Nama : Ananda Novianshaf
NIM : 1237050054
Kelas : A

PENGUMPULAN UAS ALPRO - SCREENSHOT PROGRAM
PROGRAM RENTAL MOBIL

● Main Menu

```
===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: 1
```

● Opsi 1 - Rent a Car

```
== Rent your dream JDM Car ==

Enter your name: Ananda

Available JDM Cars:
C001 - Nissan GTR R35 | JPY 120000
C002 - Nissan Skyline R34 | JPY 118950
C003 - Nissan Acura NSX | JPY 117650
C004 - Nissan Fairlady Z | JPY 100000
C005 - Toyota Supra MK4 | JPY 115000
C006 - Honda Civic Turbo | JPY 60000
C007 - Honda Civic Type R | JPY 80000
C008 - Mazda RX-7 | JPY 50000
C009 - Mazda RX-8 | JPY 45500
C010 - Lancer Evo 8 | JPY 77800

Enter the car ID you want to rent: C001
Enter the number of days for rental: 3

== Rental Information ==

Customer ID: CUS1
Customer Name: Ananda
Car: Nissan GTR R35
Rental Days: 3
Total Price : JPY 360000
Confirm this rental? (Y/N): Y

Wonderful, have a good day with that beast :D
```

Sekarang mobil dengan kode C001 sudah tidak bisa dirental lagi, karena mobil tersebut sudah dirental oleh "Ananda", jadi mobil tersebut akan hilang dari list, dan saat kita memasukan kode C001 untuk dirental lagi, akan muncul error.

- C001 hilang dari list

```
== Rent your dream JDM Car ==

Enter your name: Opal

Available JDM Cars:
C002 - Nissan Skyline R34 | JPY 118950
C003 - Nissan Acura NSX | JPY 117650
C004 - Nissan Fairlady Z | JPY 100000
C005 - Toyota Supra MK4 | JPY 115000
C006 - Honda Civic Turbo | JPY 60000
C007 - Honda Civic Type R | JPY 80000
C008 - Mazda RX-7 | JPY 50000
C009 - Mazda RX-8 | JPY 45500
C010 - Lancer Evo 8 | JPY 77800

Enter the car ID you want to rent: 
```

- Ketika C001 ingin dirental, akan muncul error

```
Enter your name: Opal

Available JDM Cars:
C002 - Nissan Skyline R34 | JPY 118950
C003 - Nissan Acura NSX | JPY 117650
C004 - Nissan Fairlady Z | JPY 100000
C005 - Toyota Supra MK4 | JPY 115000
C006 - Honda Civic Turbo | JPY 60000
C007 - Honda Civic Type R | JPY 80000
C008 - Mazda RX-7 | JPY 50000
C009 - Mazda RX-8 | JPY 45500
C010 - Lancer Evo 8 | JPY 77800

Enter the car ID you want to rent: C001
Enter the number of days for rental: 2

Invalid car & data selection or the car is not available for rent.
```

Hal ini berlaku ke mobil yang lainnya, setiap mobil hanya memiliki 1 stock saja.

- Opsi 2 - Return a Car

```
===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: 2

== Return a Car ==

Enter the car ID you want to return: C001
Thank you. The beast ' Nissan GTR R35 ' has been returned successfully by Ananda
```

Akan muncul nama mobil yang dikembalikan beserta nama penyewanya

Jika ID mobil yang ingin dikembalikan tidak sesuai (tidak direntalkan), maka akan muncul pesan error

```
== Return a Car ==

Enter the car ID you want to return: C003

Invalid car ID or car is not rented.
```

- Opsi 3 - Exit

Program akan berhenti

```
===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: 3

Thank you for using the JDM Lovers Rentals!
PS C:\Users\User\Documents\Alprog>
```

Dii bawah ini merupakan error handling yang tersedia di program saya. Jadi program tidak akan berhenti ketika input user error, dan akan mengulang untuk menginputkan kembali

- Input Opsi di awal terisi angka yang tidak sesuai

```
===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: 4

Invalid choice. Please enter a valid option :)

===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: -2

Invalid choice. Please enter a valid option :)
```

- Input Opsi di awal tidak menggunakan angka (integer)

```
===== JDM Lovers Rentals =====
1. Rent a Car
2. Return a Car
3. Exit
Enter your choice: []\./

Invalid input. Please enter a number.
```

- Opsi 1 - Input ID Car tidak sesuai

```
Enter the car ID you want to rent: `[];'`
Enter the number of days for rental: 2

Invalid car & data selection or the car is not available for rent.
```

- Opsi 1 - Input hari rental 0 atau negatif

```
Enter the car ID you want to rent: C002
Enter the number of days for rental: -2

An unexpected error occurred: Rental days must be greater than zero.
```

- Opsi 1 - Validasi Rental selain Y/N

```
== Rental Information ==

Customer ID: CUS5
Customer Name: ANANDA
Car: Nissan Acura NSX
Rental Days: 5
Total Price : JPY 588250
Confirm this rental? (Y/N): -2

Please enter a correct validation!
```

- Opsi 2 - ID Car tidak sesuai

```
== Return a Car ==

Enter the car ID you want to return: opwt

Invalid car ID or car is not rented.
```

Selain itu, saya sudah memberikan error handling di tiap-tiap constructor kelas nya, ini berguna ketika suatu saat author mengubah isi dari kode, dan ketika terjadi kelupaan akan diingatkan oleh error handling ini

- Contoh - Lupa memberi nama brand (brand kosong/null)

```
    Car car3 = new Car(carId:"C003", brand:"", model:"Acura NSX", basePricePerDay:117650);
```

maka akan muncul peringatan saat kode dijalankan :

```
PS C:\Users\User\Documents\Alprog>  c:; c
.0.8.101-hotspot\bin\java.exe' '-XX:+Show
workspaceStorage\2b3d9d3516c6be24ba11037f
Error: Brand cannot be null or empty.
PS C:\Users\User\Documents\Alprog>
```

Nah diatas kan contoh ketika programnya belum bisa sama sekali jalan (karena kesalahan author). Dibawah ini contoh kesalahan dari pengguna saat menginput

- Ketika nama kosong saat merental

```
== Rent your dream JDM Car ==

Enter your name:

Available JDM Cars:
C001 - Nissan GTR R35 | JPY 120000
C002 - Nissan Skyline R34 | JPY 118950
C003 - Nissan Acura NSX | JPY 117650
C004 - Nissan Fairlady Z | JPY 100000
C005 - Toyota Supra MK4 | JPY 115000
C006 - Honda Civic Turbo | JPY 60000
C007 - Honda Civic Type R | JPY 80000
C008 - Mazda RX-7 | JPY 50000
C009 - Mazda RX-8 | JPY 45500
C010 - Lancer Evo 8 | JPY 77800

Enter the car ID you want to rent: C002
Enter the number of days for rental: 2

An unexpected error occurred: Name cannot be null or empty
```

Untuk lebih jelasnya, berikut errror handling yang saya masukan ke tiap konstruktor

- Class Car

```java
public Car(String carId, String brand, String model, int basePricePerDay) {
    if (carId == null || carId.trim().isEmpty()) {
        throw new IllegalArgumentException(s:"Car ID cannot be null or empty.");
    }
    if (brand == null || brand.trim().isEmpty()) {
        throw new IllegalArgumentException(s:"Brand cannot be null or empty.");
    }
    if (model == null || model.trim().isEmpty()) {
        throw new IllegalArgumentException(s:"Model cannot be null or empty.");
    }
    if (basePricePerDay <= 0) {
        throw new IllegalArgumentException(s:"Base price per day must be greater than zero.");
    }
```

- Class Customer

```java
public Customer(String customerId, String name) {
    if (customerId == null || customerId.trim().isEmpty()) {
        throw new IllegalArgumentException(s:"Customer ID cannot be null or empty.");
    }
    if (name == null || name.trim().isEmpty()) {
        throw new IllegalArgumentException(s:"Name cannot be null or empty.");
    }
}
```

- Class Rental

```java
public Rental(Car car, Customer customer, int days) {
    if (car == null) {
        throw new IllegalArgumentException(s:"Car cannot be null.");
    }
    if (customer == null) {
        throw new IllegalArgumentException(s:"Customer cannot be null.");
    }
    if (days <= 0) {
        throw new IllegalArgumentException(s:"Days must be greater than zero.");
    }
}
```

Sekian hasil screenshot dari program saya, mohon maaf bila masih ada banyak kesalahan, terimakasih.