COMP 360-01 Programming Languages Spring 2024

Project 2

Due Date: April 9

Objective: An object-oriented programming language supports abstraction, encapsulation, inheritance and polymorphism. Inheritance is a means for incrementally building new types from an existing parent type by inheriting, modifying, or adding to both the existing components and operations of the parent type. Inheritance greatly supports reuse in the software development process. Graphical User Interfaces (GUI) is another technique that provides a friendly environment for users. Students will practice these techniques in this project.

Project Assignment

Design and implement an ABC Hotel Reservation System for the ABC hotel in New York city. ABC Hotel has three types of rooms. One is a regular room that has one queen bed. Another is a deluxe room that has one queen bed and one twin bed. The third type is a junior suit that has one queen bed, one twin bed and one sofa. The regular room price is $200 per night. The deluxe room price is $300 per night. The Junior suit price is $350 per night. This system should allow an agent to input a customer name, selected room type, arrival and departure dates. It should also provide the capability to calculate the total charge and display it on the screen. The ABC Hotel Reservation System must satisfy the following requirements:

1) A Graphic User Interface should be developed to allow an agent to input required information.
2) A constructor sets the number of each type of room.
3) A person reserves a room via *makereservation* method. This method returns an integer indicating the room number. If a customer tries to reserve a room but the rooms are sold out an error message should be displayed.
4) If a customer reserves a room the person's name, arrival date, departure date, room number and total charge should be displayed.
5) Single inheritance must be used to demonstrate the concept of inheritance.
6) Static polymorphic and dynamic polymorphic implementation must be demonstrated.

Requirements:

a) This is a two-person team project.
b) The team should use department programming standards.
c) The program must execute correctly.
d) Email your program to Yang Liu yliu2@aggies.ncat.edu.