CECS 277 LAB UML

OBJECTIVE: Give you some first hand experience in doing UML class diagrams.

INTRODUCTION: The best way to save time when starting on a development project of any size is to do some design work first. In CECS 343 you will learn a number of different UML graphical languages. Each of them has its focus and intended purpose. In this class we will find that the class diagram provides us with the best advantage. In this lab, I will present you with a set of business rules that you have to model in a UML class diagram.

The graphical design tool that we will use for this is DIA, a free tool available here. If you are one of my MAC OS friends, there is a DIA port for that operating environment as well. Once you have DIA running, select the UML stencil and start modeling. I have a short tutorial on DIA here.

PROCEDURE: You are to design the classes needed to manage a subset of the ticket information for an airline:

1. A given airline operates any number of flights.
2. A flight is only operated by a single airline.
3. Each flight leaves from one city and arrives at another city.
4. Each flight has a scheduled start and end date and time. Do not assume that all flights end on the same day that they begin.
5. Each flight is staffed by two pilots and a variable number of cabin attendants.
    a. The pilots are salaried and have a weekly pay.
    b. The cabin attendants have an hourly rate that the airline pays them.
    c. Both the cabin attendants and pilots work the airline and they are uniquely identified by an employee number.
6. Each flight involves an airplane.
    a. The airplane has a manufacturer and a tail number.
    b. The tail number uniquely identifies the airplane.
    c. The seats in the airplane are identified by row number and seat letter, such as 13B.
7. Each passenger on a flight has one and only one seat on that flight. Be careful how you model this as we need to know the seat and the passenger in the context of the given flight. That same airplane will likely have a different passenger in a given seat from one flight to the next.

WHAT TO TURN IN:

- Your DIA model of the above business rules.
- Be sure to:
    - Come up with at least 2 attributes for each class.
    - Names and role names for your associations as well as the multiplicities at each end.