CS314 Homework 3: A Generalized Booking System

Due Date: Before midnight, October 30, 2012. Submit via RamCT

Assignment Objective
The objective is to give you some experience in generalizing software solutions.

Problem Statement
In Homework 1 you implemented part of an Airline Booking System (ABS). In this homework you will extend the program you wrote in Assignment 1 so that it can be used to book cabins on cruise trips as well as seats on flights. The extended program thus supports the building and management of bookings of 2 subsystems: Airline and Cruise subsystems. Write your program to exploit polymorphism and avoid a coding the solution as two completely separated solutions.

Extend your program from Assignment 1 in the following manner:

1. Develop a password-protected administrator user interface (UI) that allows a system administrator to do the following:
   a. Create airports, airlines, and flights with flight sections and seats.
   b. Create cruises, ports, trips, and ships with cabin sections and cabins.
   c. Print the current state of the airline subsystem including information on seats that are available and booked on each flight.
   d. Print the current state of the cruise subsystem including information on cabins that are available and booked on each cruise trip.

2. Develop a customer UI that allows a customer to:
   a. Find an available seat on a flight and book the available seat.
   b. Find an available cabin on a cruise trip and book the available cabin.

Information on cruises
A cruise (e.g., the Alaskan Cruise Co.) is associated with a number of trips, where each trip starts on a start-date and ends on an end-date. A trip cannot last more than 21 days. Each trip visits a fixed sequence of ports. Each trip is assigned a ship. Note that a ship can be assigned to more than one trip as
long as the trip dates do not overlap. Cabins on a ship are grouped into the following sections: Family (can hold a maximum of 4 persons), Deluxe Family (can hold a maximum of 6 persons), Couples (can hold a maximum of two persons), and Deluxe Couples (can hold a maximum of two persons).

**Deliverables**
You are required to submit the following:

1. Running Java Code (you will get 0 for this assignment if your code does not run).
2. Class model of your program design.