

USE CASE SCENARIOS

UC0 – Pick Role

1. The User **opens** the FlightReservationApplication.
2. The System **displays** the PickRoleScreen with options for Customer, Agent, and SystemAdmin.
3. The User **selects** a desired Role.
4. The System **navigates** to LoginView.

UC1 – Login

1. The Actor (Customer, Agent, or SystemAdmin) **launches** the FlightReservationApplication.
2. The System **displays** the LoginView with UsernameField and PasswordField.
3. The Actor **enters** username and password into the fields.
4. The Actor **clicks** the LoginButton.
5. The System **sends** the credentials to the AuthenticationService.
6. The AuthenticationService **validates** the data against the Database and **retrieves** the matching UserAccount.

UC2 – Logout

1. The logged-in Actor **clicks** the LogoutAction from the NavigationMenu.
2. The System **clears** cached UserData from the client view.
3. The System **displays** the LoginView or PickRoleScreen again.

UC3 – Register Account (Customer)

1. The Customer **selects** the RegisterAccountOption from the LoginView.
2. The System **displays** the RegistrationForm with fields for PersonalInfo, ContactInfo, and LoginCredentials.
3. The Customer **fills** in required information and **submits** the form.
4. The System **validates** the input and **checks** the Database for existing UserAccount with the same email.
5. If validation passes, the System **creates** a new CustomerAccount record in the Database.
6. The System **confirms** successful registration and **redirects** the Customer to the LoginView.

UC4 – Make Reservation (Customer)

1. The logged-in Customer **selects** the MakeReservationOption from the CustomerDashboard.
2. The System **invokes** the included use case SearchFlights.
3. The Customer **views** the list of AvailableFlights and **selects** a Flight.
4. The System **invokes** the included use case PickSeats for that flight.
5. After seats are chosen, the System **displays** a ReservationSummary showing FlightDetails, SelectedSeats, and TotalPrice.
6. The Customer optionally **invokes** the extending use case ApplyPromoCode.
7. The Customer **confirms** the reservation and the System **invokes** the included use case ProcessPayment.
8. On successful payment, the System **creates** a new Reservation and **invokes** GenerateBookingConfirmation.
9. The System **displays** the BookingConfirmationScreen to the Customer.

UC5 – View Flight Details (Customer)

1. The Customer **selects** a Flight from a list.
2. The System **retrieves** the FlightDetails from the Database including DepartureTime, ArrivalTime, Route, Aircraft, and SeatAvailability.
3. The System **displays** the details on a FlightDetailsView.
4. The Customer **may** navigate from this screen to the MakeReservation flow.

UC6 – Update Profile (Customer)

1. The Customer **opens** the ProfileSettingsView from the CustomerDashboard.
2. The System **loads** current ProfileData from the Database.
3. The Customer edits fields such as Name, ContactInfo, and Preferences.
4. The Customer **saves** changes.
5. The System **validates** the new data and **updates** the CustomerAccount record.
6. The System **shows** a success message and **refreshes** ProfileView.

UC7 – View Profile (Customer)

1. The Customer **selects** the ViewProfileOption from the dashboard.
2. The System **fetches** ProfileData from the Database.
3. The System **displays** the ProfileView including personal and contact details.

UC8 – View Reservation (Customer)

1. The Customer **selects** the ViewReservationOption.
2. The System **queries** the Database for all Reservations linked to the CustomerAccount.
3. The System **displays** a ReservationListView.
4. The Customer **selects** a specific Reservation to view detailed BookingInformation.

UC9 – Manage Customer Data (Agent)

1. The logged-in Agent **opens** the ManageCustomerDataView.
2. The Agent **view** for a Customer list.
3. The System **retrieves** matching CustomerRecords from the Database.
4. The Agent **selects** a Customer and **views** associated ProfileData and ReservationHistory.
5. The Agent can **update** contact information, **add** notes, or correct data, then save changes.
6. The System **persists updates** in the Database.

UC10 – Modify Reservation (Agent)

1. The Agent **opens** the ModifyReservationView.
2. The Agent **searches** for a Reservation by ReservationID, CustomerName, or FlightNumber.
3. The System **invokes** the included use case ViewCustomerReservations to show all bookings for the selected Customer.
4. The Agent **selects** a Reservation to modify.
5. The System **displays** current ReservationDetails.
6. The Agent may **change** Seats, **adjust** Dates, or **update** PassengerInfo based on business rules.
7. If the **change** affects price, the System **recalculates** Fare and may invoke ProcessPayment for additional charges or IssueRefund for credits.
8. The System **updates** the Reservation in the Database and **shows** an updated Confirmation.

UC11 – View Customer Reservations (Included)

1. The Agent or Customer requests to view reservations for a specific CustomerAccount.
2. The System **queries** the Database for all related Reservations.
3. The System **displays** the ReservationListView with key fields like Status, Flight, and TravelDate.

UC12 – Cancel Reservation

1. The Customer or Agent **selects** a Reservation from the ReservationListView.
2. The Actor **chooses** the CancelReservationAction.
3. The System **shows** a CancellationConfirmationDialog with any RefundPolicy.
4. The Actor **confirms** the cancellation.
5. The System **updates** the ReservationStatus to "Cancelled" and **frees** associated Seats.
6. The System **invokes** the included use case IssueRefund if applicable.
7. The System **shows** a final CancellationSummary.

UC13 – Issue Refund (Included)

1. The System **receives** a request to create a Refund for a cancelled Reservation or failed Payment.
2. The System **calculates** the RefundAmount based on FareRules and Fees.
3. The System **invokes** the PaymentSystem to process the refund to the original PaymentMethod.
4. On success, the System **creates** a RefundRecord in the Database and **links** it to the Payment and Reservation.
5. The System **notifies** the Customer via EmailSystem with a RefundConfirmationEmail.

UC14 – View Reports (System Admin)

1. The SystemAdmin **selects** the ViewReportsOption from the admin dashboard.
2. The System **displays** a ReportsMenu with options such as SalesReport, LoadFactorReport, and CustomerActivityReport.
3. The SystemAdmin **chooses** a report type and **sets** filters like DateRange or Route.
4. The System **queries** the Database and **generates** the requested Report.
5. The System **displays** the report on a ReportView and optionally lets the SystemAdmin export it as PDF or CSV.

UC15 – Manage Airports (System Admin)

1. The SystemAdmin **opens** the ManageAirportsView.
2. The System **lists** existing Airports from the Database.
3. The SystemAdmin may **add** a new Airport, **edit** an existing Airport, or **deactivate** an Airport.

4. When saving, the System **validates** codes, names, and city fields and **updates** the AirportTable.

UC16 – Manage Airlines (System Admin)

1. The SystemAdmin **opens** the ManageAirlinesView.
2. The System **displays** all Airlines.
3. The SystemAdmin **can** create, **edit**, or **remove** Airline entries (subject to rules).
4. The System **persists** changes in the Database and **updates** any dependent Flights or Routes as needed.

UC17 – Manage Routes (System Admin)

1. The SystemAdmin **opens** the ManageRoutesView.
2. The System **loads** existing Routes connecting Airports.
3. The SystemAdmin can **define** new Route pairs or **edit** existing ones.
4. The System **validates** that OriginAirport and DestinationAirport are different and active.
5. The System **saves** all route changes to the Database.

UC18 – Manage Aircraft (System Admin)

1. The SystemAdmin **opens** the ManageAircraftView.
2. The System **displays** a list of Aircraft with Model, Capacity, and SeatLayout.
3. The SystemAdmin may **add** a new Aircraft, **update** details, or **remove** an Aircraft.
4. The System **validates** capacity values and **updates** the AircraftTable.

UC19 – Manage Flight (System Admin)

1. The SystemAdmin **opens** the ManageFlightView.
2. The System **lists** all scheduled Flights with Route, Aircraft, and Schedule.
3. The SystemAdmin can create a new Flight by selecting a Route and Aircraft and **setting** departure and arrival times.
4. The SystemAdmin may also **edit** times or statuses of existing Flights.
5. The System **saves** changes and **updates** related SeatInventory and Availability in the Database.

UC20 – Send Monthly Promos (System Admin)

1. The SystemAdmin **opens** the SendMonthlyPromosView.
2. The System **retrieves** a target list of Customers based on MarketingCriteria (e.g., routes, inactivity).
3. The SystemAdmin **composes** a PromoEmailTemplate and associated PromoCode.
4. The System **invokes** the EmailSystem to **send** personalized PromoEmails to all selected Customers.
5. The System **logs** the campaign in the Database for reporting.

UC21 – Search Flights (Included)

1. The Customer or Agent **opens** the FlightSearchForm.
2. The Actor **enters** OriginAirport, DestinationAirport, TravelDate, and optional filters.
3. The Actor **submits** the search.
4. The System **queries** the Database for Flights matching criteria.
5. The System **displays** a FlightSearchResultsView with available options.

UC22 – Pick Seat(s) (Included)

1. After choosing a Flight, the System **displays** a graphical SeatMap showing AvailableSeats and BookedSeats.
2. The Customer or Agent **selects** one or more Seats based on traveler count and preferences.
3. The System **temporarily reserves** the selected Seats and **updates** the ReservationDraft.
4. The Actor **confirms** seat selection and the System **returns** to the main reservation flow.

UC23 – Apply Promo Code (Extends Make Reservation)

1. On the ReservationSummaryView, the Customer **enters** a PromoCode into the promo field.
2. The System **validates** the code against the PromoDatabase for eligibility and expiry.
3. If valid, the System **recalculates** the TotalPrice and **updates** the ReservationSummary with discounted value.
4. If invalid, the System **displays** an error message and keeps the original price.

UC24 – Process Payment (Included)

1. The Customer or Agent **opens** the PaymentForm for a ReservationDraft or modification.

2. The Actor enters PaymentDetails such as CardNumber, ExpiryDate, CVV, or selects a stored PaymentMethod.
3. The System validates the format of the details and calculates the final AmountDue.
4. The System sends a payment request to the external PaymentSystem.
5. The PaymentSystem authorizes or declines the transaction and returns a response.
6. On success, the System creates a PaymentRecord and links it to the Reservation.
7. The System then invokes GenerateBookingConfirmation.
8. On failure, the System displays an error and allows the Actor to retry or cancel.

UC25 – Generate Booking Confirmation (Included)

1. After successful Payment, the System creates a finalized Reservation with status "Confirmed".
2. The System generates a BookingReference and ItineraryDocument.
3. The System displays the BookingConfirmationScreen to the Customer or Agent.
4. The System invokes the EmailSystem to send a BookingConfirmationEmail including the itinerary and booking reference.