

### 3380 An Airline Database System Project Report

**Design:** Our project utilized JavaScript and html for design and reading from the backend to display to the customer the available flights. In addition, the system allowed for us take input from the user then sends the information to the backend via a function call to the transaction function created in sql code. Using this function call, we were able to update the backend database appropriately.

**ER Model:** In this ER model, the primary keys are bolded and the foreign keys are italicized. For example, in the tickets table, the primary key is ticket\_no while the book\_ref and passenger\_id are foreign keys. In addition, some entries are both primary key and foreign key (see flight\_id in pilot\_detail) as the primary key determining the other attributes are foreign to another table.

Our project uses the front end to obtain input from the customer and using this information populates the appropriate tables. Using form validation, our front end ensures that the customer inputs in the appropriate inputs and using this our backend is sufficiently able to populate tables. To start, we populate bookings table, generating a random book\_ref, then the passenger table using the auto-generated passenger\_id. Next we insert into customer, card, and receipt tables. Now for the tricky part we only generate tickets for our passengers if there are sufficient seats in the flights selected. If there are we generate baggage\_no and insert the passenger baggage information into baggings and the boarding detail into boarding\_passes. Lastly, we generate a ticket and insert into ticket and ticket\_flights. We make sure to decrement the seats\_available in appropriate flights such as going and returning flights. We also had to account for the fact that some flights might be already filled, therefore our else statement inserted into book\_ref into the waitlist and kept a track of the customer position in the waitlist. Using this method we were able to avoid generating more tickets than seats available per flight.

