IES Consuelo Aranda (Alberic)				
Exam:	**Python. Extr Term**			
Module:	EMS	**Course:**	2CFSN	**Date:**	24-02-2022
Student:				

OBJETIVE

We want to model a vehicles company and their drivers. .

In a vehicle we want to store:
- Plate (String)
- Description (String)
- Chasis (String)
- DriverName (String)
- Odometers (Dictionary) -> Key will be the date and value a tuple (From, To, kms)
- TotalKms (Float)
- History (String)

Create an MVC structure to manage the vehicles, that is, its model, the controller and a view through the console:

- Add Vehicle
- Delete Vehicle
- Add odometer for a driver
- Confirm odometer for a driver
- List Vehicle Details

Add Vehicle (1 point):
Plate, Description, Chasis, DriverName. TotalKms will be 0. History will be empty. You must check the plate and the chasis.

Plate: 7 characters (4 digits and 3 letters)
Chasis --> 17 characters

You can't add a vehicle with an existing plate

Delete Vehicle (1 point):

A vehicle will be deleted by the plate number. You cannot delete a vehicle with unconfirmed odometers.

Add odometer for a driver (2,5 points):

A Plate, date, origin and destination city will be requested. The kilometers distance and the date are added to the Odometer dictionary.

Confirm a odometer for a driver (2,5 points):

A Plate and date will be requested. The kilometers will be added to the total kilometers and the date and kilometers are added to the history. Then the odometer will be deleted.

List detail vehicle (3 points):

A plate or DriverName will be requested and all the information about the vehicle/(s) and unconfirmed odometer will be shown.

To get the distance between two cities(distance_api.py):

```python
url = "https://distanceto.p.rapidapi.com/get"

source = "Alberic"
dest = "Alzira"
querystring = {"route":"[{\"t\":\""+source+"\",\"c\":\"ES\"},{\"t\":\""+dest+"\",\"c\":\"ES\"}]","car":"true"}

headers = {
    'x-rapidapi-host': "distanceto.p.rapidapi.com",
    'x-rapidapi-key': "a365ad1a8cmsh8c4907a923c8b44p1ddecajsn2ec4d759c257"
    }

response = requests.request("GET", url, headers=headers, params=querystring)

if response.ok:
    data = dict(json.loads(response.text))
```

JSON's result:

```
▼ object {2}
  ▶ points [2]
  ▼ steps [1]
    ▼ 0 {6}
      ▶ start [2]
      ▶ end [2]
      ▼ distance {7}
            haversine : 8.372073090448463
            greatCircle : 8.369457556552339
            vincenty : 8.383288
            radians : 0.001313678501561033
            dagrees : 0.07526823377651731
        ▶ flight [4]
        ▼ car {2}
            distance : 10368.2
            duration : 880.2
      ▶ midpoint {3}
      ▶ bearing {3}
        time : 0
```

The distance is represented in meters. You have to convert into kilometers.

Example:

```
Currently there are  0  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
1
Input Plate:4251FYK
Input Description:SYRGROUP SCANIA
Input Chasis:V1234567890987654
Input Driver Name:Jesus
Vehicle added successfully!!!
Currently there are  1  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
3
Input Plate:4251FYK
Date: 21/02/2022
From City: Alberic
To City: Alzira
10.3682 kms
Odometer added successfully!
Currently there are  1  portfolios registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
1
Input Plate:4761LXL
Input Description:SYRGROUP DAF
Input Chasis:V1234567890987314
Input Driver Name:Jesus
Vehicle added successfully!!!
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
3
```

```
Input Plate:4251FYK
Date: 22/02/2022
From City: Valencia
To City: Madrid
354.61220000000003 kms
Odometer added successfully!
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
5
List by Plate(1) / List by Driver Name(2)
1
Plate:4251FYK
Description:SYRGROUP SCANIA
Chasis:V1234567890987314
Driver Name:Jesus
Unconfirm Odometer:
      21/02/2022 Alberic Alzira 10.3682
      22/02/2022 Valencia Madrid 354.61220000000003
TotalKms:0
History:
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
4
Input Plate:4251FYK
Input Date: 21/02/2022
Odometer confirmed!
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
5
List by Plate(1) / List by Driver Name(2)
1
Input Plate:4251FYK
Plate:4251FYK
Description:SYRGROUP SCANIA
Chasis:V1234567890987314
Driver Name:Jesus
Unconfirm Odometer:
```

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```
       22/02/2022 Valencia Madrid 354.61220000000003
TotalKms:10.3682
History:
       21/02/2022-Valencia-Alberic-10.3682
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
4
Input Plate:4251FYK
Input Date: 22/02/2022
Odometer confirmed!
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
5
List by Plate(1) / List by Driver Name(2)
2
Input Plate:Jesus
Plate:4251FYK
Description:SYRGROUP SCANIA
Chasis:V1234567890987314
Driver Name:Jesus
Unconfirm Odometer:

TotalKms:364.98040000000003
History:
       21/02/2022-Valencia-Alberic-10.3682
       22/02/2022-Valencia-Madrid- 354.61220000000003

Plate:4761LXL
Description:SYRGROUP DAF
Chasis:V1234567890987314
Driver Name:Jesus
Unconfirm Odometer:

TotalKms: 0
History:
Currently there are  2  vehicles registered!
1.- Add a vehicle
2.- Delete vehicle
3.- Add odometer
4.- Confirm odometer
5.- List vehicle
6.- Exit
Choose option:
```

```
6
Bye!
```