CPIT252 PROJECT

Explaining The Design Patterns in the project

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Section HI

Introduction

Our Project is the Car Rental System, in which there are two types of users: admin and customer, The Customer can make car reservations or cancel them, and handover car to admin and calculate reservation cost. The admin can switch car availability to the customer or complete handover operations by customer. In our project we used 4 Design Patterns which are explained below.

1- Singleton

Implemented in DBConnection.java, this is implemented to limit connections to the database to one instance. Used in LoginForm.java and Server.java

2- Prototype

Implemented in ReservationPrototype.java (Interface) and Reservation.java, we used the prototype to clone reservations object to prevent data inconsistency if the operations are not completed or an error occurred, so all operations use the cloned object (except the make new reservation which creates a new reservation object) to prevent unacceptable changes to the source object.

3- Command

Implemented in CRSClasses.Commands package. All user operations are sent as command objects to the server which executes the commands in the client threads (ClientThread.java). This design simplified the communications between the clients and the server but at the cost of more classes being created for each operation.

4- Façade

Implemented in CustomerFacade.java, it is used as an interface for operations on the reservation object by the customer. The Customer Façade handles making a new reservation, cancelling a reservation, and car handover to admin operations and any new reservation operation are going to be implemented in the customer façade.