main_car_rental

February 10, 2024

0.1 Online Car Rental Platform

Caltech AI & Machine Learning Bootcamp

Batch 2 - Jan 2024

Course 2 Project: CB AIML Foundations: Programming Refresher

By: Eric Michel

Date: Feb 3, 2024   Problem Statement:

A car rental company has requested you to develop an online platform for renting cars where customers can easily view the cars available for rental on an hourly, daily, or weekly basis. The company will show the current inventory and verify requests by checking the available stock. Upon returning the car, customers will receive an automatically generated bill.

For simplicity, let's assume that: 1. Customers may rent cars using one of the following options: hourly, daily, or weekly rental. 2. Customers can freely choose the number of cars they wish to rent as long as the quantity of available cars exceeds their requested amount.

```python
[1]: #Main Project File

# Import the car rental module
from CarRental import CarRental

RentCarApp = CarRental()


# Main method
def main():

    #Initialize the app with initial configurations
    RentCarApp.start()  # Add 10 cars to Car object

    #Run the App
    running=True
    while running==True:
        user_selection = RentCarApp.main_menu()
```

```python
        # Methods for display available cars, requesting the cars and returning them
        #receive the customer's input to choose between displaying car availability,
        #rental modes, or returning the cars
        if user_selection==0:
            print("Thank you.\nSee you next time!")
            running=False
        elif user_selection==1:
            RentCarApp.get_available_cars()
        elif user_selection==2:
            rentedCar = RentCarApp.rent_car()
        elif user_selection==3:
            RentCarApp.return_car()


if __name__ == "__main__":

    # Run the main method to start project
    main()
```

```
10  cars created succesfully.
 HOW CAN WE SERVE YOU?:
         1 - See Available Cars
         2 - Rent Car
         3 - Return Car

       * Type '0' to Terminate App.


Choose your option [1,2,3]:  1

Avalable cars:  10

             ID=1101
             Maker: FORD
             Year: 2021
             Name: WESLY
             Plate: fo393j
             Color: red
             Style: pickup
             Version: standard
             Engine: electric
             Doors: 4
             Passengers: 4
             ==
             status: available
```

times rented: never
pricing (hourly,daily,weekly): $[60, 300, 1500] USD

ID=1102
Maker: HONDA
Year: 2022
Name: SERTA
Plate: 49k493
Color: yellow
Style: SUV
Version: basic
Engine: hybrid
Doors: 4
Passengers: 8
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[100, 500, 2500] USD

ID=1103
Maker: HYUNDAI
Year: 2021
Name: PALLI
Plate: 2sl73j
Color: yellow
Style: sedan
Version: standard
Engine: hydrogen
Doors: 2
Passengers: 5
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[24, 120, 600] USD

ID=1104
Maker: HYUNDAI
Year: 2022
Name: MOOS
Plate: 49k493
Color: white
Style: sedan
Version: luxury
Engine: hybrid
Doors: 2

```
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[120, 600, 3000] USD


ID=1105
Maker: HYUNDAI
Year: 2021
Name: SKANA
Plate: u37djw
Color: silver
Style: SUV
Version: luxury
Engine: hydrogen
Doors: 2
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[136, 680, 3400] USD


ID=1106
Maker: GM
Year: 2020
Name: KLAS
Plate: 0or83e
Color: blue
Style: sedan
Version: standard
Engine: hybrid
Doors: 4
Passengers: 2
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[20, 100, 500] USD


ID=1107
Maker: HYUNDAI
Year: 2021
Name: MOOS
Plate: 0or83e
Color: red
Style: sports
```

```
Version: luxury
Engine: hydrogen
Doors: 4
Passengers: 2
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[96, 480, 2400] USD


ID=1108
Maker: HYUNDAI
Year: 2023
Name: TRAVA
Plate: u37djw
Color: black
Style: sports
Version: standard
Engine: hydrogen
Doors: 2
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[112, 560, 2800] USD


ID=1109
Maker: TESLA
Year: 2023
Name: WESLY
Plate: 2sl73j
Color: yellow
Style: pickup
Version: standard
Engine: electric
Doors: 4
Passengers: 4
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[64, 320, 1600] USD


ID=1110
Maker: HYUNDAI
Year: 2023
Name: TRAVA
```

```
                    Plate: 483h42
                    Color: black
                    Style: sports
                    Version: basic
                    Engine: hydrogen
                    Doors: 4
                    Passengers: 9
                    ==
                    status: available
                    times rented: never
                    pricing (hourly,daily,weekly): $[112, 560, 2800] USD

 HOW CAN WE SERVE YOU?:
            1 - See Available Cars
            2 - Rent Car
            3 - Return Car

         * Type '0' to Terminate App.


Choose your option [1,2,3]:  2

Avalable cars:  10

                    ID=1101
                    Maker: FORD
                    Year: 2021
                    Name: WESLY
                    Plate: fo393j
                    Color: red
                    Style: pickup
                    Version: standard
                    Engine: electric
                    Doors: 4
                    Passengers: 4
                    ==
                    status: available
                    times rented: never
                    pricing (hourly,daily,weekly): $[60, 300, 1500] USD


                    ID=1102
                    Maker: HONDA
                    Year: 2022
                    Name: SERTA
                    Plate: 49k493
                    Color: yellow
                    Style: SUV
                    Version: basic
```

```
Engine: hybrid
Doors: 4
Passengers: 8
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[100, 500, 2500] USD


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Name: PALLI
Plate: 2sl73j
Color: yellow
Style: sedan
Version: standard
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Passengers: 5
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status: available
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pricing (hourly,daily,weekly): $[24, 120, 600] USD


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Name: MOOS
Plate: 49k493
Color: white
Style: sedan
Version: luxury
Engine: hybrid
Doors: 2
Passengers: 9
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status: available
times rented: never
pricing (hourly,daily,weekly): $[120, 600, 3000] USD


ID=1105
Maker: HYUNDAI
Year: 2021
Name: SKANA
Plate: u37djw
```

```
Color: silver
Style: SUV
Version: luxury
Engine: hydrogen
Doors: 2
Passengers: 9
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status: available
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Passengers: 2
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Plate: 0or83e
Color: red
Style: sports
Version: luxury
Engine: hydrogen
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Passengers: 2
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status: available
times rented: never
pricing (hourly,daily,weekly): $[96, 480, 2400] USD


ID=1108
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```

Year: 2023
Name: TRAVA
Plate: u37djw
Color: black
Style: sports
Version: standard
Engine: hydrogen
Doors: 2
Passengers: 9
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status: available
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Year: 2023
Name: WESLY
Plate: 2sl73j
Color: yellow
Style: pickup
Version: standard
Engine: electric
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Passengers: 4
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Version: basic
Engine: hydrogen
Doors: 4
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[112, 560, 2800] USD

```
 SELECT YOUR RENTAL CAR
             What is the ID of the car you want to rent?


             * Type '0' to Finish.


Type the ID of the car you want to rent:  1109


             You selected car ID: 1109


Choose your Rental Basis:
         1 - Hourly
         2 - Daily
         3 - Weekly


         * Type '0' to Exit and Cancel All.


Type your rental basis [1,2,3]:  1

 Usage Time Need it?
             How many hours you need it?


             * Type '0' to Exit and Cancel All.


Type the hours you need (7 max) 2

 Insert Client Information:



Mobile:  123123123
FullName:  Eric Michel
Driver License:  456wer5


             - CAR RENTAL CUSTOMER RECEIPT -



             ==
             VEHICLE:
             ==
             ID=1109
             Maker: TESLA
             Year: 2023
             Name: WESLY
             Plate: 2sl73j
             Color: yellow
             Style: pickup
             Version: standard
```

```
Engine: electric
Doors: 4
Passengers: 4
==
RENTAL SERVICE INFORMATION:
==
Status: RENTED
Selected rental [rate, price(USD)]: ['hourly', 64]
Rental date: 2024-02-10 08:57:30.757928
Return date: 2024-02-10 10:57:30.757928
```

Avalable cars: 9

```
        ID=1101
        Maker: FORD
        Year: 2021
        Name: WESLY
        Plate: fo393j
        Color: red
        Style: pickup
        Version: standard
        Engine: electric
        Doors: 4
        Passengers: 4
        ==
        status: available
        times rented: never
        pricing (hourly,daily,weekly): $[60, 300, 1500] USD


        ID=1102
        Maker: HONDA
        Year: 2022
        Name: SERTA
        Plate: 49k493
        Color: yellow
        Style: SUV
        Version: basic
        Engine: hybrid
        Doors: 4
        Passengers: 8
        ==
        status: available
        times rented: never
        pricing (hourly,daily,weekly): $[100, 500, 2500] USD


        ID=1103
```

Maker: HYUNDAI
Year: 2021
Name: PALLI
Plate: 2sl73j
Color: yellow
Style: sedan
Version: standard
Engine: hydrogen
Doors: 2
Passengers: 5
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[24, 120, 600] USD

ID=1104
Maker: HYUNDAI
Year: 2022
Name: MOOS
Plate: 49k493
Color: white
Style: sedan
Version: luxury
Engine: hybrid
Doors: 2
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[120, 600, 3000] USD

ID=1105
Maker: HYUNDAI
Year: 2021
Name: SKANA
Plate: u37djw
Color: silver
Style: SUV
Version: luxury
Engine: hydrogen
Doors: 2
Passengers: 9
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[136, 680, 3400] USD

```
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Maker: GM
Year: 2020
Name: KLAS
Plate: 0or83e
Color: blue
Style: sedan
Version: standard
Engine: hybrid
Doors: 4
Passengers: 2
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[20, 100, 500] USD


ID=1107
Maker: HYUNDAI
Year: 2021
Name: MOOS
Plate: 0or83e
Color: red
Style: sports
Version: luxury
Engine: hydrogen
Doors: 4
Passengers: 2
==
status: available
times rented: never
pricing (hourly,daily,weekly): $[96, 480, 2400] USD


ID=1108
Maker: HYUNDAI
Year: 2023
Name: TRAVA
Plate: u37djw
Color: black
Style: sports
Version: standard
Engine: hydrogen
Doors: 2
Passengers: 9
==
```

```
                    status: available
                    times rented: never
                    pricing (hourly,daily,weekly): $[112, 560, 2800] USD


                    ID=1110
                    Maker: HYUNDAI
                    Year: 2023
                    Name: TRAVA
                    Plate: 483h42
                    Color: black
                    Style: sports
                    Version: basic
                    Engine: hydrogen
                    Doors: 4
                    Passengers: 9
                    ==
                    status: available
                    times rented: never
                    pricing (hourly,daily,weekly): $[112, 560, 2800] USD

 SELECT YOUR RENTAL CAR
              What is the ID of the car you want to rent?

          * Type '0' to Finish.


Type the ID of the car you want to rent:  0


                 ---
                          Customer Name:        Eric Michel
                          Customer ID:          123123123

                          You Rented:           1 cars.
                          You will need to pay:  $128.0 USD

                          Thank you for your preference!
                 ---

 HOW CAN WE SERVE YOU?:
          1 - See Available Cars
          2 - Rent Car
          3 - Return Car

        * Type '0' to Terminate App.


Choose your option [1,2,3]:  3
```

```
Cars in Rental:  1
Client ID: 123123123

                ID=1109
                Maker: TESLA
                Year: 2023
                Name: WESLY
                Plate: 2sl73j
                Color: yellow
                Style: pickup
                Version: standard
                Engine: electric
                Doors: 4
                Passengers: 4
                ==
                Status: RENTED
                Selected rental [rate, price(USD)]: ['hourly', 64]
                Rental date: 2024-02-10 08:57:30.757928
                Expected Return date: 2024-02-10 10:57:30.757928
                Customer Name: Eric Michel

 SELECT RETURNING CAR
            What is the ID of the car you want to return?

            * Type '0' to Finish.


Type the ID of the car you want to return:  1109


            You selected car ID: 1109



            - CAR RENTAL CUSTOMER RECEIPT -


            ==
            VEHICLE:
            ==
            ID=1109
            Maker: TESLA
            Year: 2023
            Name: WESLY
            Plate: 2sl73j
            Color: yellow
            Style: pickup
            Version: standard
            Engine: electric
            Doors: 4
```

```
            Passengers: 4
            ==
            RENTAL SERVICE INFORMATION:
            ==
            Status: available
            Selected rental [rate, price(USD)]: ['hourly', 64]
            Rental date:
            Return date:


                ---
                  FINAL BILL:

                        Customer Name:          Eric Michel
                        Customer ID:            123123123

                        You Returned:           1 car(s).
                        Total to pay:           $64.0 USD

                        Thank you for your preference!
                ---



            SORRY, NO CARS HAD BEEN RENTED


 HOW CAN WE SERVE YOU?:
            1 - See Available Cars
            2 - Rent Car
            3 - Return Car

        * Type '0' to Terminate App.


Choose your option [1,2,3]:  0

Thank you.
See you next time!
```