# **Proposed System**

## **Overview**

The proposed system will afford a greater degree of flexibility to the potential traveler. Specifically, the proposed system will be accessible from anywhere; all that will be required is the use of an Internet-enabled device on which a compatible web browser is installed. And since the proposed system will be available online, it will, for the most part, be offered as an around-the-clock service, making its use far more convenient than those that are agent-based. Keep in mind that agent-based services can be off-putting to potential travelers due to the physical location from which they operate and their hours of operation. Importantly, the proposed system will offer unparallel transparency, as every piece of information that is pertinent to an in-process booking transaction will be made available to the potential traveler, facilitating the overall decision-making process. Speaking of which, the proposed system will be as user-friendly as possible and will even strive to conform to the latest Web Content Accessibility Guidelines (WCAG) and Americans with Disabilities Act (ADA) standards in its design, making navigating the system interface no less than an intuitive experience. Not to mention, the proposed system will grant the potential traveler the ability to willingly cancel an in-process booking transaction at any time. Finally, the proposed system will disallow the collection and storage of any traveler-associated personally identifiable information (PII) as well as the processing of monetary transactions, mitigating the potential risk of the potential traveler being personally exposed.

## **Conceptual Model – User Scenarios**

### **Customer**

A customer is any person who uses the proposed airline reservation system (henceforth referred to as WPI-ARS) to book a reservation for a flight. Moreover, a customer is assumed to have access to an Internet-enabled device on which a compatible web browser is installed. Also, a customer requires the ability to travel to and from any WPI-ARS-listed airport at a time and date of their choosing. A customer further requires a user-friendly experience and complete transparency when navigating the WPI-ARS interface. As such, any information that the customer requests while navigating the WPI-ARS interface must be pertinent, complete, and accurate. Finally, a customer requires the ability to modify and cancel their reservation at any time while processing and before committing to their transaction while using the WPI-ARS interface.

### **Administrator**

An administrator is any person designated to manage the WPI-ARS database. Importantly, an administrator requires an assigned WPI-ARS database role that matches their designated level of access. As such, an administrator, based on their assigned role, requires the ability to add, delete, view, and update all WPI-ARS database-associated tables or records. Finally, an administrator requires the assurance that their manipulation of the WPI-ARS database will not adversely impact any in-process and/or committed customer-associated transaction.

## **Functional Model - Use Case Model**

The varying functionalities that the proposed system will provide and the way they relate to one another are described using the below use-cases.

### **Search Flights**

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| --- | --- |
| **Name** | Search Flights |
| **Description** | This use case describes the scenario during which the customer searches for available flights based upon a desired set of criteria. |
| **Participating Actor** | Customer |
| **Flow of Events** | 1. The customer selects the type of flight (i.e., one-way, round-trip, and/or multi-city) and seat (i.e., economy, premium economy, business, and/or first class) desired. 2. The customer inputs their desired departure and arrival airport. 3. The customer selects their desired departure date. 4. The customer quantifies the number of travelers by type (i.e., adult, children, and/or infant).    1. If a traveler is a child between 2 and 17 years of age, the customer inputs their age.    2. If a traveler is an infant younger than 2 years of age, the customer inputs their age and whether they will travel on the lap of an older traveler or in a properly secured safety seat. 5. The customer executes the query to search for available flights that meet their desired criteria. 6. The result of the search is displayed. |
| **Entry Conditions** | * The customer navigates to the WPI-ARS website. * The customer has a desired departure and arrival airport. * The customer has a desired departure date and time as well as arrival date and time. * The customer has a desired type of flight and seat. |
| **Exit Conditions** | * The WPI-ARS application displays information that is pertinent to the search that the customer executed. |
| **Quality Requirements** | * The search results must be displayed within 15 seconds or less. * The search results must include the following:   + The cost of the flight per traveler.   + The departure and arrival airports.   + The departure and arrival dates as well as times (the displayed times must match the time zone of the customer).   + The flight operator and flight number.   + The duration of the flight.   + Whether the flight is nonstop and, if not, the number of stops that will occur between the departure and arrival airports (all stops will list their duration and the airport where they occur). |

### **Review Flights**

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| --- | --- |
| **Name** | Review Flights |
| **Description** | This use case describes the scenario during which the customer reviews the information that resulted from their search for available flights using their selected set of desired criteria. |
| **Participating Actor** | Customer |
| **Flow of Events** | 1. The customer sorts the results of their search by a desired criterion (i.e., price, departure time, arrival time, flight duration, number of stops, and flight operator) in ascending or descending order. 2. The customer scrolls through the list of available flights. 3. The customer selects a potential flight for further review. |
| **Entry Conditions** | * The customer is on the WPI-ARS website. * The results from the search for available flights are displayed on the WPI-ARS interface. |
| **Exit Conditions** | * The additional details page is displayed for the selected flight. |
| **Quality Requirements** | * The additional details page must be displayed within 15 seconds or less. |

### **Initiate Flight Booking Transaction**

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| **Name** | Initiate Flight Booking Transaction |
| **Description** | This use case describes the scenario during which the customer initiates a flight booking transaction after reviewing the flight's details. |
| **Participating Actor** | Customer |
| **Flow of Events** |  |
| **Entry Conditions** |  |
| **Exit Conditions** |  |
| **Quality Requirements** |  |

### **Modify/Cancel Flight Booking**

|  |  |
| --- | --- |
| **Name** | Modify/Cancel Flight Booking Transaction |
| **Description** | This use case describes the scenario during which the customer modifies or cancels a flight booking transaction. |
| **Participating Actor** | Customer |
| **Flow of Events** |  |
| **Entry Conditions** |  |
| **Exit Conditions** |  |
| **Quality Requirements** |  |

### **Book Flight**

|  |  |
| --- | --- |
| **Name** | Book Flight |
| **Description** | This use case describes the scenario during which the customer books a flight. |
| **Participating Actor** | Customer |
| **Flow of Events** |  |
| **Entry Conditions** |  |
| **Exit Conditions** |  |
| **Quality Requirements** |  |