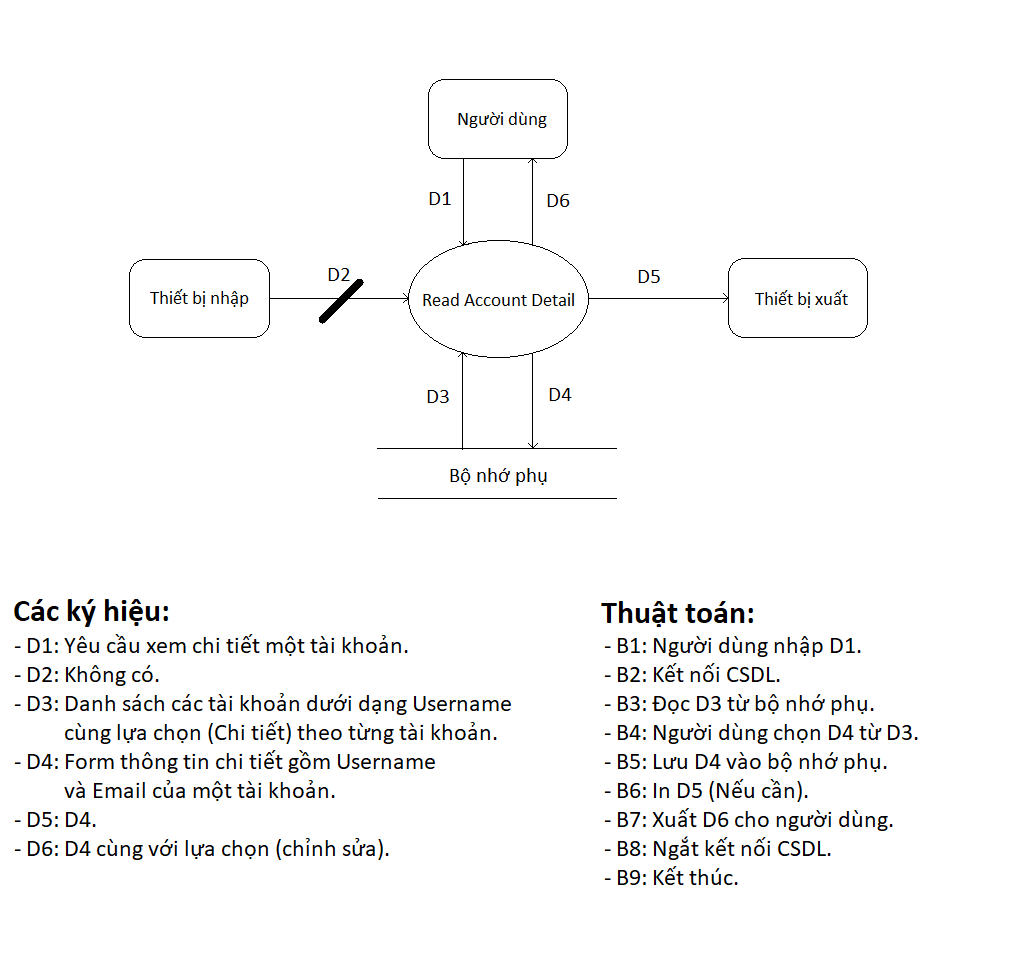
**Hình 2.12: Sơ đồ DFD tổng quát cho màn hình Create Account**



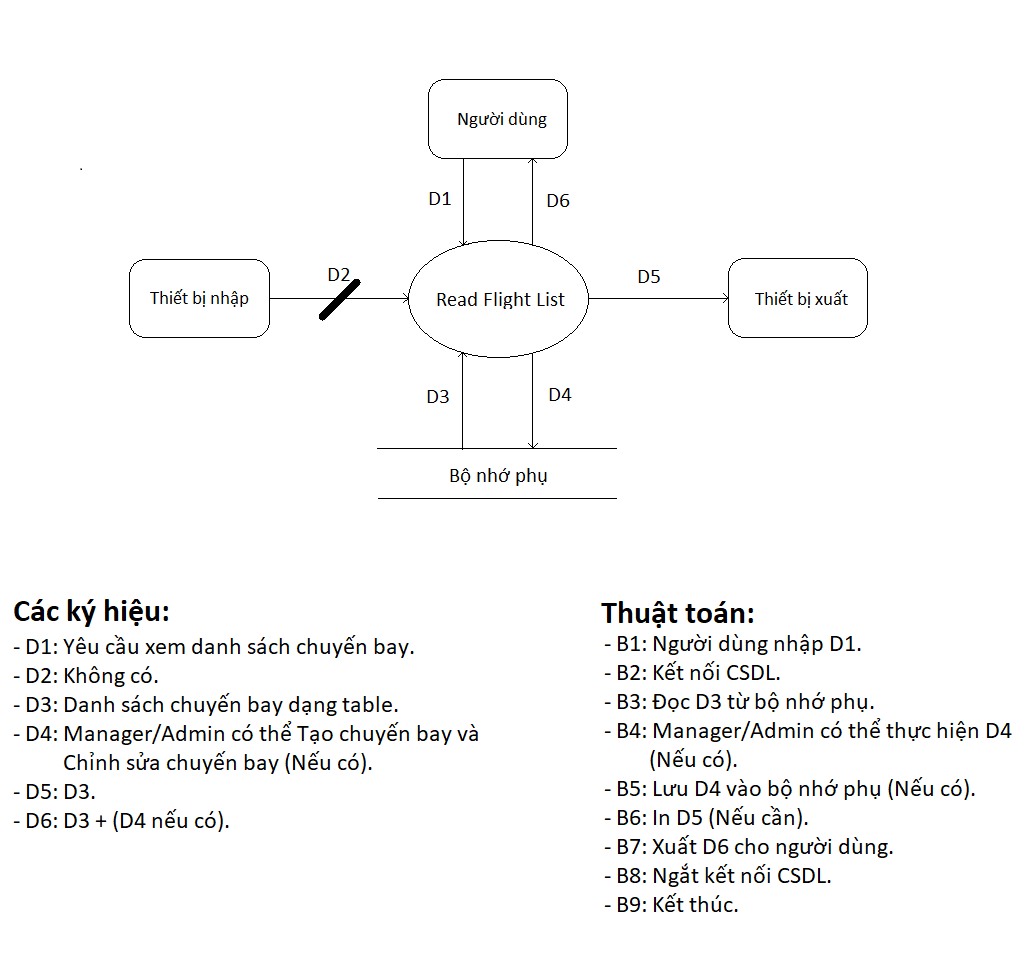
**Hình 2.13: Sơ đồ DFD tổng quát cho màn hình Update Account**



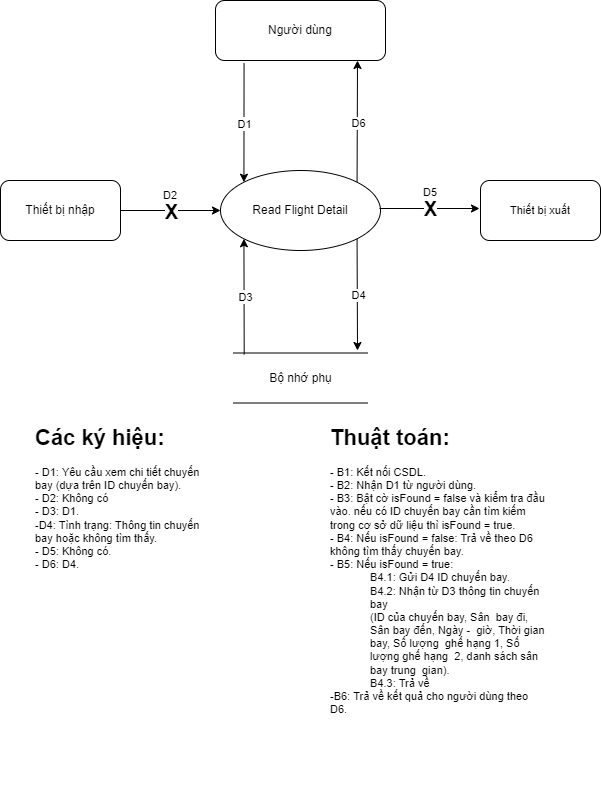
**Hình 2.14: Sơ đồ DFD tổng quát cho màn hình Xem danh sách tài khoản**



**Hình 2.15: Sơ đồ DFD tổng quát cho màn hình Xem chi tiết tài khoản**



**Hình 2.16: Sơ đồ DFD tổng quát cho màn hình Xem danh sách chuyến bay**



**Hình 2.17: Sơ đồ DFD tổng quát cho màn hình Xem chi tiết chuyến bay**

## **2.3** **Data Modeling**

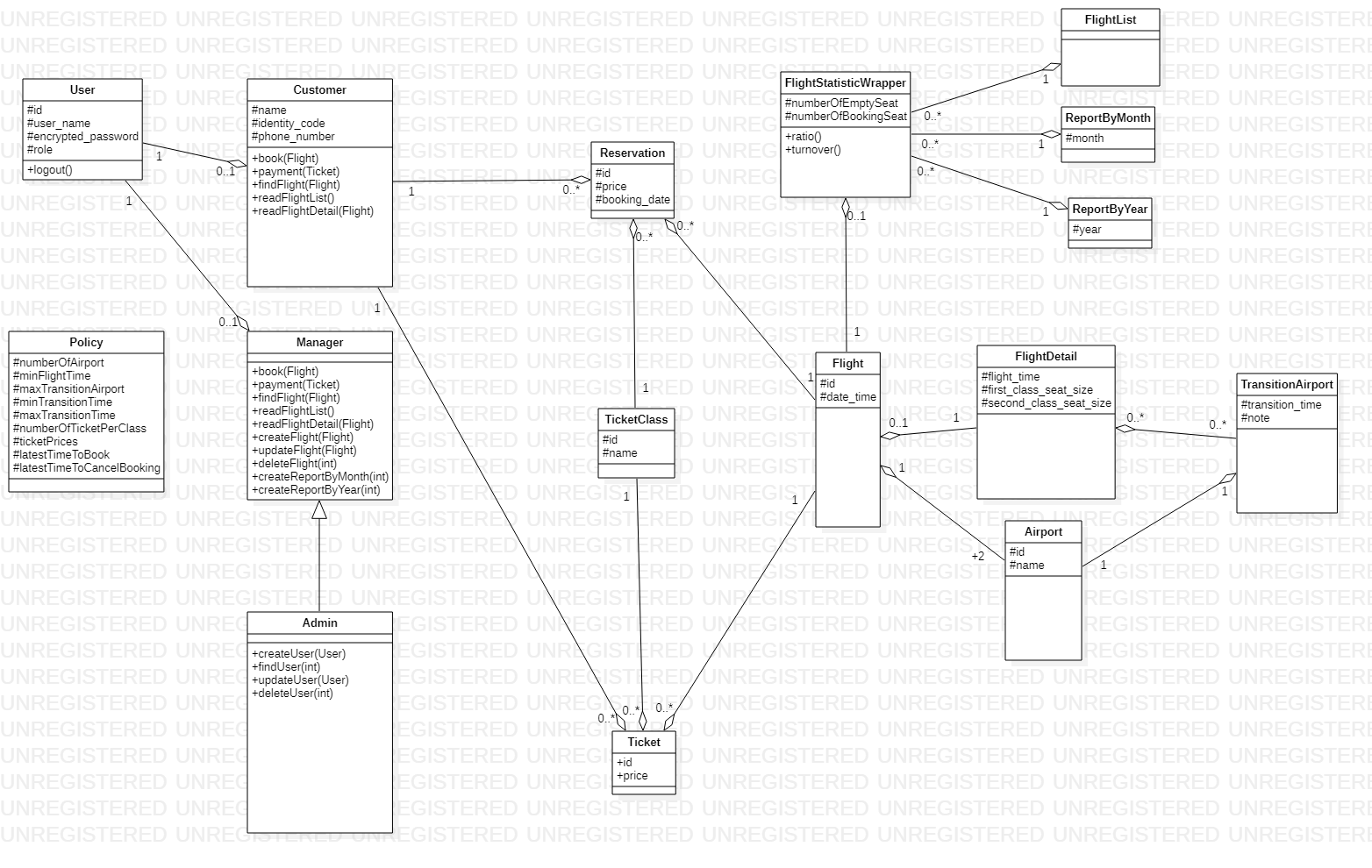
### 2.3.1 CRC Modeling

**Bảng 2.1: Initial User Roles**

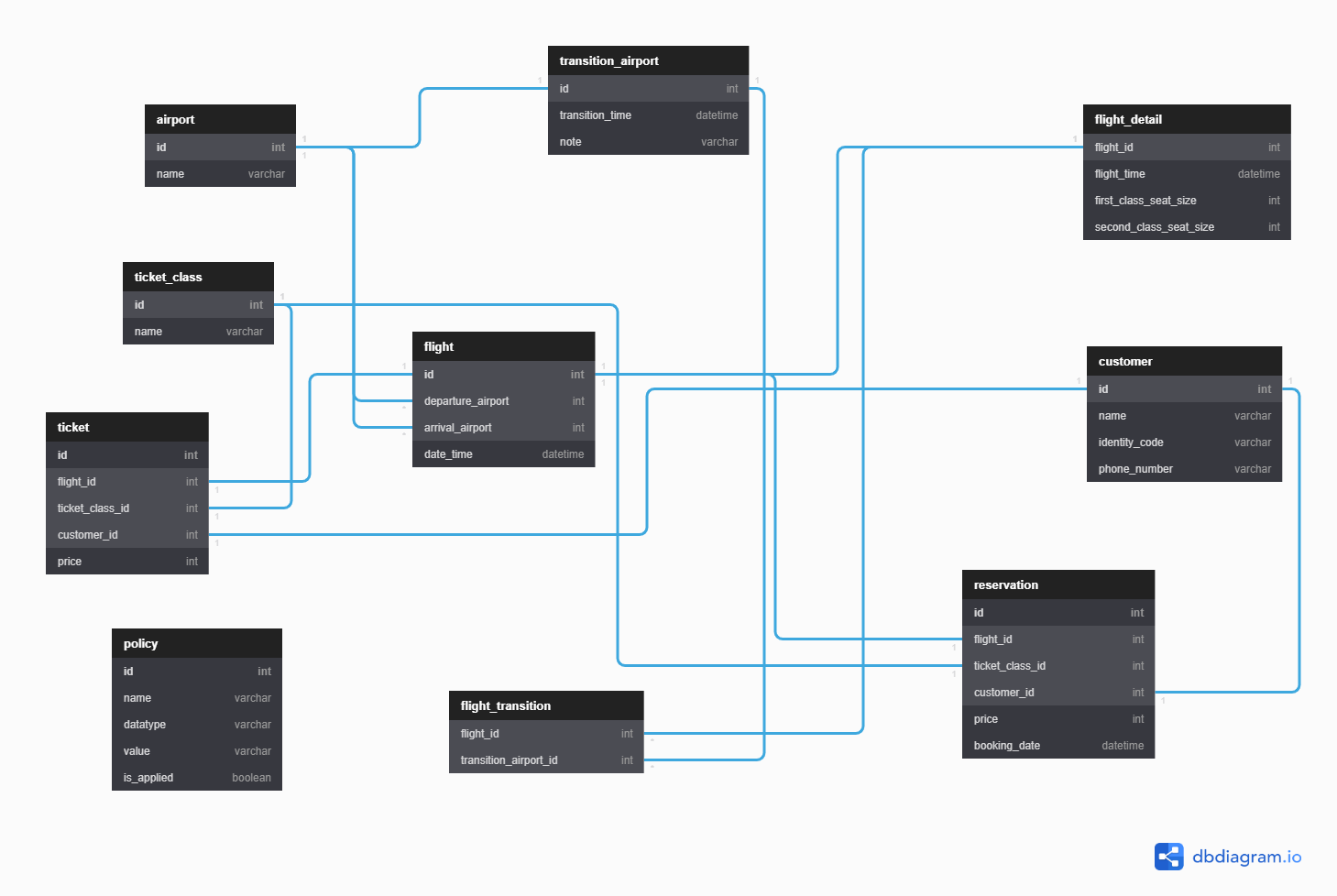
|  |  |  |
| --- | --- | --- |
| **Class** | **Attribute** | **Operation** |
| User | id, user\_name, encrypted\_password, role | logout |
| Customer | user, name, identity\_code, phone\_number | getters, setters, book, payment, findFlight, readFlightList, readFlightDetail |
| Manager | user | getters, setters, book, payment, findFlight, createFlight, readFlightList, readFlightDetail, updateFlight, deleteFlight, createReportByMonth, createReportByYear |
| Admin | user | getters, setters, book, payment, findFlight, createFlight, readFlightList, readFlightDetail, updateFlight, deleteFlight, createReportByMonth, createReportByYear, createUser, findUser(int), updateUset, deleteUser |
| Flight | id, departure\_airport, destination\_airport, date\_time,  flightDetail, | getters, setters |
| FlightDetail | flight\_time, first\_class\_seat\_size, second\_class\_seat\_size, transitionAirports, | getters, setters |
| Airport | id, name | getter, setter |
| TransitionAirport | transition\_time, note, airport | getters, setters |
| TicketClass | id, name | getters, setters |
| Ticket | id, flight, ticketClass, customer, price | getters, setters |
| Reservation | id, flight, ticketClass, customer, price, booking\_date | getters, setters |
| FlightStatisticWrapper | flight, numberOfEmptySeat, numberOfBookingSeat | getters, setters, ratio, turnover |
| FlightList | flightStatisticWrappers | getters, setters |
| ReportByMonth | month, flightStatisticWrappers | getters, setter |
| ReportByYear | year, reportByMonths | getters, setters |
| Policy | numberOfAirport, minFlightTime, maxTransitionAirport, minTransitionTime, maxTransitionTime, numberOfTicketPerClass, ticketPrices, latestTimeToBook, latestTimeToCancelBooking |  |

Bảng 2.2: Các candidate table

|  |  |  |  |
| --- | --- | --- | --- |
| **Source table** | **Column** | **Relationship** | **Target Table** |
| airport | id, name |  |  |
| transition\_airport | id, transition\_time, note | Is | airport |
| flight | id, departure\_airport, destination\_airport date\_time, | Depart from / arrival to  Has many | Airport  transition\_airport |
| flight\_detail | flight\_id, flight\_time, first\_class\_seat\_size, second\_class\_seat\_size | Details of | flight |
| ticket\_class | id, name |  |  |
| reservation | id, flight\_id, ticket\_class\_id, customer\_id, price, booking\_date | Book a seat from  Has ticket class  Booking from | flight  ticket\_class  customer |
| ticket | id, flight\_id, ticket\_class\_id, customer\_id, price | Ticket of a seat from  Has ticket class  Payment from | flight  ticket\_class  customer |
| customer | id, name, identity\_code, phone\_number |  |  |
| policy | id, name, data\_type, value, is\_applied |  |  |

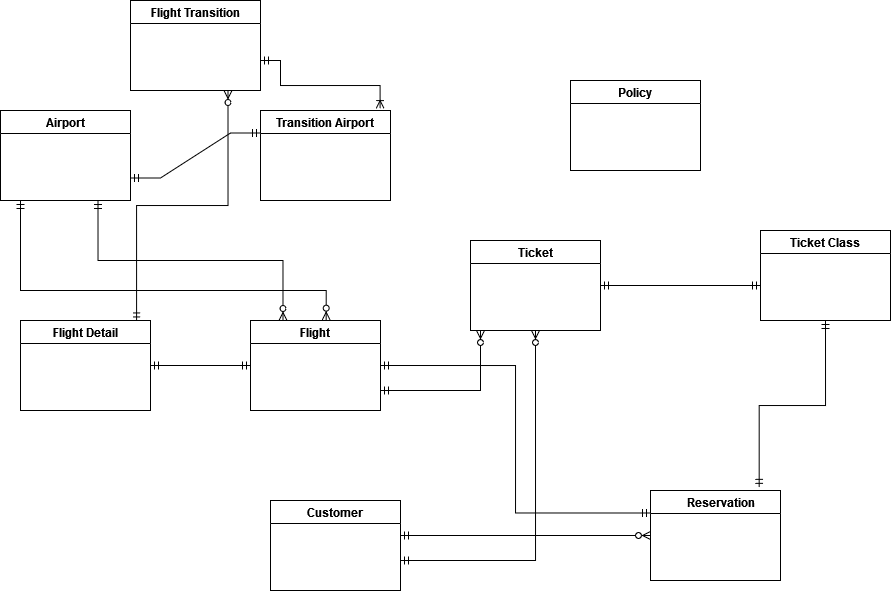


**Hình 2.18: Phiên bản first-cut class diagram**



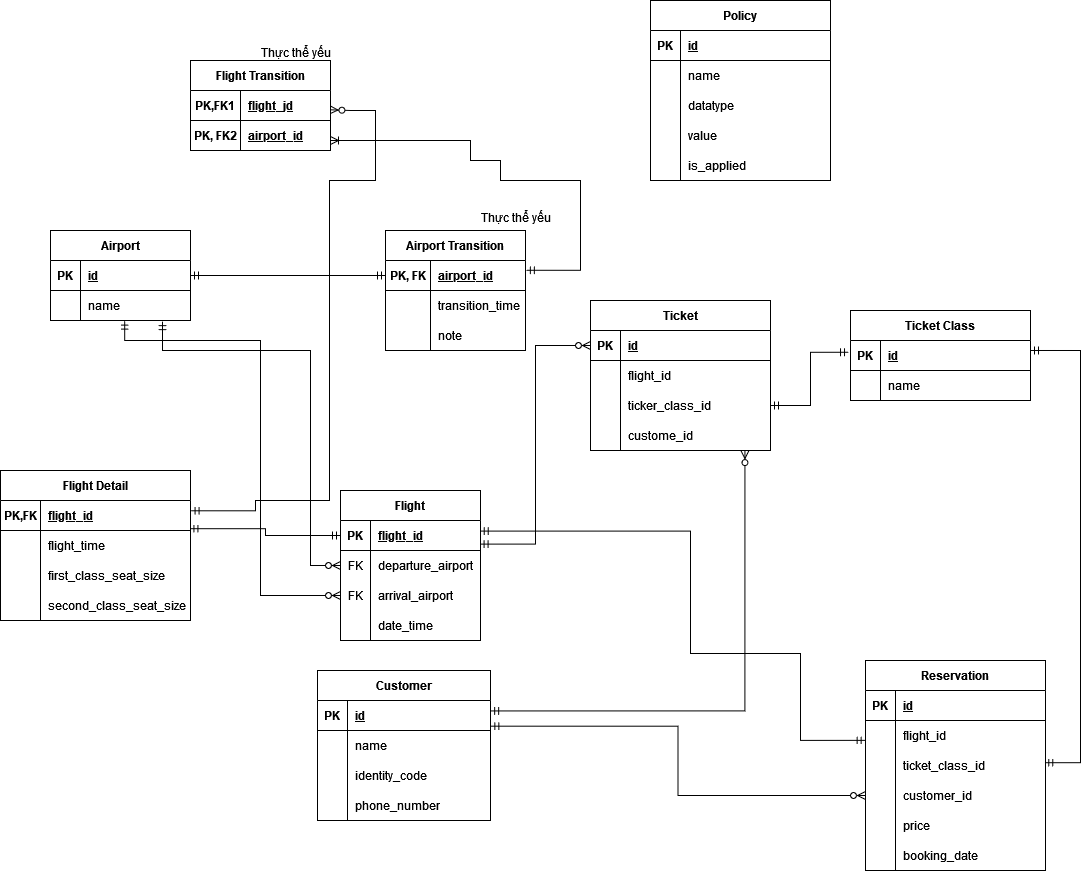
**Hình 2.19: Phiên bản first-cut ERD**

### 2.3.2 Conceptual ERD



**Hình 2.20: Concept ERD**

### 2.3.3 Logical ERD



**Hình 2.21: Logical ERD**

## **2.4** **Architectural Analysis**

### 2.4.1 Analysis Architecture

#### 2.4.1.1 High Level Abstract Architecture - Level 0

Diagram

Description automatically generated

**Hình 2.22: Kiến trúc tổng quát 3-Tier**

#### 2.4.1.2 High Level Abstract Architecture - Level 1

Diagram

Description automatically generated

**Hình 2.23: Architecture cho data fault analysis system**

### 2.4.2 Analysis Package

#### 2.4.2.1 High Level Abstract Analysis Package - Level 0

Diagram

Description automatically generated

**Hình 2.24: VC Structure ở mức Abstract level 0**

#### 2.4.2.2 High Level Abstract Analysis Package - Level 1

Diagram

Description automatically generated with low confidence

**Hình 2.25: MVC Structure ở mức Abstract level 1**

## **2.5** **VOPC Analysis**

### 2.5.1 Sequence Diagram for Booking Flight Use Case



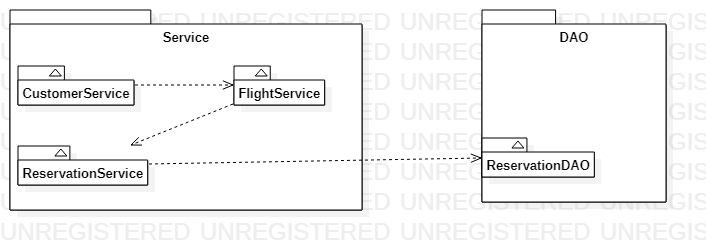
**Hình 2.26: Booking Flight sequence diagram**

#### 2.5.1.1 Analysis Class cho Booking Flight Use Case



**Hình 2.27: Class Diagram cho Booking Flight Use Case**

#### 2.5.1.2 Analysis Package cho Booking Flight Use Case



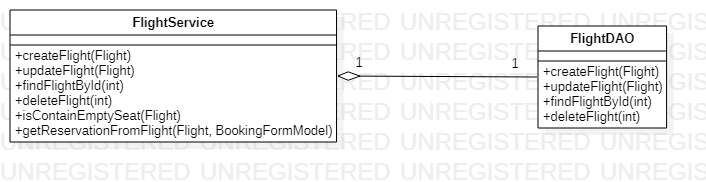
**Hình 2.28: Analysis Package cho Booking Flight Use Case**

### 2.5.2 Sequence Diagram for Create Flight Use Case



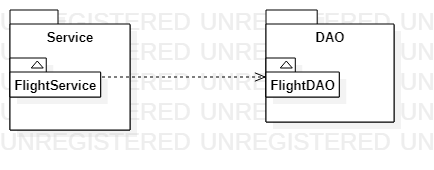
**Hình 2.29: Create Flight sequence diagram**

#### 2.5.2.1 Analysis Class cho Create Flight Use Case



**Hình 2.30: Class Diagram cho Create Flight Use Case**

#### 2.5.2.2 Analysis Package cho Create Flight Use Case



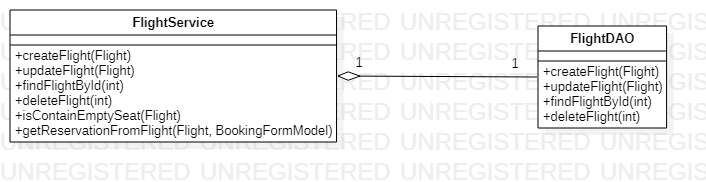
**Hình 2.31: Analysis Package cho Create Flight Use Case**

### 2.5.3 Sequence Diagram for Update Flight Use Case



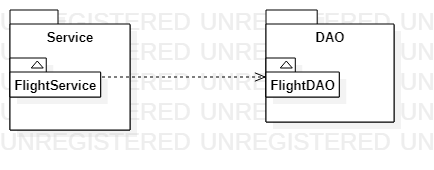
**Hình 2.32: Update Flight sequence diagram**

#### 2.5.3.1 Analysis Class cho Update Flight Use Case



**Hình 2.33: Class Diagram cho Update Flight Use Case**

#### 2.5.3.2 Analysis Package cho Update Flight Use Case



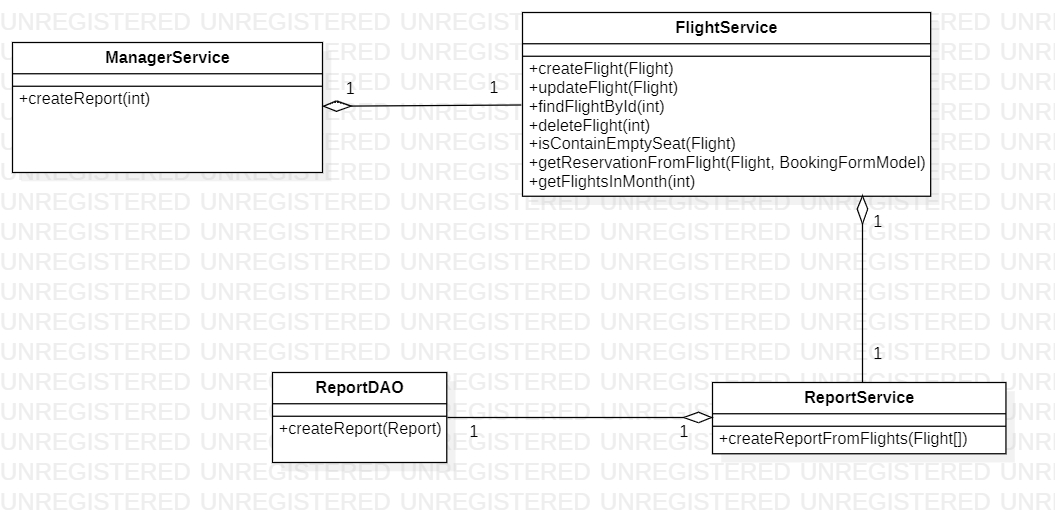
**Hình 2.34: Analysis Package cho Update Flight Use Case**

### 2.5.4 Sequence Diagram for Create Report

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**Hình 2.35: Create Report sequence diagram**

#### 2.5.4.1 Analysis Class for Create Report



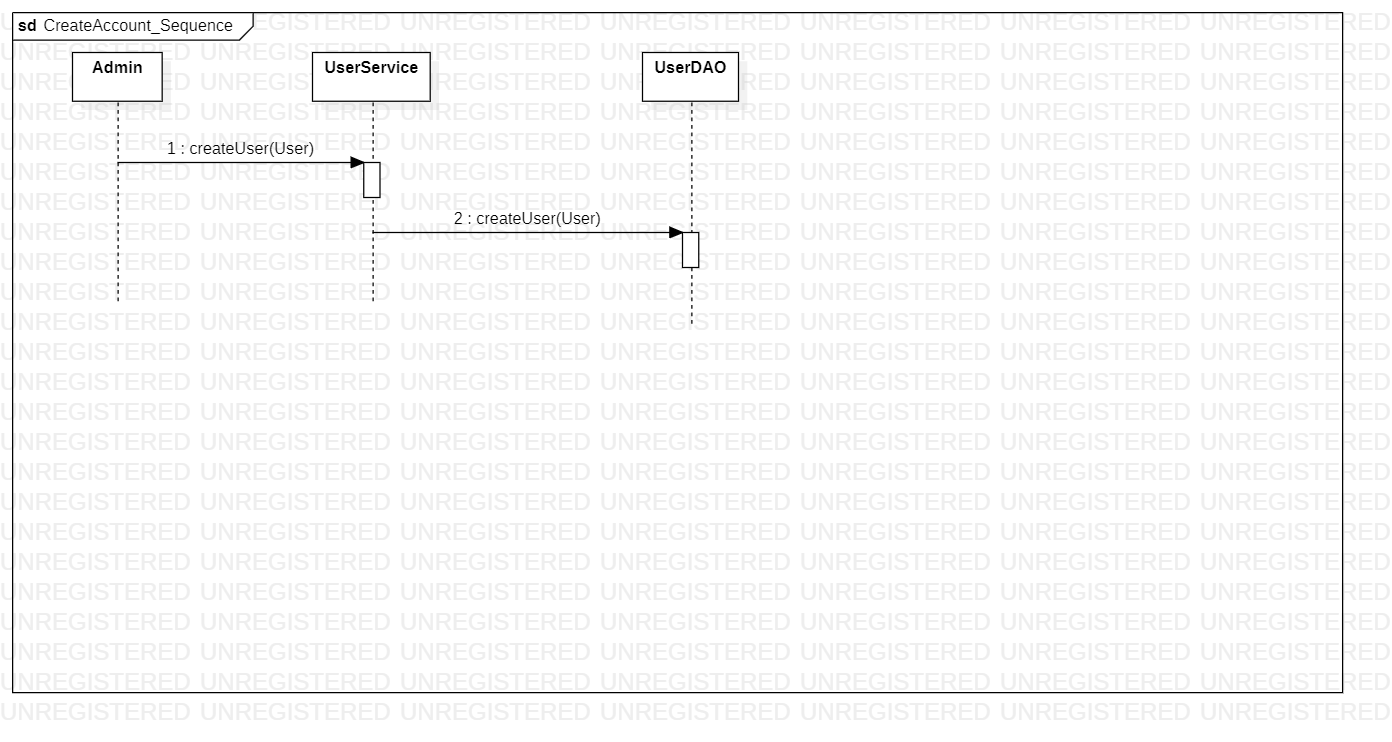
**Hình 2.36: Class Diagram cho Create Report Use Case**

#### 2.5.4.2 Analysis Package for Creating Report

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**Hình 2.37: Analysis Package cho Create Report Use Case**

### 2.5.5 Sequence Diagram for Create Account



**Hình 2.38: Create Account sequence diagram**

#### 2.5.5.1 Analysis Class for Create Account



**Hình 2.39: Class Diagram cho Create Account Use Case**

#### 2.5.5.2 Analysis Package for Create Account



**Hình 2.40: Analysis Package cho Create Account Use Case**

### 2.5.6 Sequence Diagram for Update Account

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**Hình 2.41: Update Account sequence diagram**

#### 2.5.6.1 Analysis Class for Update Account

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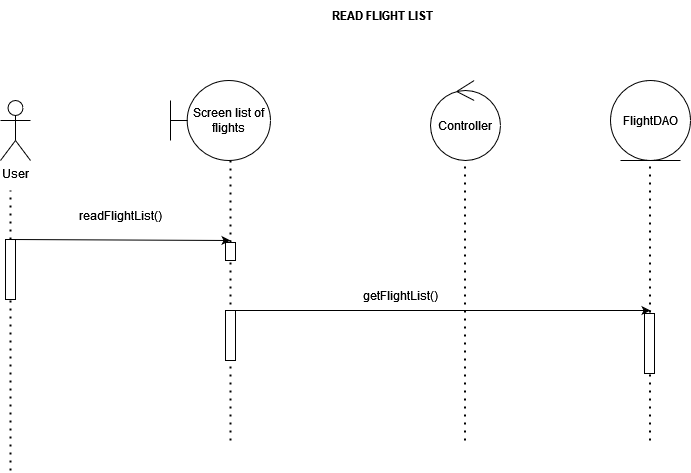
**Hình 2.42: Class Diagram cho Update Account Use Case**

#### 2.5.6.2 Analysis Package for Update Account

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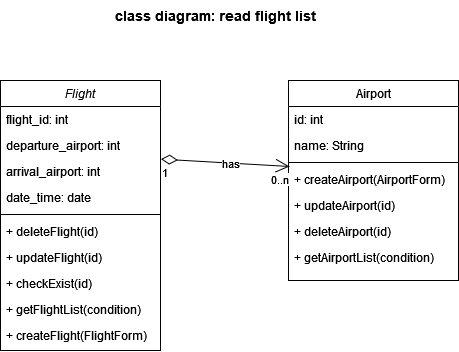
**Hình 2.43: Analysis Package cho Update Account Use Case**

### 2.5.7 Read Flight List



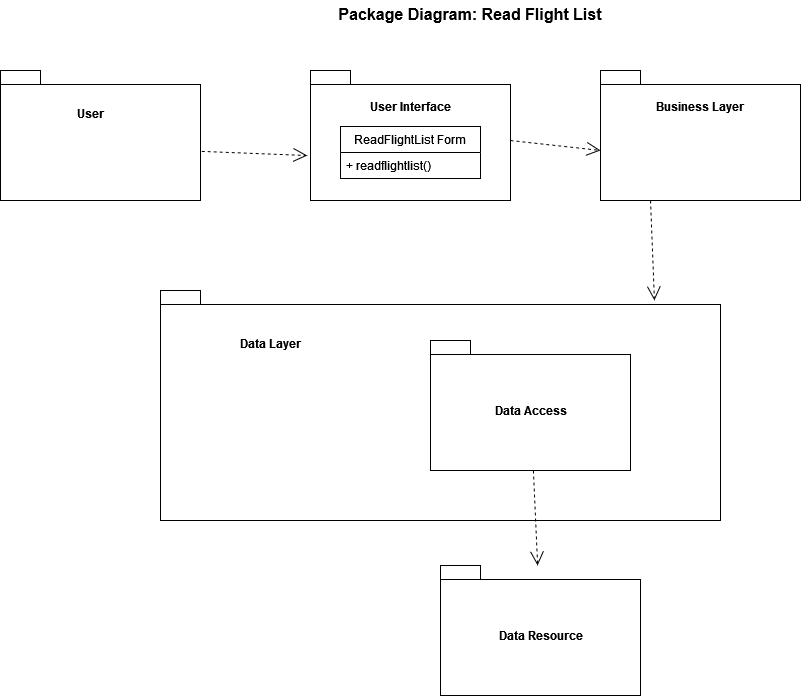
**Hình 2.44: Read Flight List sequence diagram**

#### 2.5.7.1 Analysis Class for Read Flight List



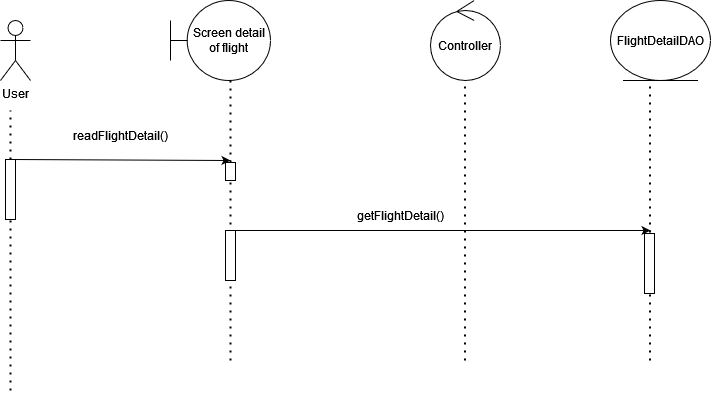
**Hình 2.45: Class Diagram cho Read Flight List Use Case**

#### 2.5.7.2 Analysis Package for Read Flight List

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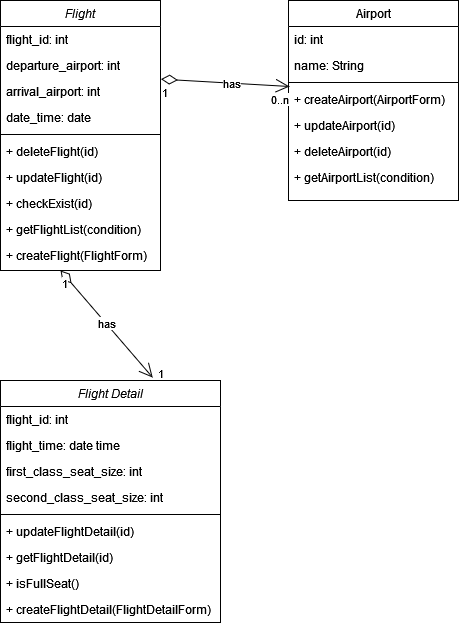
**Hình 2.46: Analysis Package cho Read Flight List Use Case**

### 2.5.8 Read Flight Detail



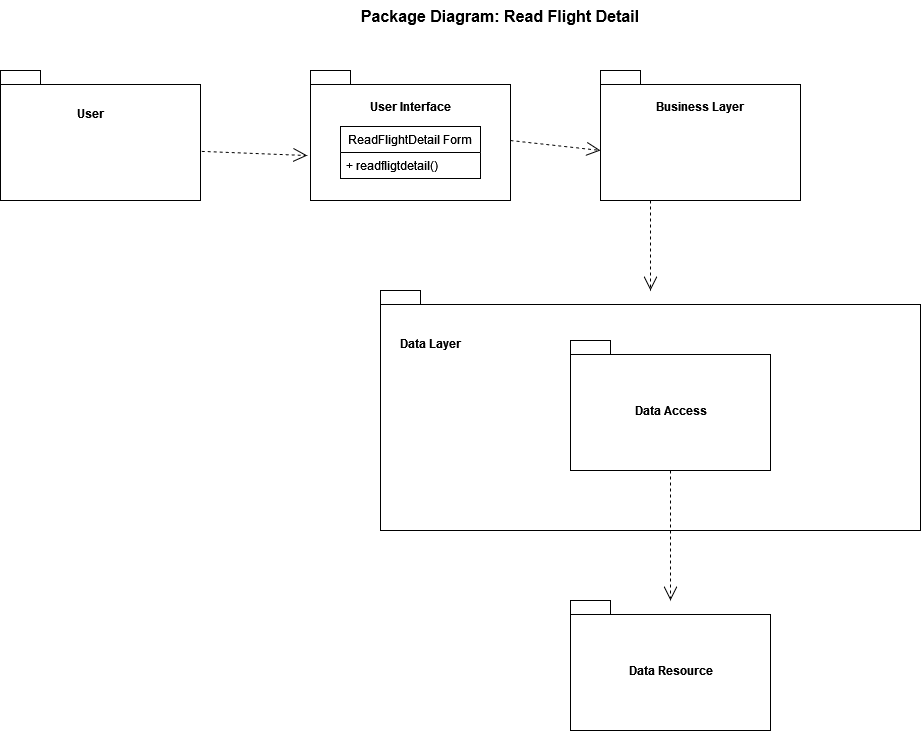
**Hình 2.47: Read Flight Detail sequence diagram**

#### 2.5.8.1 Class dỉagram for Read Flight Detail



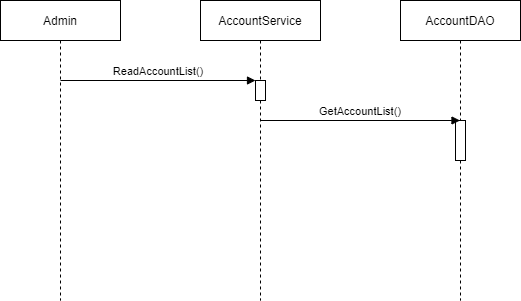
**Hình 2.48: Class Diagram cho Read Flight Detail Use Case**

#### 2.5.8.2 Package diagram for Read Flight Detail

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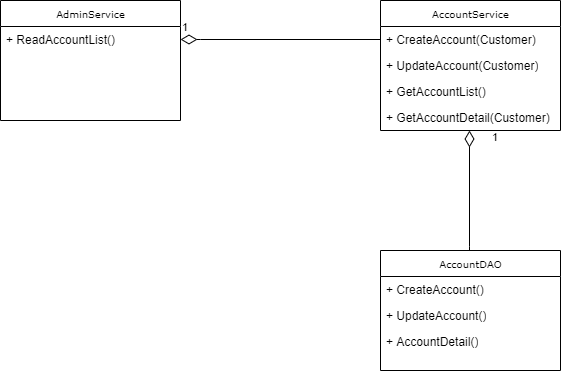
**Hình 2.49: Analysis Package cho Read Flight Detail Use Case**

### 2.5.9 Sequence Diagram for Read Account List



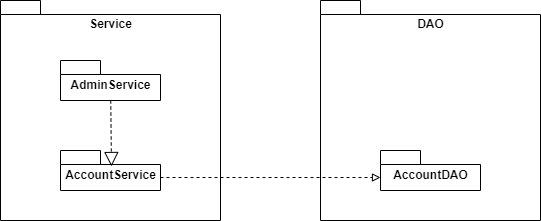
**Hình 2.50: Read Account List sequence diagram**

#### 2.5.9.1 Analysis Class for Read Account List



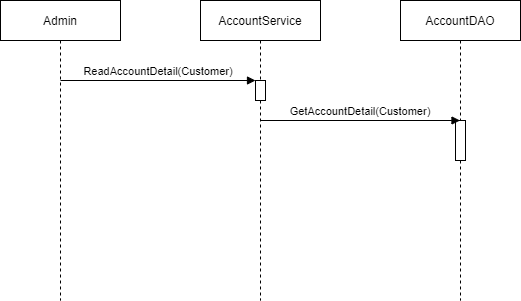
**Hình 2.51: Analysis Class cho Read Account List Use Case**

#### 2.5.9.2 Analysis Package for Read Account List



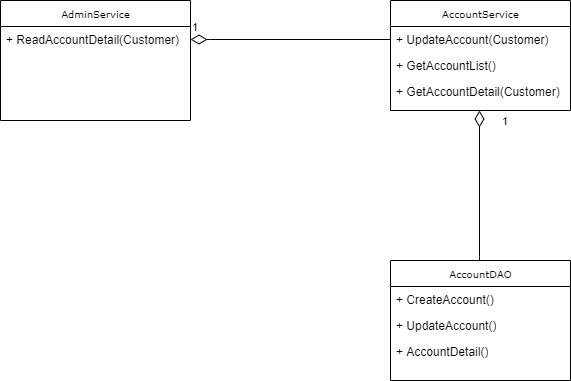
**Hình 2.52: Analysis Package cho Read Account List Use Case**

### 2.5.10 Sequence Diagram for Read Account Detail



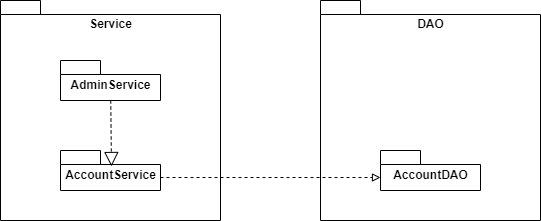
**Hình 2.53: Read Account Detail sequence diagram**

#### 2.5.10.1 Analysis Class for Read Account Detail



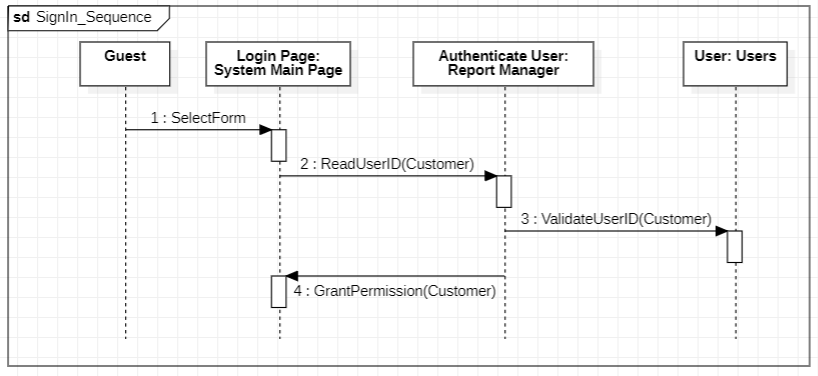
**Hình 2.54: Analysis Class cho Read Account Detail Use Case**

#### 2.5.10.2 Analysis Package for Read Account Detail

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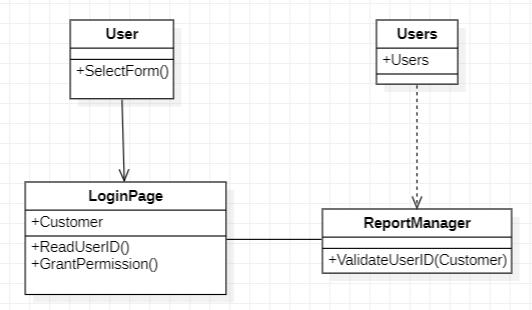
**Hình 2.55: Analysis Package cho Read Account Detail Use Case**

### 2.5.11 Sequence Diagram for Login



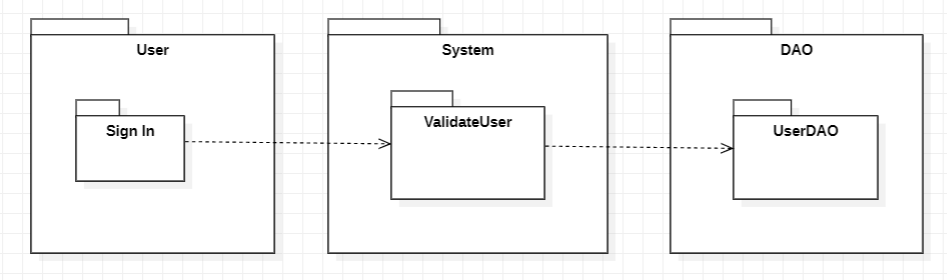
**Hình 2.56: Login sequence diagram**

#### 2.5.11.1 Analysis Class for Login



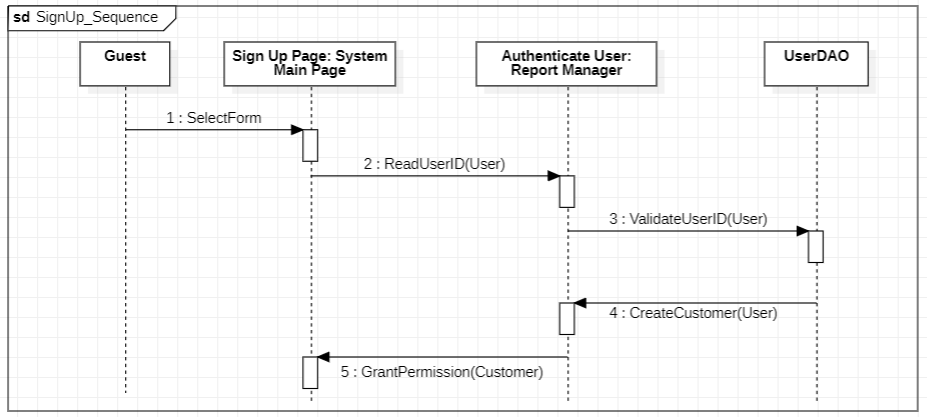
**Hình 2.57: Analysis Class cho Login Use Case**

#### 2.5.11.2 Analysis Package for Login



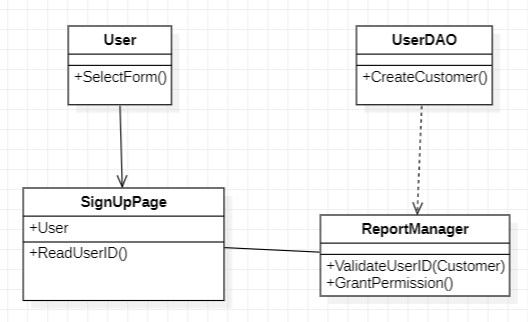
**Hình 2.58: Analysis Package cho Login Use Case**

### 2.5.12 Sign Up Sequence Diagram



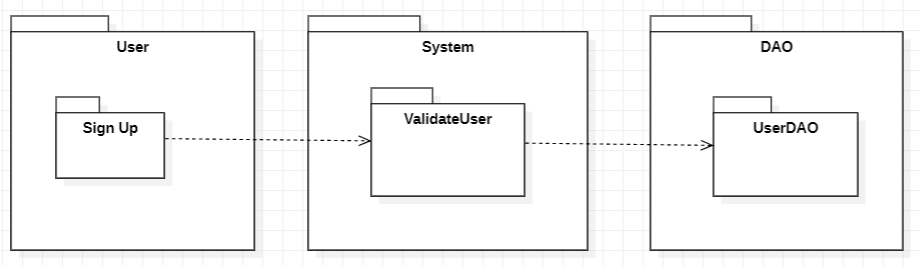
**Hình 2.59: Sign Up sequence diagram**

#### 2.5.12.1 Analysis Class for Sign Up



**Hình 2.60: Analysis Class cho Sign Up Use Case**

#### 2.5.12.2 Analysis Package for Sign Up



**Hình 2.61: Analysis Package cho Sign Up Use Case**

## **2.6** **4 + 1 Architectural View Modeling in Analysis Level**

### 2.6.1 Process / Behavior View

#### 2.6.1.1 Sequence Diagram



**Hình 2.62: Sequence Diagram for Booking Flight**



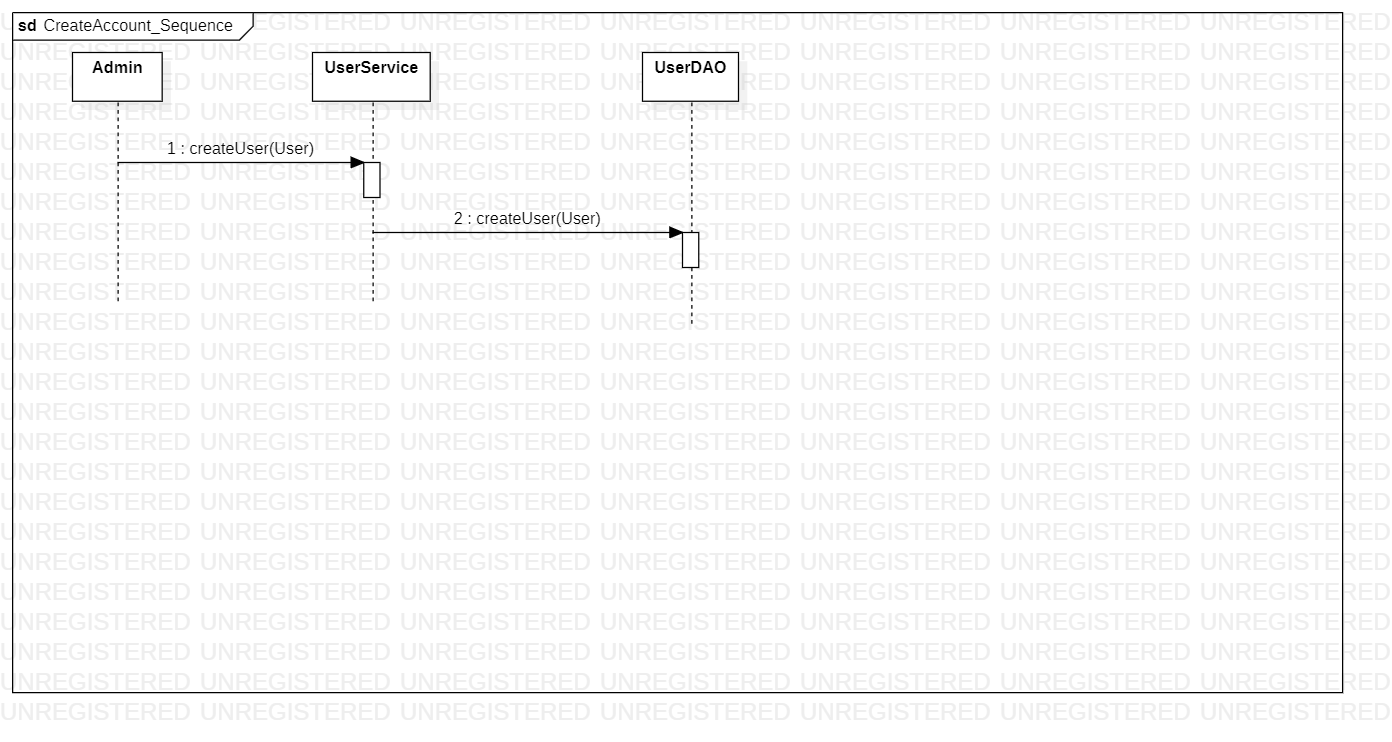
**Hình 2.63: Sequence Diagram for Create Flight**



**Hình 2.64: Sequence Diagram for Update Flight**

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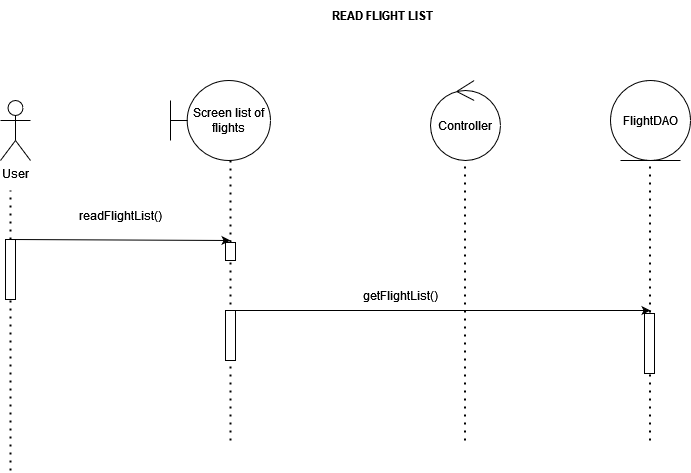
**Hình 2.65: Sequence Diagram for Create Report**



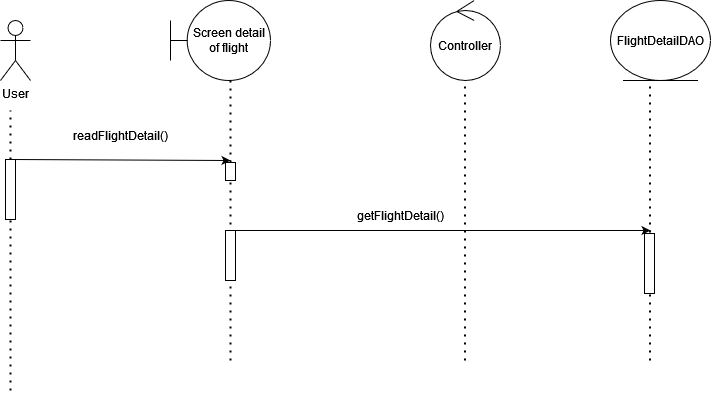
**Hình 2.66: Sequence Diagram for Create Account**

****

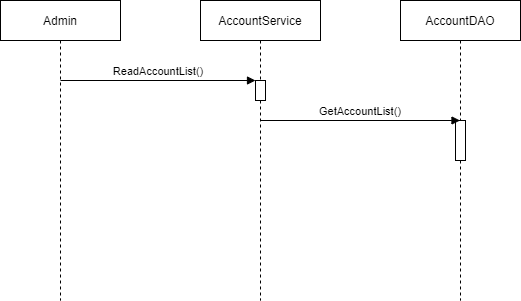
**Hình 2.67: Sequence Diagram for Update Account**



**Hình 2.68: Sequence Diagram for Read Flight List**



**Hình 2.69: Sequence Diagram for Read Flight Detail**

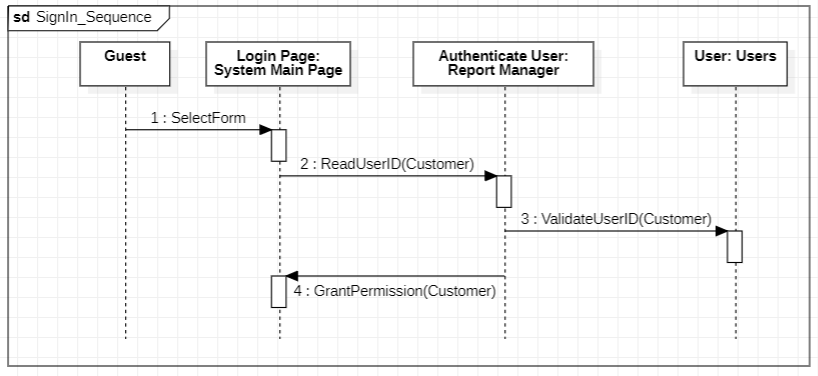


**Hình 2.70: Sequence Diagram for Read Account List**

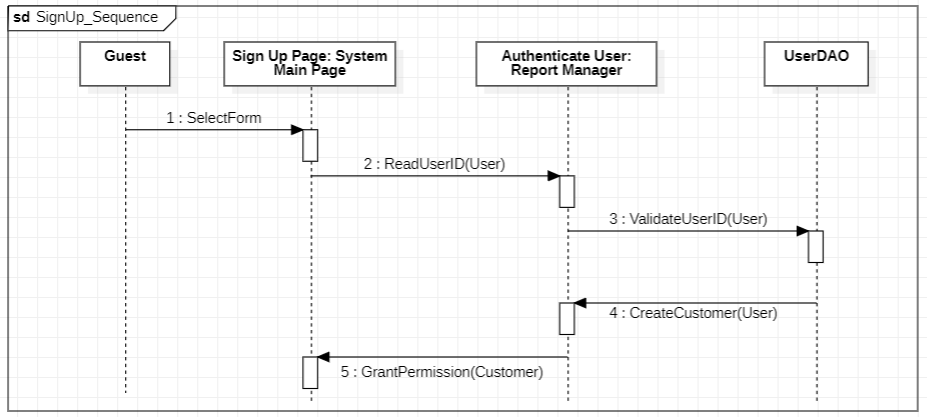
Diagram

Description automatically generated

**Hình 2.71: Sequence Diagram for Read Account Detail**



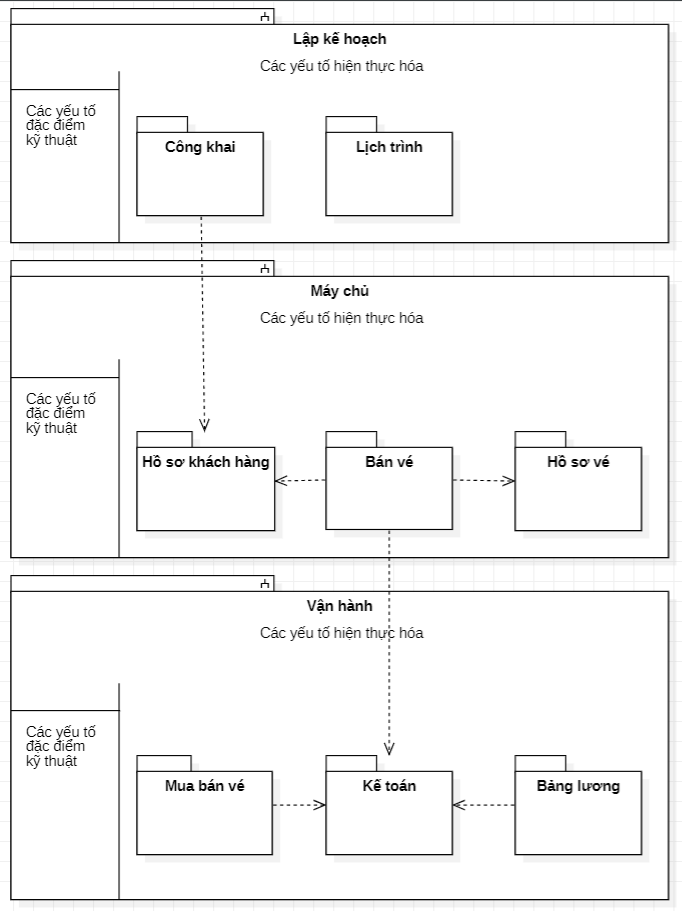
**Hình 2.72: Sequence Diagram for Login**



**Hình 2.73: Sequence Diagram for Sign Up**

### 2.6.2 Implementation / Developer View

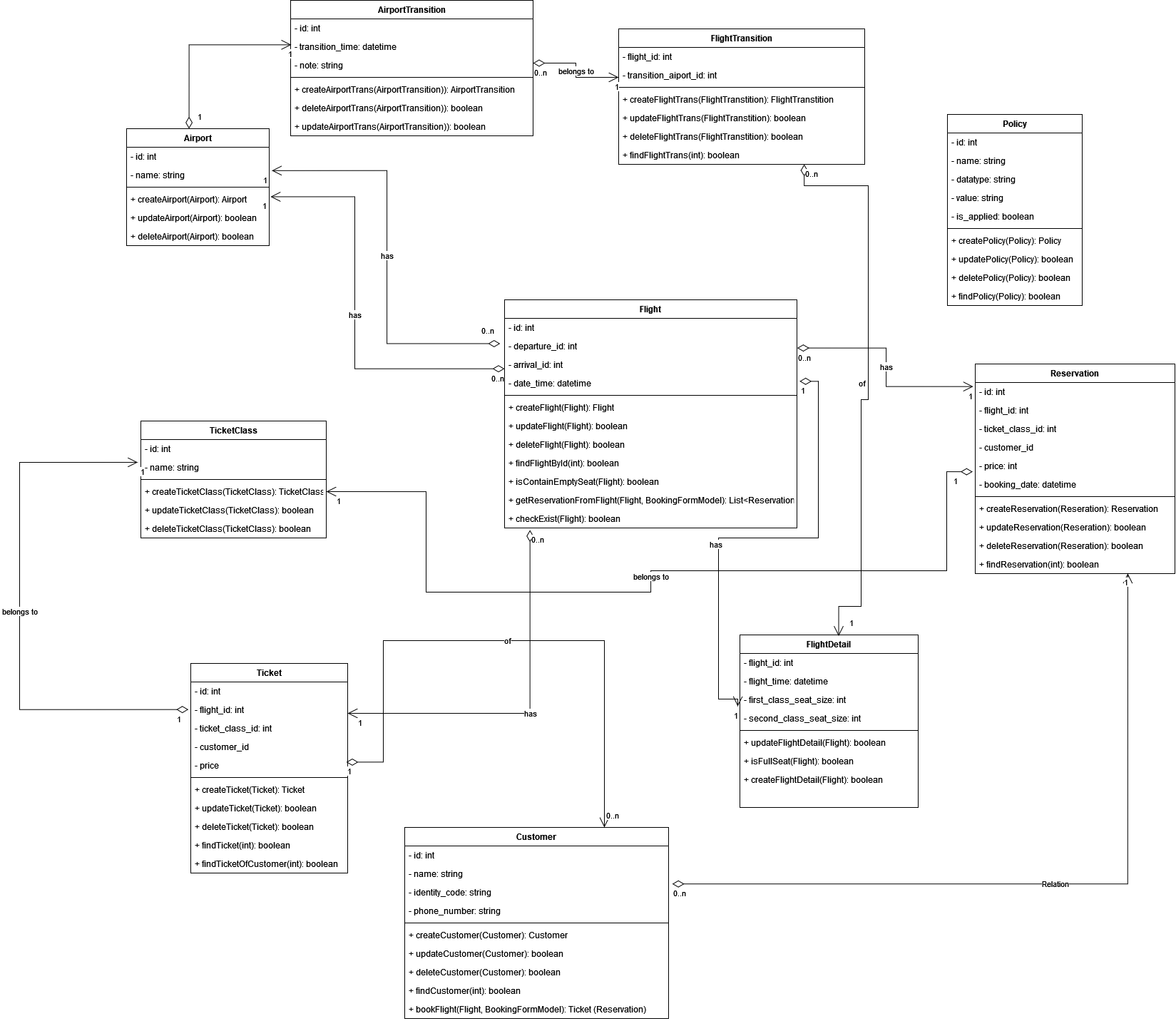
#### 2.6.2.1 Package Diagram



**Hình 2.74: Package Diagram**

### 2.6.3 Logical / Structural View

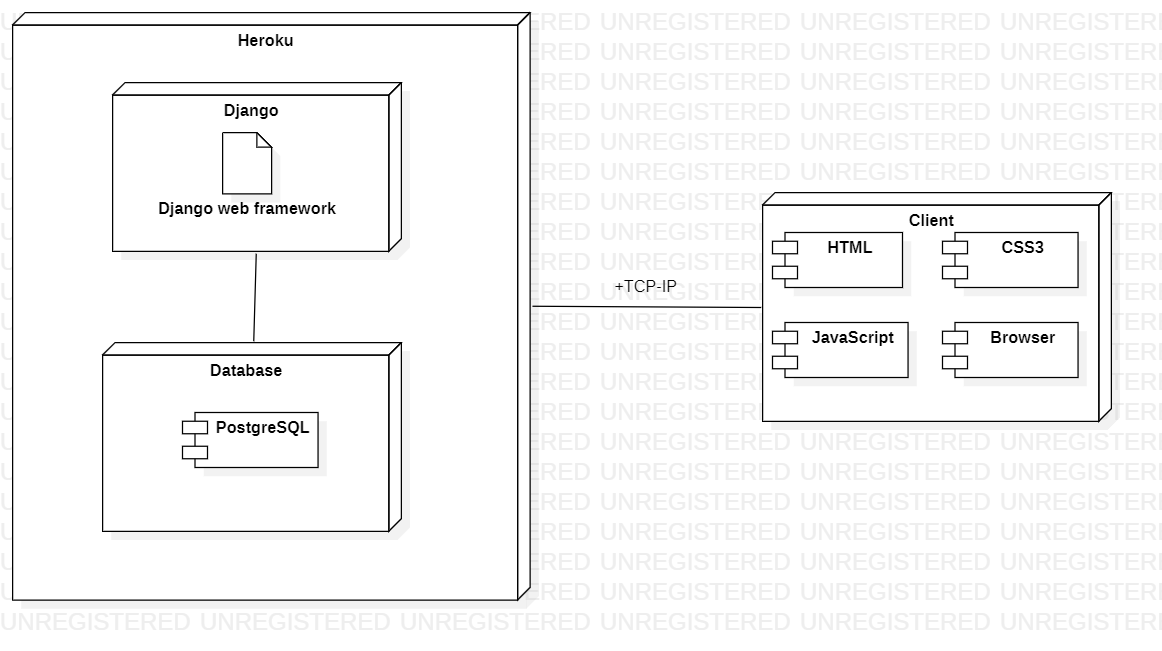
#### 2.6.3.1 Class Diagram



**Hình 2.75: Class Diagram**

### 2.6.4 Deployment / Physical View

#### 2.6.4.1 Deployment Diagram



**Hình 2.76: Deployment Diagram**