CSE212: SOFTWARE DEVELOPMENT METHODOLOGIES

YEDITEPE UNIVERSITY

SPRING 2023

ASSIGNMENT 4 – DUE DATE MARCH 27TH, 2023

Below, you can find the description of your fourth assignment, which also includes its output in the *Application Walkthrough* section.

In this assignment, you are expected to improve your existing Hotel Reservation System by incorporating inheritance hierarchy and enumerations.

You should add six new classes for different room types called *Single*, *Double*, *Club*, *Family*, *FamilyView* and *Suite,* which all should be inherited from the *Room* class and should all be its subclass. Thus, you need to initialize each subclass with its relevant room specifications, as provided below, using its constructor and set the instance variables.

Room Type	dailyCost	roomSize	hasBath
Single	$100	15	False
Double	$180	30	False
Club	$250	45	True
Family	$400	50	False
Family with View	$450	50	True
Suite	$650	80	True

Additionally, you are required to add a *static* int variable named *totalNumOfReservations* in your *Reservation* class, which will hold the total number of reservations. In the main method, this variable must be utilized to keep track of the total number of reservations and should be incremented using the dot operator (*Class.variable*) every time a new reservation instance is created. Then, this variable should be used to print the total number of reservations.

You need to use Enumerations to specify the menu options by creating a new enum class called *MenuOptions*. You should print the menu in the main method using the enum constants' textual representations. Furthermore, you are required to check the user input for the menu by comparing the *MenuOptions* constants.

When the application is started, it should prompt the user with the following menu:

```
1. Create new Reservation
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
```

When the user selects the 1st option, s/he should be prompted to enter the relevant information (values corresponding to instance variables) for a new *Room*. The default room type will be a *Single*.

When the user selects the 2nd option, the system will expect the user to input the generic information about the reservation and lastly the type of the room. The *roomType* provided by the user then should be compared using *equals()* method and a relevant type of subclass instance should be created. Then, the created object, which will be a subclass of *Room*, should be added to the *Reservation* object via its constructor. Then fully constructed *Reservation* objects should be stored in an array for later use.

When the user selects the 3rd option, the information about all reservations should be printed with the help of the existing *displayInfo()* method.

When the user selects the 4th option, the total number of reservations should be printed by calling the static class variable *totalNumOfReservations*.

When the user selects the 5th option, the application should be terminated.

Application Walkthrough

```
1. Create new Reservation
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
1
```

```
Hotel Name: Hilton
Reservation Month: April
Reservation Start: 10
Reservation End: 16

Reservation created!

1. Create new Reservation
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
2

ROOM INFOS:

Room Type: Single, Daily Cost: 100, Room Size: 15, Has Bath: false
Room Type: Double, Daily Cost: 180, Room Size: 30, Has Bath: false
Room Type: Club, Daily Cost: 250, Room Size: 45, Has Bath: true
Room Type: Family, Daily Cost: 400, Room Size: 50, Has Bath: false
Room Type: Family With View, Daily Cost: 450, Room Size: 50, Has Bath: true
Room Type: Suite, Daily Cost: 650, Room Size: 80, Has Bath: true

Hotel Name: Ramada
Room Type: Suite
Reservation Month: July
Reservation Start: 20
Reservation End: 24

Reservation created!

1. Create new Reservation
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
3

Reservation for a Single room in Hilton starts on April 10 and ends on April
16. Reservation has a total cost of $600.

Reservation for a Suite room in Ramada starts on July 20 and ends on July 24.
Reservation has a total cost of $5200.


1. Create new Reservation
```

```
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
4

2 reservations created so far.

1. Create new Reservation
2. Create new Reservation with Room Type
3. Display all Reservations
4. Display the total number of reservations
5. Exit
5
```

Submit your assignments in a zip file, which has your student number as name, through the YULEARN (https://yulearn.yeditepe.edu.tr) latest by the end of Friday, March 27th, 2023.