

template or strategy

You are building software for a car rental company. The company rents out cars to customers and charges them based on the type of car and the rental period. The company wants to offer different pricing for their customers. For example, for long-term rentals, they want to offer a discounted rate, for luxury cars, they want to charge a premium, and for repeat customers, they want to offer a loyalty discount.

The company wants to be able to easily add new pricing and change existing ones without affecting the rest of the system.

Each Car must have these properties:

- Car Type (normal/luxury)
- Number of visit

Rent pricing:

- Regular renting costs 500tk/day.
- For a luxury car 200tk/day is added.
- Discount will be calculated on the final price.
- If the rent period exceeds 30 days, a 10% discount is applied.
- For the repeating customer loyalty discount is calculated as

$$\text{follows: } \text{floor}\left(\frac{\text{total visit}}{5}\right) * 5\%$$

For demonstration purposes you should first create some cars. Then you enter your system. You should choose a car first. Then your system should ask the rental period for that car. Then you calculate the total renting cost and show it as output. Also, increase the number of visits by one for that car.

Your task is to implement the car renting application using an appropriate design pattern.