

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 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.