Project Car Rental

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CME 1252   Project Based Learning

Izmir

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• **INTRODUCTION**

In this project the system simulates a car rental company.

The company has several offices and three types of cars.

Our most important goal is to develop this car rental company.

• Scheduling

Week1

Meeting with group friends.
Discussing solutions.
Starting write a code.

Week2

We started to write Add/list for office and employee.

Week3

Add/list for customer/car. Delete commands for office and employee.

Week4

Add/list for CarRequest. After that ListContract command.

Week5

The last week we did nextday,statistics, prepared presentation and poster.
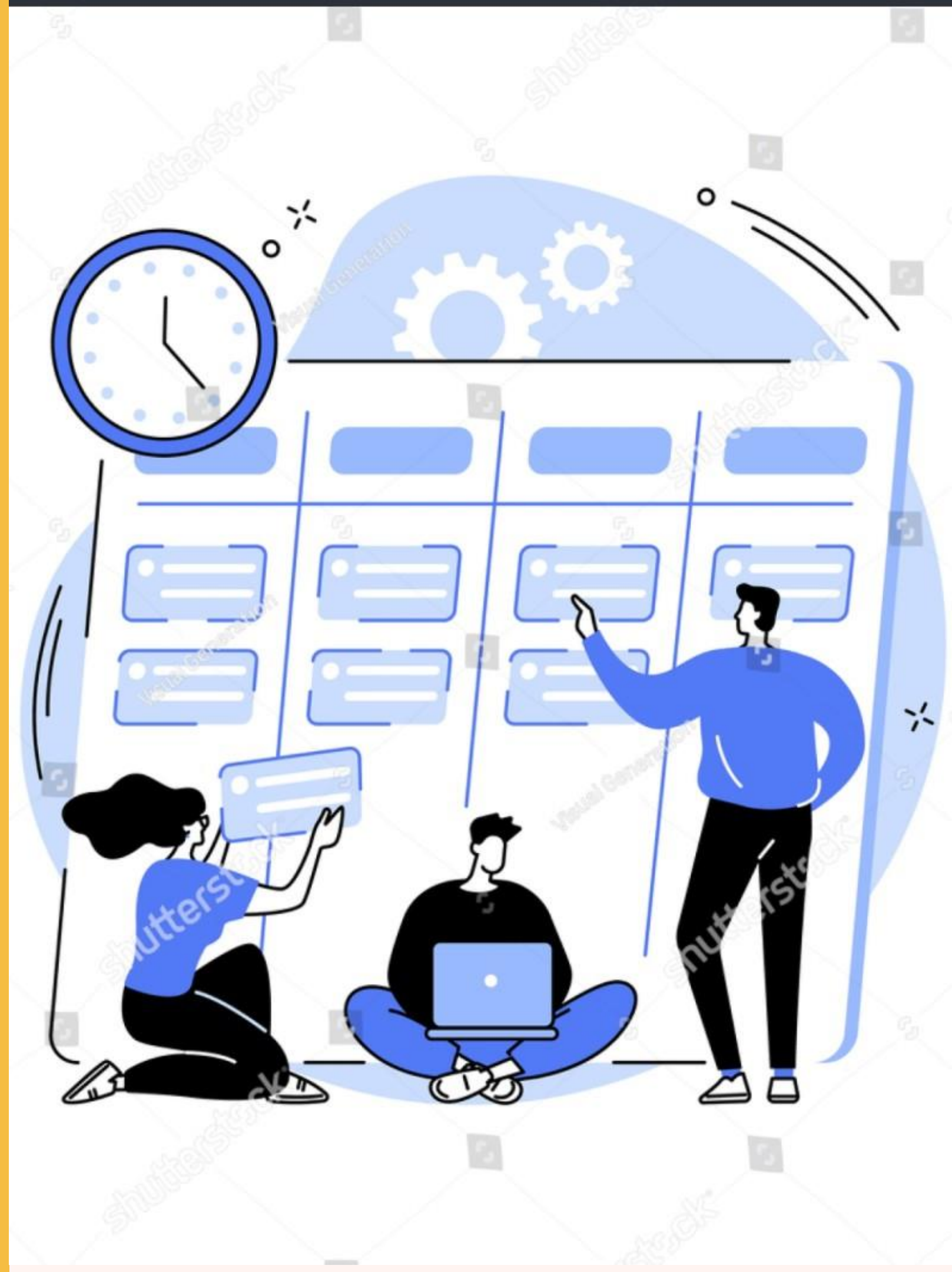
- # **TASK SHARING**

🛡️ Coding

🛡️ Debugging

🛡️ Poster

🛡️ Reports

🛡️ Presentation

• <u>REQUIREMENTS</u>

• COMPLETED TASKS

Ekin Uzunbaz:

- Add and list for carRequest
- Add and list Office/employee
- Delete office
- Making contracts and listing them
- Some of the nextday operations
- Half of the statistics commands

Yüksel Baltacıoğlu:

- Add random carRequest and Nrequest commands
- Delete employee
- Main class design and commands
- File reading
- Some of the nextday operations
- Half of the statistics commands

Aslan Tuyak:

- List Office/employee/
- Car/customer
- Designing poster
- Creating the presentation
- Add Office/employee/car/customer

- # INCOMPLETED TASKS

All given tasks has been completed.

ADDITIONAL IMPROVEMENTS

We can record the car request is accepted or denied.

```
>listCarRequest
   1.CarRequest;1;3;*;*;economy;1.1.2021;4.1.2021 - accepted
   2.CarRequest;1;5;*;*;sports;1.1.2021;3.1.2021 - accepted
   3.CarRequest;1;5;*;*;luxury;2.1.2021;4.1.2021 - denied
   4.CarRequest;1;2;*;*;luxury;1.1.2021;8.1.2021 - denied
   5.CarRequest;2;2;Honda;*;*;1.1.2021;3.1.2021 - accepted
   6.CarRequest;2;2;*;*;sports;1.1.2021;1.1.2021 - denied
   7.CarRequest;2;2;Ferrari;*;*;1.1.2021;1.1.2021 - denied
```

• PROBLEMS ENCOUNTERED

The main problem we have faced:

- NullPointer exception → Because of the size of array, not all indexes are filled.

Avoided by creating methods that only includes filled indexes and using some conditions.

- Keeping the last 10 statistics → Avoided by creating 10 size of array (i.e. 0th index for 1st day, 1st index for 2nd day etc.).

- # <u>SCREENSHOTS</u>

```
>>>nextday
---Office Profits---
Office1 incomes: 300 cp
    Car1: 100
    Car2: 200
Office1 expenses: 290
    Office rent: 100
    Employee salaries: 60
    Employee performance bonuses: 5 + 10 = 15
    Car1 maintenance: 20 + 5 = 25 (100 km)
    Car2 maintenance: 70 + 20 = 90 (200 km)
Office1 profit: 10 cp

Office2 incomes: 200 cp
    Car5: 200
Office2 expenses: 230
    Office rent: 100
    Employee salaries: 30
    Employee performance bonuses: 10 = 10
    Car5 maintenance: 70 + 20 = 90 (200 km)
Office2 profit: -30 cp
```

• <u>SCREENSHOTS</u>

```
>addCustomer;Ilker;Yildirim
>addCustomer;Sibel;Ay
>addCustomer;Gulay;Uz
>addCustomer;Murat;Kaya
>addCustomer;Cem;Bilir
>listCustomer
    1.Customer;Ilker;Yildirim
    2.Customer;Sibel;Ay
    3.Customer;Gulay;Uz
    4.Customer;Murat;Kaya
    5.Customer;Cem;Bilir
>>>load;input2.txt
>addCarRequest;1;3;*;*;economy;1.1.2021;4.1.2021
    Contract:Employee1;Customer3;Car1;1.1.2021;4.1.2021
>addCarRequest;1;5;*;*;sports;1.1.2021;3.1.2021
    Contract:Employee2;Customer5;Car2;1.1.2021;3.1.2021
>addCarRequest;1;5;*;*;luxury;2.1.2021;4.1.2021
    Error:Car request must be for today!
    Error:No employee for the contract!
>addCarRequest;1;2;*;*;luxury;1.1.2021;8.1.2021
    Error:Car requests must be for 1-4 days!
    Error:No employee for the contract!
>addCarRequest;2;2;Honda;*;*;1.1.2021;3.1.2021
    Contract:Employee3;Customer2;Car5;1.1.2021;3.1.2021
>addCarRequest;2;2;*;*;sports;1.1.2021;1.1.2021
    Error:Car not available!
    Error:No employee for the contract!
>addCarRequest;2;2;Ferrari;*;*;1.1.2021;1.1.2021
    Error:No car!
    Error:No employee for the contract!
```

• <u>SCREENSHOTS</u>

```
>listCarRequest
    1.CarRequest;1;3;*;*;economy;1.1.2021;4.1.2021 - accepted
    2.CarRequest;1;5;*;*;sports;1.1.2021;3.1.2021 - accepted
    3.CarRequest;1;5;*;*;luxury;2.1.2021;4.1.2021 - denied
    4.CarRequest;1;2;*;*;luxury;1.1.2021;8.1.2021 - denied
    5.CarRequest;2;2;Honda;*;*;1.1.2021;3.1.2021 - accepted
    6.CarRequest;2;2;*;*;sports;1.1.2021;1.1.2021 - denied
    7.CarRequest;2;2;Ferrari;*;*;1.1.2021;1.1.2021 - denied
```

• <u>SCREENSHOTS</u>

```
Welcome to DEUCENG Car Rental Company!
>>>load;input.txt
>addOffice;02324449988;21 Sokak No:50;Izmir
>addOffice;02325678990;56 Sokak No:60;Ankara
>listOffice
    1.Office;02324449988;21 Sokak No:50;Izmir
    2.Office;02325678990;56 Sokak No:60;Ankara
>addEmployee;Burcu;Fidan;Female;29.5.1988;1
>addEmployee;Adem;Deniz;Male;15.6.1980;1
>addEmployee;Bahar;Korkmaz;Female;28.11.1978;2
>listEmployee;1
    1.Employee;Burcu;Fidan;Female;29.5.1988;1
    2.Employee;Adem;Deniz;Male;15.6.1980;1
>listEmployee;2
    3.Employee;Bahar;Korkmaz;Female;28.11.1978;2
>addCar;Audi;Q7;economy;0;1
>addCar;BMW;X3;sports;0;1
>addCar;Mercedes;CLA;luxury;0;1
>addCar;Renault;Clio;economy;0;2
>addCar;Honda;Civic;sports;0;2
>listCar;1
    1.Car;Audi;Q7;economy;0;1 - available
    2.Car;BMW;X3;sports;0;1 - available
    3.Car;Mercedes;CLA;luxury;0;1 - available
>listCar;2
    4.Car;Renault;Clio;economy;0;2 - available
    5.Car;Honda;Civic;sports;0;2 - available
```

• <u>SCREENSHOTS</u>

```
--- Office Statistics of the Last 10 Days ----
---Office1---
    The most rented car: Car2;BMW;X3
    The most rented car class: sports
    The car with the highest profit: Car2;BMW;X3
    The car class with the highest profit: sports
    The average number of days the cars are rented: 3,5 days
    The customer who rented most: Customer3;Gulay;Uz
    The employee who rented most: Employee2;Adem;Deniz
    The most profitable employee: Employee2;Adem;Deniz (200 - 90 = 110 cp)
    Average income levels of the employees for the office: 92 cp
---Office2---
    The most rented car: Car5;Honda;Civic
    The most rented car class: sports
    The car with the highest profit: Car5;Honda;Civic
    The car class with the highest profit: sports
    The average number of days the cars are rented: 3,0 days
    The customer who rented most: Customer2;Sibel;Ay
    The employee who rented most: Employee3;Bahar;Korkmaz
    The most profitable employee: Employee3;Bahar;Korkmaz (200 - 90 = 110 cp)
    Average income levels of the employees for the office: 55 cp
>>>listContract
    1.Contract:Employee1;Customer3;Car1;1.1.2021;4.1.2021
    2.Contract:Employee2;Customer5;Car2;1.1.2021;3.1.2021
    3.Contract:Employee3;Customer2;Car5;1.1.2021;3.1.2021
```

• <u>SCREENSHOTS</u>

```
>>>addCar;Renault;Talismann;economy;0;1
>>>addCar;Fiat;Egea;economy;0;1
>>>listCar;1
    1.Car;Audi;Q7;economy;100;1 - not available
    2.Car;BMW;X3;sports;200;1 - not available
    3.Car;Mercedes;CLA;luxury;0;1 - not available
    6.Car;Renault;Talismann;economy;0;1 - available
    7.Car;Fiat;Egea;economy;0;1 - available
>>>addCar;Seat;Leon;sport;0;2
>>>addCar;Wolsvagen;Arteon;luxury;0;2
>>>listCar;2
    4.Car;Renault;Clio;economy;0;2 - available
    5.Car;Honda;Civic;sports;200;2 - not available
    8.Car;Seat;Leon;sport;0;2 - available
    9.Car;Wolsvagen;Arteon;luxury;0;2 - available
>>>deleteEmployee;1;1
>>>listEmployee;1
    2.Employee;Adem;Deniz;Male;15.6.1980;1
>>>addCarRequestRandom;1;*
    Error:No car!
```

CONCLUSION

We have learnt:

How to use classes.

We improved our skills on java.

Working with a team.

REFERENCES

https://docs.oracle.com/javase/8/docs/api/java/lang/ Class.html

https://welcome.stepik.org

Basic I/O Operations in Java (Input/Output Streams) (softwaretestinghelp.com)

(3) Java Programlama Dersleri 18 - OOP Giriş ve Classlar (Sınıflar) - YouTube

java - What is a NullPointerException, and how do I fix it? - Stack Overflow

Null Pointer Exception In Java – GeeksforGeeks

(3) Build your first OOP application in Java with example - Building a School Management System - YouTube

POSTER

Thank you for your attention !