University of British Columbia, Department of Computer Science

CPSC 304

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Project Part 1

Group Name: AirBC

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above.
In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia.

Project Description

We are going to model a database used by an airline company, such as Air Canada.

The aspects of the database we will be modelling will be information relevant to the airline's customers and the airline's operations. There are three main types of users of the system: public, customers and the airline's staff. The public can view flights but can't book tickets and no information about them is stored in the database. Customers with accounts have all the functionality of the public and they can book tickets on flights. Staff have full access to the system and are able to schedule new flights, routes, and assist customers with booking and other account functions.

Customers will be able to create a membership account through the airline. Each customer account has a unique ID. Only customers with accounts can book or cancel flights. The account will store information such as customer name, email address, travel document, billing address, contact information, seat preferences, and payment information. Customer's private information such as credit card information is not viewable by staff. Customers can choose to enroll in AirBC's loyalty program, and thus their account will also store the member's loyalty status and points. Customers can then book flights using their account. Each flight will contain information such as the flight ID, route, date and time, ticket price, and aircraft.

Airline staff will be able to add new routes, update existing routes and add/remove flights on a route. Every staff member has a unique account. Only certified staff will be able to access the personal data of customers - their billing address, for example. The staff reserves the right to remove any customer from a specific flight at their discretion.

The system will maintain information about each aircraft including its unique ID, type, number of first class, business, and, economy seats, purchase date, and status. Airline staff can add new aircrafts to the fleet, and remove old ones. Removing an old aircraft will also remove related flight information. An aircraft can have a status of "in repair" or "operational". Only operational aircraft can be assigned to new flights.

Routes can be added and removed by staff and contains a departure airport, arrival airport and the pricing information for tickets. A route is identified by its departure and arrival airports. An airport contains a unique code, name, and a location. Routes to and from specific airports can be queried by the public and further filtered by dates.

Platform to Use

We are planning to use PHP with the Oracle db hosted on the ugrad servers to create a flight booking web app.

Application Specification(simplified)

Book Flight: Customers can book flights.
Cancel Flight: Customers can cancel booked flights.
Add Flight: Staff can add flights.
Remove Flight: Staff can remove flights.
Add Aircraft: Staff can add aircrafts to the fleet.
Remove Aircraft: Staff can remove aircrafts.
Change Aircraft Status: Staff can change aircraft status between “in repair” and “operational”.
Add Route: Staff can add routes.
Remove Route: Staff can remove routes.
Add Airport: Staff can add airports.
Remove Airport: Staff can remove airports.

Routes from Airport Query: Customers and staff can search for routes from a specific airport.
Routes to Airport Query: Customers and staff can search for routes to a specific airport.
Available Flights (not fully booked) to/from Specific Airport Query: Customers and staff can search for flights that have empty seats from/to a specific airport.
Specific seating (economy/business/1stclass) for Flight Query: Customers and staff can search for seating of a specific flight.