Construction Phases

Iteration one (Ended 02/05/2015)

* Created the basic structure of the system that includes the main boundary class that the user will interact with, the controller class that will coordinate all interactions between the entity classes and the interface class, and the user entity class that enables users to login and signup to the system.
* Implemented the login functionality
* Created the following classes:
  + userInteraction package:
    - UserController.java
    - UserEntity.java
    - UserInterface.java
  + role package:
    - Role.java
    - AbstractCustomerRole.java
    - CustomerRole.java
    - TravelAgencyRole.java
    - RoleFactory.java
  + Main file:
    - FlightManagementSystem.java
  + Database files:
    - userAccount.csv
* We tested the main interface of the system by running the program and comparing the program’s output against the expected output.
* To test the login functionality, we created test login details in the database (because signup functionality is not implemented yet) and we tried logging into the system with the same login details.

Iteration two (Ended 09/05/2015)

* Finished the skeleton of all the role classes and the options that will be offered by each role. These options are just text strings that are used to build the main menu for users of that particular role and do not refer to actual system functionality.
* Changed Role.java from an interface to an abstract class to allow subclasses to have a common method to create the main menu.
* Implemented the logout functionality
* Implemented the signup functionality
* Created the following classes:
  + role package:
    - FlightManagerRole.java
    - ProfileSystemManagerRole.java
    - ReportingSystemManagerRole.java
    - ReservationSystemManagerRole.java
    - ServiceSystemManagerRole.java
    - SystemAdministratorRole.java
  + helpers package:
    - UserLoginDetails.java
    - Booking.java
    - Flight.java
    - Person.java
  + booking package:
    - AirportController.java
    - AirportEntity.java
    - BookingController.java
    - CustomerController.java
    - FlightController.java
    - FlightEntity.java
    - PersonController.java
    - PersonEntity.java
    - PlaneController.java
    - RouteController.java
    - RouteEntity.java
    - SeatController.java
    - ServiceController.java
  + Database files:
    - userDetail.csv
    - airports.csv
    - flight-route-schedule.csv
    - routes.csv
* Modified the following classes:
  + userInteraction package:
    - UserController.java
    - UserEntity.java
    - UserInterface.java
  + role package:
    - Role.java
    - AbstractCustomerRole.java
    - CustomerRole.java
    - TravelAgencyRole.java
    - RoleFactory.java
  + Main file:
    - FlightManagementSystem.java
* We tested the individual role classes by creating test login details in the database for each role. Then we tried logging into the system with the same login details for each particular role.
* We tested the signup functionality by just performing the actions described in the Signup use case. Then we tried to login to the system using the newly created details.
* We tested the logout functionality by choosing the logout option from the main menu.
* We tested the partial functionality of the booking system by trying both expected input and unexpected input. Booking system is halfway complete. Should be complete and tested by the next iteration.
* Integration errors included method names that were incorrectly spelled and methods having the wrong return type. Apart from that, there were no major hindrances during systems integration.

Iteration three (Ended 16/05/2015)

* Implementing the booking functionality. This includes transactions such as adding user bookings, booked seats, booked services and payment.
* Added change password functionality.
* Created the following classes:
  + helpers package:
    - Service.java
    - ServiceBooking.java
    - Ticket.java
  + booking package:
    - BookingEntity.java
    - FleetController.java
    - FleetEntity.java
    - ServiceEntity.java
  + profile package:
    - ProfileController.java
    - ProfileEntity.java
  + Database files:
    - discount.csv
    - fleet.csv
    - otherPersons.csv
    - servicesInventory.csv
* Modified the following classes:
  + helpers package:
    - Booking.java
    - Flight.java
    - Person.java
    - UserLoginDetails.java 🡪 Customer.java
  + booking package:
    - AirportController.java
    - AirportEntity.java
    - BookingController.java
    - FlightController.java
    - FlightEntity.java
    - PersonController.java 🡪 moved to profile package
    - PersonEntity.java 🡪 moved to profile package
    - RouteController.java
    - RouteEntity.java
    - ServiceEntity.java
  + role package:
    - Role.java
    - AbstractCustomerRole.java
    - CustomerRole.java
    - TravelAgencyRole.java
  + Database files:
    - fleet.csv
    - flight-route-schedule.csv
    - userAccount.csv
* Deleted the following classes
  + booking package:
    - CustomerEntity.java
    - CustomerController.java
    - PlaneController.java
* Booking functionality complete. Have not done rigorous testing on it yet to determine correctness.
* Tested the change password functionality by changing the password for an account, and trying to login to the system using the old password and then trying to login to the system using the new password.
* Integration errors include missing import statements because one of the programmers is not using an IDE.

Iteration four (Ended 23/05/2015)

* Implemented booking functionality. Customers and travel agencies are able to book flights, seats and services on flights.
* Implemented the edit account details functionality. Customers and travel agencies are able to edit the details of their account.
* Implemented the cancel booking functionality. Customers and travel agencies can cancel bookings they have made. They will be charged a cancellation fee.
* Added the following classes:
  + helpers package:
    - Airport.java
    - Plane.java
    - Route.java
  + Database files:
    - booking.csv
    - services\_booked.csv
    - tickets.csv
* Modified the following classes:
  + booking package:
    - AirportController.java
    - AirportEntity.java
    - BookingController.java
    - BookingEntity.java
    - FleetController.java
    - FlightController.java
    - FlightEntity.java
    - RouteController.java
    - RouteEntity.java
  + helpers package:
    - Booking.java
    - Flight.java
    - Person.java
    - Ticket.java
  + profile package:
    - ProfileController.java
    - ProfileEntity.java
  + role package:
    - AbstractCustomerRole.java
    - FlightManagerRole.java
    - ProfileSystemManagerRole.java
    - ReservationSystemManagementRole.java
  + Database files:
    - userAccount.csv
* Deleted the following classes:
  + booking package:
    - SeatController.java
* Tested the booking functionality by running through all possible paths through the booking procedure.
* Tested the cancel booking functionality by running the procedure and checking whether the correct flights associated with the user are shown. Then after user has selected a flight to cancel, the system should change the status of the booking to “Cancelled”.
* Tested the edit account details functionality by editing each possible detail of a user and checking whether it is properly reflected in the database file.
* Tested the view all bookings functionality by running the procedure and checking whether the correct flights associated with the user are shown.
* No integration issues for this phase.

Iteration five (Ended 30/05/2015)

* Added the Normal Staff role into the system. Now all manager classes descend from this class, and in turn, this Normal Staff role class descends from the topmost Role class.
* Added cancel customer booking, make booking for customer, and edit services for customer functionality for the Normal Staff. Manager role classes also receive these functionalities.
* Added the add services, remove services, edit service price, and edit service availability functionality for the Service System Manager role. Now the Service System Manager can perform all these services.
* Added the set ticket prices, change frequent flier points discount ratio and set cancellation fee functionality for the Reservation System Manager.
* Added edit travel agency and customer profile, and close user account functionality for the Profile System Manager.
* Added the edit watch and no fly list for the Profile System Manager and Reservation System Manager. Now they can edit the fly status of customers.
* Added the manage routes, manage fleet, manage flight schedule and mange airports functionality for the Flight Manager.
* Added the reporting subsystem. However, not all the roles have reports available yet.
* Removed the Reporting System Manager role because of a mismatch in the requirements. This role was not needed in the first place.
* Added the following classes:
  + helpers package:
    - Airport.java
    - Plane.java
    - Route.java
    - Staff.java
  + main package:
    - FlightManagementSystem.java
  + report package:
    - ReportBuilder.java
  + role package:
    - NormalStaffRole.java
  + Database files:
    - booking\_constants.csv
* Modified the following classes:
  + booking package:
    - AirportController.java
    - AirportEntity.java
    - BookingController.java
    - BookingEntity.java
    - FleetController.java
    - FleetEntity.java
    - FlightController.java
    - FlightEntity.java
    - RouteController.java
    - RouteEntity.java
    - ServiceController.java
    - ServiceEntity.java
  + helpers package:
    - Booking.java
    - Customer.java
    - Flight.java
    - Person.java
    - Service.java
    - ServiceBooking.java
    - Ticket.java
  + profile package:
    - ProfileController.java
    - ProfileEntity.java
  + role package:
    - AbstractCustomerRole.java
    - CustomerRole.java
    - FlightManagerRole.java
    - ProfileSystemManagerRole.java
    - ReservationSystemManagerRole.java
    - Role.java
    - RoleFactory.java
    - ServiceSystemManagerRole.java
    - SystemAdministratorRole.java
    - TravelAgencyRole.java
  + Database files:
    - airports.csv
    - booking.csv
    - fleet.csv
    - flight-route-schedule.csv 🡪 flight\_schedule.csv
    - otherPersons.csv 🡪 persons.csv
    - routes.csv
    - serviceInventory.csv 🡪 services.csv
    - services\_booked.csv
    - tickets.csv
    - userAccount.csv 🡪 user\_account.csv
    - userDetail.csv 🡪 user\_details.csv
* Deleted the following classes
  + role package:
    - ReportingSystemManager.java
  + profile package:
    - PersonController.java
    - PersonEntity.java
* Tested the adding of the Normal Staff role and its functionalities by trying to access those functionalities from the Normal Staff role and also from its subclasses.
* Tested the functionalities for the Service System Manager role by running through all the functionalities and checking for abnormalities and errors. All functionalities were found to be working well.
* Tested the functionalities for the Reservation System Manager by running through all the functionalities and checking for abnormalities and errors. All functionalities were found to be working well.
* Tested the functionalities for the Profile System Manager by running through all the functionalities and checking for abnormalities and errors. All functionalities were found to be working well.
* Tested the edit watch and no fly list functionality by trying to change the fly status of a customer from the Profile System Manager and Reservation System Manager roles. Found to be working well.
* Tested the functionalities for the Flight Manager by running through all the functionalities and checking for abnormalities and errors. All functionalities were found to be working well.
* Tested the functionalities of the reporting subsystem. The reports that have been implemented were found to be working well.
* Tested the system since the deletion of the Reporting System Manager role. The system is found to be working well.
* Some defects found where the input buffer would contain a newline character and would cause the system to receive invalid input.
* No integration issues occurred during this phase.