THE OPEN UNIVERSITY OF SRI LANKA

Mini Project Documentation

EEI3372 – Programming in Python

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EEI3372-WD-OL-G3

Contents

Introduction

This is the documentation of EEI3372 Mini Project. This application is console-based.

As the first step, a Flowchart was created considering the given scenario. After that application was developed. Some functions and constraints that are not mentioned in the flowchart were added while developing the application, due to errors that were got while developing.

The functionality of this application is as follows.

The system user needs to enter vehicle details using add new vehicle function. These vehicle details will be categorized and added to a separate list for each category.

When a customer needs to reserve a vehicle, He / She needs to provide their national identity card (NIC) number to the system operator. After that system operator can enter that NIC number and can reserve a vehicle using customer requirements. When reserving a vehicle it will be getting the last indexed vehicle number in the selected category and assigning it to a dictionary as a value. The key to that dictionary will be the customer NIC number that is going to hire the vehicle. After the successful reservation of the vehicle, a confirmation message will be printed. When releasing the vehicle that is already being reserved, will remove vehicle details from the appropriate dictionary and added into the list that has vehicle details. This is the main functionality of this program.

Also added more functions such as view reserved vehicle details, vehicle details in the category and clear console, etc.

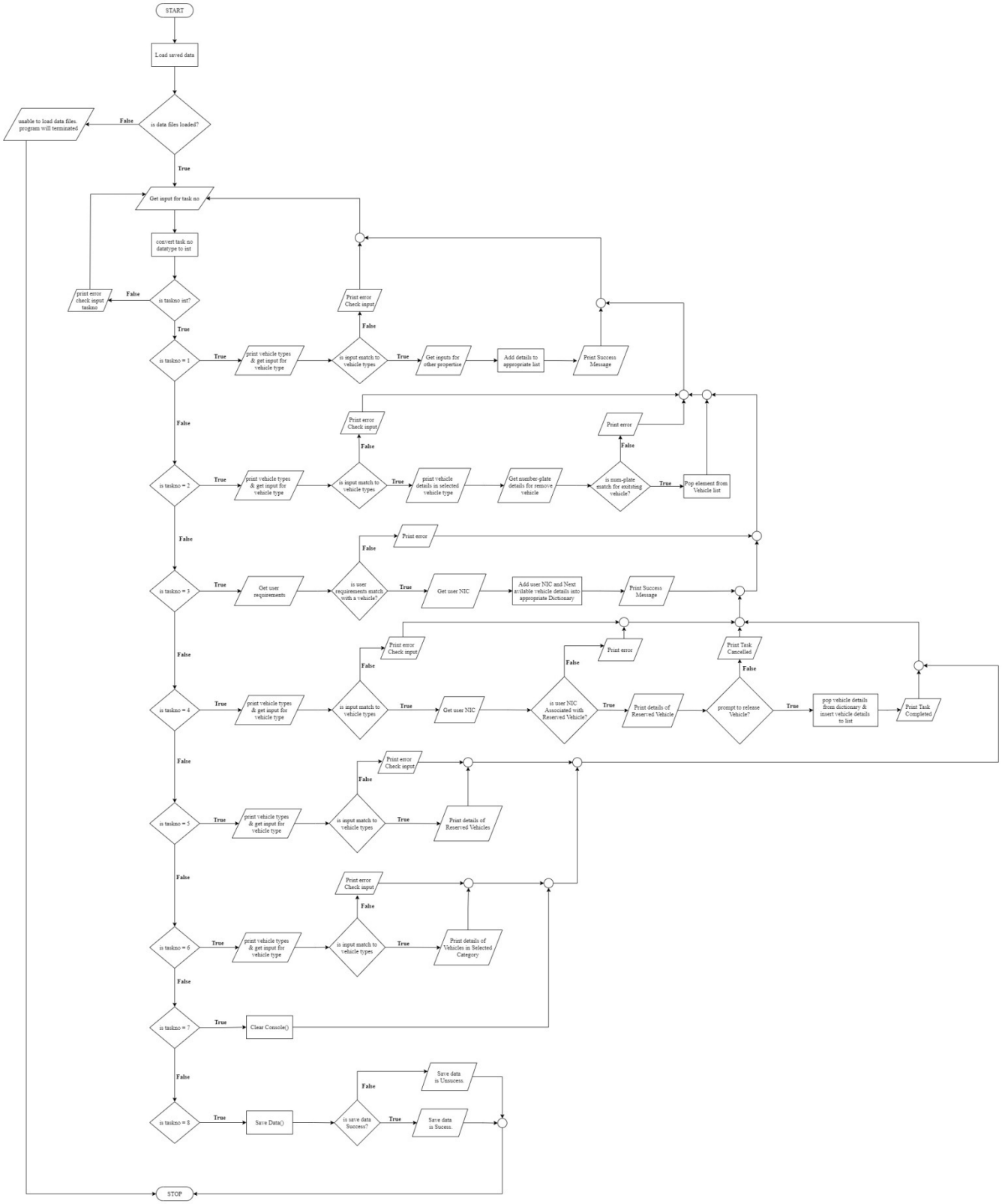
All the data in the list and dictionaries will be stored in data files using the pickle module.

Source – code of this application will be attached to this report. **Also developed application will be uploaded into Google drive and shared link will be attached to this report for further references.**

Thank you.

Link for Application :
https://drive.google.com/drive/folders/19Hn7SrXk1U7kF3CTPhcAg8N0WU_2DViA?usp=sharing

Flow-Chart



Link for Flowchart : https://drive.google.com/drive/folders/1qOsQNspK3ExdMrxHgTN5SjXZy-_dtnNx?usp=sharing

Source – Code

```
import pickle
import os

try:
    Car_AC = pickle.load(open('data/CarAC.dat', 'rb'))
    Car_NonAC = pickle.load(open('data/Car_NonAC.dat', 'rb'))
    Van_AC = pickle.load(open('data/Van_AC.dat', 'rb'))
    Van_NonAC = pickle.load(open('data/Van_NonAC.dat', 'rb'))
    _3Wheel = pickle.load(open('data/_3Wheel.dat', 'rb'))
    Truck_7ft = pickle.load(open('data/Truck_7ft.dat', 'rb'))
    Truck_12ft = pickle.load(open('data/Truck_12ft.dat', 'rb'))
    Lorry_2500 = pickle.load(open('data/Lorry_2500.dat', 'rb'))
    Lorry_3500 = pickle.load(open('data/Lorry_3500.dat', 'rb'))

    Reserved_Car_AC = pickle.load(open('data/Reserved_Car_AC.dat', 'rb'))
    Reserved_Car_NonAC = pickle.load(open('data/Reserved_Car_NonAC.dat', 'rb'))
    Reserved_Van_AC = pickle.load(open('data/Reserved_Van_AC.dat', 'rb'))
    Reserved_Van_NonAC = pickle.load(open('data/Reserved_Van_NonAC.dat', 'rb'))
    Reserved_3Wheel = pickle.load(open('data/Reserved_3Wheel.dat', 'rb'))
    Reserved_Truck_7ft = pickle.load(open('data/Reserved_Truck_7ft.dat', 'rb'))
    Reserved_Truck_12ft = pickle.load(open('data/Reserved_Truck_12ft.dat', 'rb'))
    Reserved_Lorry_2500 = pickle.load(open('data/Reserved_Lorry_2500.dat', 'rb'))
    Reserved_Lorry_3500 = pickle.load(open('data/Reserved_Lorry_3500.dat', 'rb'))

except:
    print('Unable to Load Data files. Program will terminated')
    exit()

def add_vehicle():
    print('\nVehicle Categories : \n1 - Car \n2 - Van\n3 - 3 Wheelers\n4 - Truck\n5
- Lorry\n')
    Category = input('Select Category : ')

    try:
        _Category = int(Category)

    except:
        print('Invalid input. input must be a numeric value between 1 to 5')

    if _Category == 1:
        print('Selected Category : CAR')
        number = input('Enter Number - plate of Vehicle : ')
        if number == '':
            print('Number-plate is required !')
        else:
            AC = input('Does your Car has AC :\n1.YES \n2.NO \nEnter your choice :
')

            if AC == '1':
                if number in Car_AC:
                    print('This number-plate is already existing')
                else:
                    Car_AC.insert(0, number)
                    print('Your CAR has been successfully Added.\n')
            else:
                if number in Car_NonAC:
                    print('This number-plate is already existing')
                else:
                    Car_NonAC.insert(0, number)
                    print('Your CAR has been successfully Added.\n')
```

```
    elif _Category == 2:
        print('Selected Category : VAN')
        number = input('Enter Number - plate of Vehicle : ')
        if number == '':
            print('Number-plate is required !')
        else:
            AC = input('Does your Van has AC :\n1.YES \n2.NO \nEnter your choice :
')

            if AC == '1':
                if number in Van_AC:
                    print('This number-plate is already existing')

                else:
                    Van_AC.insert(0, number)
                    print('Your VAN has been successfully Added.\n')
            else:
                if number in Van_NonAC:
                    print('This number-plate is already existing')
                else:
                    Van_NonAC.insert(0, number)
                    print('Your VAN has been successfully Added.\n')


    elif  Category == 3:
        print('Selected Category : 3 Wheeler')

        number = input('Enter Number - plate of Vehicle : ')
        if number == '':
            print('Number-plate is required !')
        else:
            if number in _3Wheel:
                print('This number-plate is already existing')
            else:
                _3Wheel.insert(0, number)
                print('Your 3 Wheeler has been successfully Added.\n')

    elif _Category == 4:
        print('Selected Category : Truck')
        number = input('Enter Number - plate of Vehicle : ')
        if number == '':
            print('Number-plate is required !')
        else:
            Size = input('Size of Truck : \n1 - 7ft \n2 - 12ft \nEnter your choice :
')

            if Size == '1':
                if number in Truck_7ft:
                    print('This number-plate is already existing')
                else:
                    Truck_7ft.insert(0, number)
                    print('Your Truck has been successfully Added.\n')

            elif Size == '2':
                if number in Truck_12ft:
                    print('This number-plate is already existing')
                else:
                    Truck_12ft.insert(0, number)
                    print('Your Truck has been successfully Added.\n')
            else:
                print('Invalid Input. input must be 1 or 2')


    elif _Category == 5:
        print('Selected Category : Lorry')
```

```
        number = input('Enter Number - plate of Vehicle : ')
        if number == '':
            print('Number-plate is required !')
        else:
            maxWeight = input('Size of Lorry :\n1 - 2500KG \n2 - 3500KG \nEnter your
choice : ')

            if maxWeight == '1':
                if number in Lorry_2500:
                    print('This number-plate is already existing')
                else:
                    Lorry_2500.insert(0, number)
                    print('Your Lorry has been successfully Added.\n')

            elif maxWeight == '2':
                if number in Lorry_3500:
                    print('This number-plate is already existing')
                else:
                    Lorry_3500.insert(0, number)
                    print('Your Lorry has been successfully Added.\n')

            else:
                print('Invalid Input. input must be 1 or 2')

    else:
        print('Input must be between 1 to 5')


def remove_vehicle():
    noVehicle = False
    noVehicle1 = False

    print('\nVehicle Categories : \n1 - Car \n2 - Van\n3 - 3 Wheelers\n4 - Truck\n5
- Lorry\n')
    Category = input('Enter Category : ')

    try:
        _Category = int(Category)

        if _Category == 1:
            if len(Car_AC) != 0:

                print('\nVehicles in CAR - AC :')
                for num in Car_AC:
                    print(num)

            else:
                print('\nNo vehicles in Car - AC')
                noVehicle = True

            if len(Car_NonAC) != 0:
                noVehicle = False
                print('\nCAR - NonAC :')
                for num in Car_NonAC:
                    print(num)
            else:
                print('\nNo vehicles in Car - NonAC')
                noVehicle1 = True

            if noVehicle == False or noVehicle1 == False:

                _remove = input('Enter a Number-plate to remove: ')

                if _remove in Car_AC:
                    Car_AC.remove(_remove)
                    print('Vehicle Removed')
```

```
            elif _remove in Car_NonAC:
                Car_NonAC.remove(_remove)
                print('Vehicle Removed')

            else:
                print('Entered Number-plate is Invalid or Not existing')

        else:
            print('No Vehicles in This Category')


    elif _Category == 2:
        if len(Van_AC) != 0:
            print('\nVehicles in Van - AC :')
            for num in Van_AC:
                print(num)
        else:
            print('\nNo vehicles in Van - AC')
            noVehicle = True

        if len(Van_NonAC) != 0:
            noVehicle = False
            print('\nVan - NonAC :')
            for num in Van NonAC:
                print(num)
        else:
            print('\nNo vehicles in Van - NonAC')
            noVehicle1 = True

        if noVehicle == False or noVehicle1 == False:

            _remove = input('Enter a Number-plate to remove: ')

            if _remove in Van_AC:
                Van_AC.remove(_remove)
                print('Vehicle Removed')

            elif _remove in Van_NonAC:
                Van_NonAC.remove(_remove)
                print('Vehicle Removed')

            else:
                print('Entered Number-plate is Invalid or Not existing')

        else:
            print('No Vehicles in This Category')

    elif _Category == 3:
        if len(_3Wheel) != 0:
            print('\nVehicles in 3 Wheelers :')
            for num in Van_AC:
                print(num)
        else:
            print('\nNo vehicles in 3 Wheelers')
            noVehicle = True

        if noVehicle == False:

            _remove = input('Enter a Number-plate to remove: ')

            if _remove in _3Wheel:
                _3Wheel.remove(_remove)
                print('Vehicle Removed')

            else:
```

```
                print('Entered Number-plate is Invalid or Not existing')

    elif _Category == 4:
        if len(Truck_7ft) != 0:
            print('\nVehicles in Truck - 7ft :')
            for num in Truck_7ft:
                print(num)
        else:
            print('\nNo vehicles in Truck - 7ft')
            noVehicle = True

        if len(Truck_12ft) != 0:
            noVehicle = False
            print('\nTruck - 12ft :')
            for num in Truck_12ft:
                print(num)
        else:
            print('\nNo vehicles in Truck - 12ft')
            noVehicle1 = True

        if noVehicle == False or noVehicle1 == False:

            _remove = input('Enter a Number-plate to remove: ')

            if  remove in Truck 7ft:
                Truck_7ft.remove(_remove)
                print('Vehicle Removed')

            elif _remove in Truck_12ft:
                Truck_12ft.remove(_remove)
                print('Vehicle Removed')

            else:
                print('Entered Number-plate is Invalid or Not existing')
        else:
            print('No Vehicles in This Category')

    elif _Category == 5:
        if len(Lorry_2500) != 0:
            print('\nVehicles in Lorry - 2500KG :')
            for num in Lorry_2500:
                print(num)
        else:
            print('\nNo vehicles in Lorry - 2500KG')
            noVehicle = True

        if len(Lorry_3500) != 0:
            noVehicle = False
            print('\nLorry - 3500KG :')
            for num in Lorry_3500:
                print(num)
        else:
            print('\nNo vehicles in Lorry - 3500KG')
            noVehicle1 = True

        if noVehicle == False or noVehicle1 == False:

            _remove = input('Enter a Number-plate to remove: ')

            if _remove in Lorry_2500:
                Lorry_2500.remove(_remove)
                print('Vehicle Removed')

            elif _remove in Lorry_3500:
                Lorry_3500.remove(_remove)
                print('Vehicle Removed')
```

```
                else:
                    print('Entered Number-plate is Invalid or Not existing')

        else:
            print('Input must be between 1 to 5')

    except:
        print('Input must be numeric')


def reserve():
    Q1 = input('What is your purpose ? \n1. Transport Passenger \n2. Transport Goods
\nEnter Your Choice : ')

    if Q1 == '1':
        Q2 = input('How many Passengers (1 - 8): ')
        Q3 = input('Do you need AC ? \n1.YES \n2.N0 \nEnter your choice : ')

        try:
            _Q2 = int(Q2)

            if 8 >= _Q2 > 4 and Q3 == '1':
                print('Your Requirements match with VAN with AC\n')
                if len(Van_AC) == 0:
                    print('Sorry! Currently AC - Vans are not available in the
system')
                else:
                    Q4 = input('Do you want to Hire Van with AC ? :\n1. YES\n2.
NO\nEnter Your Choice : ')
                    if Q4 == '1':
                        nic = input('Enter Customer NIC :')

                        if nic == '':
                            print('NIC is Required!')

                        else:
                            if nic in Reserved_Van_AC.keys():
                                print('Already Reserved a Vehicle for this NIC')

                            else:
                                temp_vehicle = Van_AC[-1]
                                Reserved_Van_AC[nic] = temp_vehicle
                                Van_AC.remove(temp_vehicle)
                                print('----- Reservation Details -----')
                                print('NIC : ', nic)
                                print('Vehicle No : ', temp_vehicle)
                                print('Vehicle Successfully Reserved')

                    elif Q4 == '2':
                        print('Reservation Cancelled.\nYou will be redirected to
Home Screen')

                    else:
                        print('Invalid input. Expected input is 1 or 2')

            elif 8 >= _Q2 > 4 and Q3 == '2':
                print('Your Requirements match with VAN without AC\n')
                if len(Van_NonAC) == 0:
                    print('Sorry! Currently NonAC - Vans are not available in the
system')
                else:
                    Q4 = input('Do you want to Hire Van without AC ? :\n1. YES\n2.
NO\nEnter Your Choice : ')
                    if Q4 == '1':
                        nic = input('Enter Customer NIC :')
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                        if nic == '':
                            print('NIC is Required!')

                        else:
                            if nic in Reserved_Van_NonAC.keys():
                                print('Already Reserved a Vehicle for this NIC')

                            else:
                                temp_vehicle = Van_NonAC[-1]
                                Reserved_Van_NonAC[nic] = temp_vehicle
                                Van_NonAC.remove(temp_vehicle)
                                print('----- Reservation Details -----')
                                print('NIC : ', nic)
                                print('Vehicle No : ', temp_vehicle)
                                print('Vehicle Successfully Reserved')

                    elif Q4 == '2':
                        print('Reservation Cancelled.\nYou will be redirected to
Home Screen')

                    else:
                        print('Invalid input. Expected input is 1 or 2')


            elif 4 >= _Q2 > 0 and Q3 == '1':
                print('Your Requirements match with CAR with AC\n')
                if len(Car_AC) == 0:
                    print('Sorry! Currently AC - Cars are not available in the
system')
                else:
                    Q4 = input('Do you want to Hire CAR with AC ? :\n1. YES\n2.
NO\nEnter Your Choice : ')
                    if Q4 == '1':
                        nic = input('Enter Customer NIC :')

                        if nic == '':
                            print('NIC is Required!')

                        else:
                            if nic in Reserved_Car_AC.keys():
                                print('Already Reserved a Vehicle for this NIC')

                            else:
                                temp_vehicle = Car_AC[-1]
                                Reserved_Car_AC[nic] = temp_vehicle
                                Car_AC.remove(temp_vehicle)
                                print('----- Reservation Details -----')
                                print('NIC : ', nic)
                                print('Vehicle No : ', temp_vehicle)
                                print('Vehicle Successfully Reserved')

                    elif Q4 == '2':
                        print('Reservation Cancelled.\nYou will be redirected to
Home Screen')

                    else:
                        print('Invalid input. Expected input is 1 or 2')

            elif 4 >= _Q2 > 0 and Q3 == '2':
                if _Q2 in range(1, 4):
                    print('Your Requirements match with Non-AC CAR or 3 Wheeler\n')
                    if len(Car_NonAC) != 0 and len(_3Wheel) != 0:
                        Q4 = input('Do you want to hire NonAC CAR or 3 Wheeler ?
:\n1. NonAC Car \n2. 3-Wheeler \n3. Exit \nEnter Your Choice : ')
                        if Q4 == '1':
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                            nic = input('Enter Customer NIC :')

                            if nic == '':
                                print('NIC is Required!')

                            else:
                                if nic in Reserved_Car_NonAC.keys():
                                    print('Already Reserved a Vehicle for this NIC')

                                else:
                                    temp_vehicle = Car_NonAC[-1]
                                    Reserved_Car_NonAC[nic] = temp_vehicle
                                    Car_NonAC.remove(temp_vehicle)
                                    print('----- Reservation Details -----')
                                    print('NIC : ', nic)
                                    print('Vehicle No : ', temp_vehicle)
                                    print('Vehicle Successfully Reserved')

                        elif Q4 == '2':
                            nic = input('Enter Customer NIC :')

                            if nic == '':
                                print('NIC is Required!')

                            else:
                                if nic in Reserved_3Wheel.keys():
                                    print('Already Reserved a Vehicle for this NIC')

                                else:
                                    temp_vehicle = _3Wheel[-1]
                                    Reserved_3Wheel[nic] = temp_vehicle
                                    _3Wheel.remove(temp_vehicle)
                                    print('----- Reservation Details -----')
                                    print('NIC : ', nic)
                                    print('Vehicle No : ', temp_vehicle)
                                    print('Vehicle Successfully Reserved')

                        elif Q4 == '3':
                            print('Reservation Cancelled.\nYou will be redirected to
Home Screen')

                        else:
                            print('Invalid input. Expected input is 1,2 or 3.')

                    elif len(Car_NonAC) == 0:
                        if len(_3Wheel) == 0:
                            print('Sorry! NonAC - Car and 3 Wheelers not available
in the system')
                        else:
                            print('Sorry! NonAC - Car not available in the system')
                            Q4 = input('Do you want to Hire  3 Wheeler ? :\n1. Yes
\n2. No \nEnter Your Choice : ')

                            if Q4 == '1':
                                nic = input('Enter Customer NIC :')

                                if nic == '':
                                    print('NIC is Required!')

                                else:
                                    if nic in Reserved_3Wheel.keys():
                                        print('Already Reserved a Vehicle for this
NIC')

                                    else:
                                        temp_vehicle = _3Wheel[-1]
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                                        Reserved_3Wheel[nic] = temp_vehicle
                                        _3Wheel.remove(temp_vehicle)
                                        print('----- Reservation Details -----')
                                        print('NIC : ', nic)
                                        print('Vehicle No : ', temp_vehicle)
                                        print('Vehicle Successfully Reserved')

                                elif Q4 == '2':
                                    print('Reservation Cancelled.\nYou will be
redirected to Home Screen')

                                else:
                                    print('Invalid input. Expected input is 1 or 2.')

                            elif len(_3Wheel) == 0:
                                if len(Car_NonAC) == 0:
                                    print('Sorry! NonAC - Car and 3 Wheelers not available
in the system')
                                else:
                                    print('Sorry! 3 Wheelers not available in the system')
                                    Q4 = input('Do you want to Hire NonAC - Car ? :\n1. Yes
\n2. No \nEnter Your Choice : ')

                                    if Q4 == '1':
                                        nic = input('Enter Customer NIC :')

                                        if nic == '':
                                            print('NIC is Required!')

                                        else:
                                            if nic in Reserved_Car_NonAC.keys():
                                                print('Already Reserved a Vehicle for this
NIC')

                                            else:
                                                temp_vehicle = Car_NonAC[-1]
                                                Reserved_Car_NonAC[nic] = temp_vehicle
                                                Car_NonAC.remove(temp_vehicle)
                                                print('----- Reservation Details -----')
                                                print('NIC : ', nic)
                                                print('Vehicle No : ', temp_vehicle)
                                                print('Vehicle Successfully Reserved')

                                    elif Q4 == '2':
                                        print('Reservation Cancelled.\nYou will be
redirected to Home Screen')

                            else:
                                print('Invalid input. Expected input is 1,2 or 3.')

                    else:
                        print("You don't have a choice")

                except:
                    print('Check you input for number of passenger')


            elif Q1 == '2':
                Q2 = input('\n1. Truck ( 7ft / 12ft) \n2. Lorry ( 2500KG / 3500KG) \nEnter
Your Choice : ')

                if Q2 == '1':
                        print('Truck Selected \nChoose Truck Size :')
                        Q3 = input('1. 7ft  \n2. 12ft \nEnter Your Choice : ')
                        if Q3 == '1':
                            if len(Truck_7ft) != 0:
```

```
                        nic = input('Enter Customer NIC :')

                        if nic == '':
                            print('NIC is Required!')

                        else:
                            if nic in Reserved_Truck_7ft.keys():
                                print('Already Reserved a Vehicle for this NIC')

                            else:
                                temp_vehicle = Truck_7ft[-1]
                                Reserved_Truck_7ft[nic] = temp_vehicle
                                Truck_7ft.remove(temp_vehicle)
                                print('----- Reservation Details -----')
                                print('NIC : ', nic)
                                print('Vehicle No : ', temp_vehicle)
                                print('Vehicle Successfully Reserved')
                    else:
                        print('Sorry! Currently 7ft Trucks are not available in the
system')

                elif Q3 == '2':
                    if len(Truck_12ft) != 0:
                        nic = input('Enter Customer NIC :')

                        if nic == '':
                            print('NIC is Required!')

                        else:
                            if nic in Reserved_Truck_12ft.keys():
                                print('Already Reserved a Vehicle for this NIC')

                            else:
                                temp_vehicle = Truck_12ft[-1]
                                Reserved_Truck_12ft[nic] = temp_vehicle
                                Truck_12ft.remove(temp_vehicle)
                                print('----- Reservation Details -----')
                                print('NIC : ', nic)
                                print('Vehicle No : ', temp_vehicle)
                                print('Vehicle Successfully Reserved')

                    else:
                        print('Sorry! Currently 12ft Trucks are not available in the
system')

        elif Q2 == '2':
            print('Lorry Selected\n')
            Q3 = input('1. 2500KG \n2. 3500KG \nEnter Your Choice : ')
            if Q3 == '1':
                if len(Lorry_2500) != 0:
                    nic = input('Enter Customer NIC :')

                    if nic == '':
                        print('NIC is Required!')

                    else:
                        if nic in Reserved_Lorry_2500.keys():
                            print('Already Reserved a Vehicle for this NIC')

                        else:
                            temp_vehicle = Lorry_2500[-1]
                            Reserved_Lorry_2500[nic] = temp_vehicle
                            Lorry_2500.remove(temp_vehicle)
                            print('----- Reservation Details -----')
                            print('NIC : ', nic)
                            print('Vehicle No : ', temp_vehicle)
```

```
                            print('Vehicle Successfully Reserved')

                else:
                    print('Sorry! Currently Lorry 2500KG are not available in the
system')


            elif Q3 == '2':
                if len(Lorry_3500) != 0:
                    nic = input('Enter Customer NIC :')

                    if nic == '':
                        print('NIC is Required!')

                    else:
                        if nic in Reserved_Lorry_3500.keys():
                            print('Already Reserved a Vehicle for this NIC')

                        else:
                            temp_vehicle = Lorry_3500[-1]
                            Reserved_Lorry_3500[nic] = temp_vehicle
                            Lorry_3500.remove(temp_vehicle)
                            print('----- Reservation Details -----')
                            print('NIC : ', nic)
                            print('Vehicle No : ', temp vehicle)
                            print('Vehicle Successfully Reserved')

                else:
                    print('Sorry! Currently Lorry 3500KG are not available in the
system')

            else:
                print('Invalid input. Expected input 1 or 2.')


        else:
            print('Invalid input. Expected input 1 or 2.')


def release():
    print('Vehicle Categories : \n1 - Car \n2 - Van\n3 - 3 Wheelers\n4 - Truck\n5 -
Lorry\n')
    Category = input('Enter Category : ')

    if Category == "1":

        subcategory = input('1. AC - Car \n2. NonAC - Car \nEnter your Choice :')

        if subcategory == '1':

            nic = input('Enter Customer NIC :')

            if nic in Reserved_Car_AC.keys():
                print(nic, ' Hired ', Reserved_Car_AC[nic])

                RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                if RemoveRq == '1':
                    temp = Reserved_Car_AC[nic]
                    Car_AC.insert(0, temp)
                    Reserved_Car_AC.pop(nic)
                    print(temp, 'is Successfully Released')

                if RemoveRq == '2':
                    print('Task Canceled. You will be redirected to Home menu')
```

```
            else:
                print('No AC - Car Reserved for this NIC')


        elif subcategory == "2":

            nic = input('Enter Customer NIC :')

            if nic in Reserved_Car_NonAC.keys():
                print(nic, ' Hired ', Reserved_Car_NonAC[nic])

                RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                if RemoveRq == '1':
                    temp = Reserved_Car_NonAC[nic]
                    Car_NonAC.insert(0, temp)
                    Reserved_Car_NonAC.pop(nic)
                    print(temp, 'is Successfully Released')

                if RemoveRq == '2':
                    print('Task Canceled. You will be redirected to Home menu')

            else:
                print('No NonAC - Car Reserved for this NIC')

        else:
            print('Invalid input. input must be 1 or 2.')

    elif Category == "2":

        subcategory = input('1. AC - Van \n2. NonAC - Van \nEnter your Choice :')

        if subcategory == '1':

            nic = input('Enter Customer NIC :')
            if nic in Reserved_Van_AC.keys():

                print(nic, ' Hired ', Reserved_Van_AC[nic])
                RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                if RemoveRq == '1':
                    temp = Reserved_Van_AC[nic]
                    Van_AC.insert(0, temp)
                    Reserved_Van_AC.pop(nic)
                    print(temp, 'is Successfully Released')

                if RemoveRq == '2':
                    print('Task Canceled. You will be redirected to Home menu')

            else:
                print('No AC - Van Reserved for this NIC')


        elif subcategory == "2":

            nic = input('Enter Customer NIC :')

            try:
                if nic in Reserved_Van_NonAC.keys():
                    print(nic, ' Hired ', Reserved_Van_NonAC[nic])

                    RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')
```

```
                    if RemoveRq == '1':
                        temp = Reserved_Van_NonAC[nic]
                        Van_NonAC.insert(0, temp)
                        Reserved_Van_NonAC.pop(nic)
                        print(temp, 'is Successfully Released')

                    if RemoveRq == '2':
                        print('Task Canceled. You will be redirected to Home menu')

                else:
                    print('No NonAC - Van Reserved for this NIC')
            except:
                print('check input')

        else:
            print('Invalid input')

    elif Category == "3":

        nic = input('Enter Customer NIC :')

        try:
            if nic in Reserved_3Wheel.keys():
                print(nic, ' Hired ', Reserved 3Wheel[nic])

                RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                if RemoveRq == '1':
                    temp = Reserved_3Wheel[nic]
                    _3Wheel.insert(0, temp)
                    Reserved_3Wheel.pop(nic)
                    print(temp, 'is Successfully Released')

                if RemoveRq == '2':
                    print('Task Canceled. You will be redirected to Home menu')

            else:
                print('No 3Wheel Reserved for this NIC')
        except:
            print('check input')

    elif Category == "4":

        subcategory = input('1. AC - Van \n2. NonAC - Van \nEnter your Choice :')

        if subcategory == '1':

            nic = input('Enter Customer NIC :')

            try:
                if nic in Reserved_Truck_7ft.keys():
                    print(nic, ' Hired ', Reserved_Truck_7ft[nic])

                    RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                    if RemoveRq == '1':
                        temp = Reserved_Truck_7ft[nic]
                        Truck_7ft.insert(0, temp)
                        Reserved_Truck_7ft.pop(nic)
                        print(temp, 'is Successfully Released')

                    if RemoveRq == '2':
                        print('Task Canceled. You will be redirected to Home menu')
```

```
                else:
                    print('No Truck 7ft Reserved for this NIC')
            except:
                print('check input')

        elif subcategory == "2":

            nic = input('Enter Customer NIC :')

            try:
                if nic in Reserved_Truck_12ft.keys():
                    print(nic, ' Hired ', Reserved_Truck_12ft[nic])

                    RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                    if RemoveRq == '1':
                        temp = Reserved_Truck_12ft[nic]
                        Truck_12ft.insert(0, temp)
                        Reserved_Truck_12ft.pop(nic)
                        print(temp, 'is Successfully Released')

                    if RemoveRq == '2':
                        print('Task Canceled. You will be redirected to Home menu')

                else:
                    print('No Truck 12ft Reserved for this NIC')
            except:
                print('check input')

        else:
            print('Invalid input')

    elif Category == "5":

        subcategory = input('1. AC - Van \n2. NonAC - Van \nEnter your Choice :')

        if subcategory == '1':

            nic = input('Enter Customer NIC :')

            try:
                if nic in Reserved_Lorry_2500.keys():
                    print(nic, ' Hired ', Reserved_Lorry_2500[nic])

                    RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                    if RemoveRq == '1':
                        temp = Reserved_Lorry_2500[nic]
                        Lorry_2500.insert(0, temp)
                        Reserved_Lorry_2500.pop(nic)
                        print(temp, 'is Successfully Released')

                    if RemoveRq == '2':
                        print('Task Canceled. You will be redirected to Home menu')

                else:
                    print('No Lorry 2500KG Reserved for this NIC')
            except:
                print('check input')

        elif subcategory == "2":

            nic = input('Enter Customer NIC :')
```

```
            try:
                if nic in Reserved_Lorry_3500.keys():
                    print(nic, ' Hired ', Reserved_Lorry_3500[nic])

                    RemoveRq = input('Do You want to Release This vehicle ? \n1. Yes
\n2. NO \nEnter your choice : ')

                    if RemoveRq == '1':
                        temp = Reserved_Lorry_3500[nic]
                        Lorry_3500.insert(0, temp)
                        Reserved_Lorry_3500.pop(nic)
                        print(temp, 'is Successfully Released')

                    if RemoveRq == '2':
                        print('Task Canceled. You will be redirected to Home menu')

                else:
                    print('No Lorry 3500KG Reserved for this NIC')
            except:
                print('check input')

        else:
            print('Invalid input')


def reserved():
    print('Vehicle Categories : \n1 - Car \n2 - Van\n3 - 3 Wheelers\n4 - Truck\n5 -
Lorry\n')
    Category = input('Enter Category : ')

    if Category == '1':
        if len(Reserved_Car_AC) > 0:
            print('\n-- Reserved Vehicle in CAR - AC --\nPerson NIC --> Vehicle NO')
            for x, no in Reserved_Car_AC.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in CAR - AC')

        if len(Reserved_Car_NonAC) > 0:
            print('\n-- Reserved Vehicle in CAR - NonAC -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_Car_NonAC.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in CAR - NonAC')

    elif Category == '2':
        if len(Reserved_Van_AC) > 0:
            print('\n-- Reserved Vehicle in VAN - AC -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_Van_AC.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in VAN - AC')

        if len(Reserved_Van_NonAC) > 0:
            print('\n-- Reserved Vehicle in Van - NonAC -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_Van_NonAC.items():
                print(x, " --> ", no)

        else:
```

```
            print('\nNo Reserved Vehicle in Van - NonAC')

    elif Category == '3':
        if len(Reserved_3Wheel) > 0:
            print('\n-- Reserved Vehicle in 3 Wheeler -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_3Wheel.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in 3 Wheeler')


    elif Category == '4':
        if len(Reserved_Truck_7ft) > 0:
            print('\n-- Reserved Vehicle in Truck 7ft -- \nPerson NIC --> Vehicle
NO')
            for B, no in Reserved_Truck_7ft.items():
                print(B, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in Truck 7ft')

        if len(Reserved_Truck_12ft) > 0:
            print('\n-- Reserved Vehicle in Truck 12ft -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_Truck_12ft.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in Truck 12ft')


    elif Category == '5':
        if len(Reserved_Lorry_2500) > 0:
            print('\n-- Reserved Vehicle in Lorry 2500KG -- \nPerson NIC --> Vehicle
NO')
            for k, no in Reserved_Lorry_2500.items():
                print(k, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in Lorry 2500KG')

        if len(Reserved_Lorry_3500) > 0:
            print('\n-- Reserved Vehicle in Lorry 3500KG -- \nPerson NIC --> Vehicle
NO')
            for x, no in Reserved_Lorry_3500.items():
                print(x, " --> ", no)

        else:
            print('\nNo Reserved Vehicle in Lorry 3500KG')

    else:
        print('Check your input for Vehicle type in Reserved Vehicle')


def view_vehicle():
    print('Vehicle Categories : \n1 - Car \n2 - Van\n3 - 3 Wheelers\n4 - Truck\n5 -
Lorry')
    Category = input('Enter Category : ')

    try:
        _Category = int(Category)

    except:
        print('Check your input')
```

```
    if _Category == 1:

        if len(Car_AC) != 0:

            print('\nCAR - AC :')
            for num in Car_AC:
                print(num)

        else:
            print('\nNo vehicles in Car - AC')

        if len(Car_NonAC) != 0:

            print('\nCAR - NonAC :')
            for num in Car_NonAC:
                print(num)
        else:
            print('\nNo vehicles in Car - NonAC')


    elif _Category == 2:

        if len(Van_AC) != 0:
            print('\nVAN - AC :')
            for num in Van_AC:
                print(num)

        else:
            print('\nNo vehicles in Van - AC')

        if len(Van_NonAC) != 0:
            print('\nVAN - NonAC :')
            for num in Van_NonAC:
                print(num)

        else:
            print('\nNo vehicles in Car - NonAC')


    elif _Category == 3:
        if len(_3Wheel) != 0:
            print('\n3 Wheelers :')
            for num in _3Wheel:
                print(num)
        else:
            print('\nNo vehicles in 3 Wheelers')

    elif _Category == 4:

        if len(Truck_7ft) != 0:
            print('\nTruck - 7ft :')
            for num in Truck_7ft:
                print(num)

        else:
            print('\nNo vehicles in Truck - 7ft')

        if len(Truck_12ft) != 0:
            print('\nTruck - 12ft :')
            for num in Truck_12ft:
                print(num)

        else:
            print('\nNo vehicles in Truck - 12ft')
```

```
    elif _Category == 5:
        if len(Lorry_2500) != 0:
            print('\nLorry - 2500KG :')
            for num in Lorry_2500:
                print(num)

        else:
            print('\nNo vehicles in Lorry - 2500KG')

        if len(Lorry_3500) != 0:
            print('\nLorry - 3500KG :')
            for num in Lorry_3500:
                print(num)

        else:
            print('\nNo vehicles in Lorry - 3500KG')
    else:
        print('\nError. Check your input')


def save_data():
    try:
        pickle.dump(Car_AC, open('data/CarAC.dat', 'wb'))
        pickle.dump(Car_NonAC, open('data/Car_NonAC.dat', 'wb'))
        pickle.dump(Van_AC, open('data/Van AC.dat', 'wb'))
        pickle.dump(Van_NonAC, open('data/Van_NonAC.dat', 'wb'))
        pickle.dump(_3Wheel, open('data/_3Wheel.dat', 'wb'))
        pickle.dump(Truck_7ft, open('data/Truck_7ft.dat', 'wb'))
        pickle.dump(Truck_12ft, open('data/Truck_12ft.dat', 'wb'))
        pickle.dump(Lorry_2500, open('data/Lorry_2500.dat', 'wb'))
        pickle.dump(Lorry_3500, open('data/Lorry_3500.dat', 'wb'))

        pickle.dump(Reserved_Car_AC, open('data/Reserved_Car_AC.dat', 'wb'))
        pickle.dump(Reserved_Car_NonAC, open('data/Reserved_Car_NonAC.dat', 'wb'))
        pickle.dump(Reserved_Van_AC, open('data/Reserved_Van_AC.dat', 'wb'))
        pickle.dump(Reserved_Van_NonAC, open('data/Reserved_Van_NonAC.dat', 'wb'))
        pickle.dump(Reserved_3Wheel, open('data/Reserved_3Wheel.dat', 'wb'))
        pickle.dump(Reserved_Truck_7ft, open('data/Reserved_Truck_7ft.dat', 'wb'))
        pickle.dump(Reserved_Truck_12ft, open('data/Reserved_Truck_12ft.dat', 'wb'))
        pickle.dump(Reserved_Lorry_2500, open('data/Reserved_Lorry_2500.dat', 'wb'))
        pickle.dump(Reserved_Lorry_3500, open('data/Reserved_Lorry_3500.dat', 'wb'))

        print('Data has been saved successfully')

    except:
        print('Unable to save data.')


def clear():
    os.system('CLS')


print('Welcome to Cab Service !!')

RunProgram = True

while RunProgram:

    print('\nChoose your Task : \n1 - Add new vehicle \n2 - Remove vehicle\n3 -
Reserve Vehicle\n4 - Release Vehicle'
          '\n5 - View Reserved Vehicle Details \n6 - Vehicles in Category\n7 - Clear
Console\n8 - Exit\n')

    try:
        task = int(input('Your Input : '))
```

```
        if task == 1:
            add_vehicle()

        elif task == 2:
            remove_vehicle()

        elif task == 3:
            reserve()

        elif task == 4:
            release()

        elif task == 5:
            reserved()

        elif task == 6:
            view_vehicle()

        elif task == 7:
            clear()

        elif task == 8:
            save_data()
            print('Program Terminated.')
            RunProgram = False

        else:
            print('Invalid Input')

    except:
        print('Enter only a value.')
```

Screenshot of Application

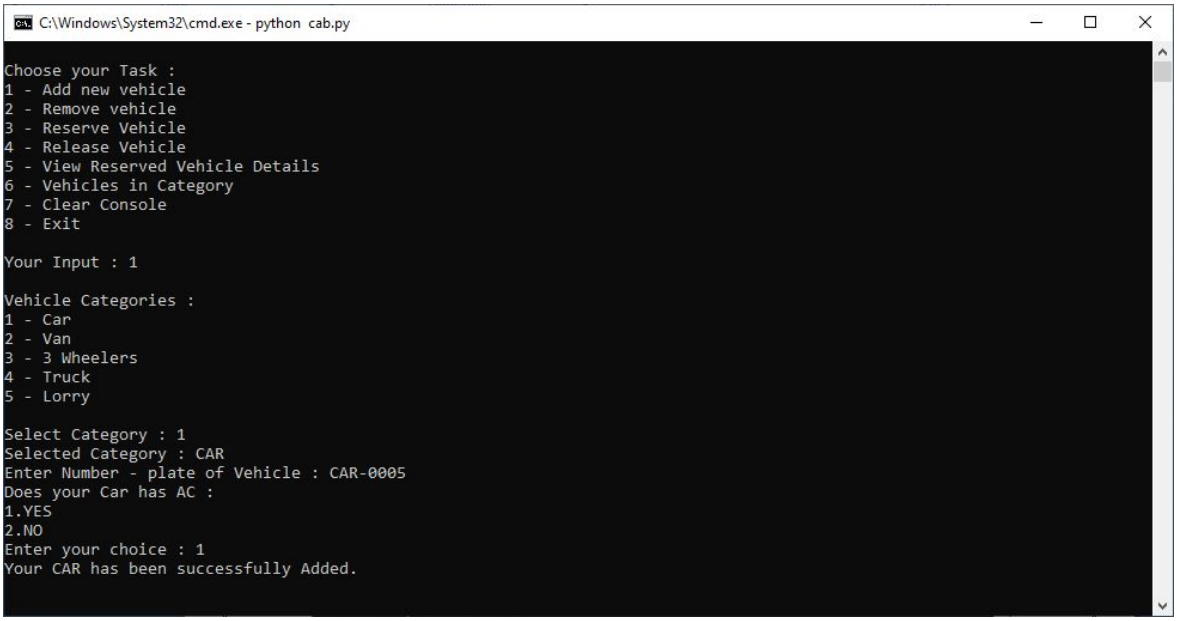

Figure 1 – Add Vehicle

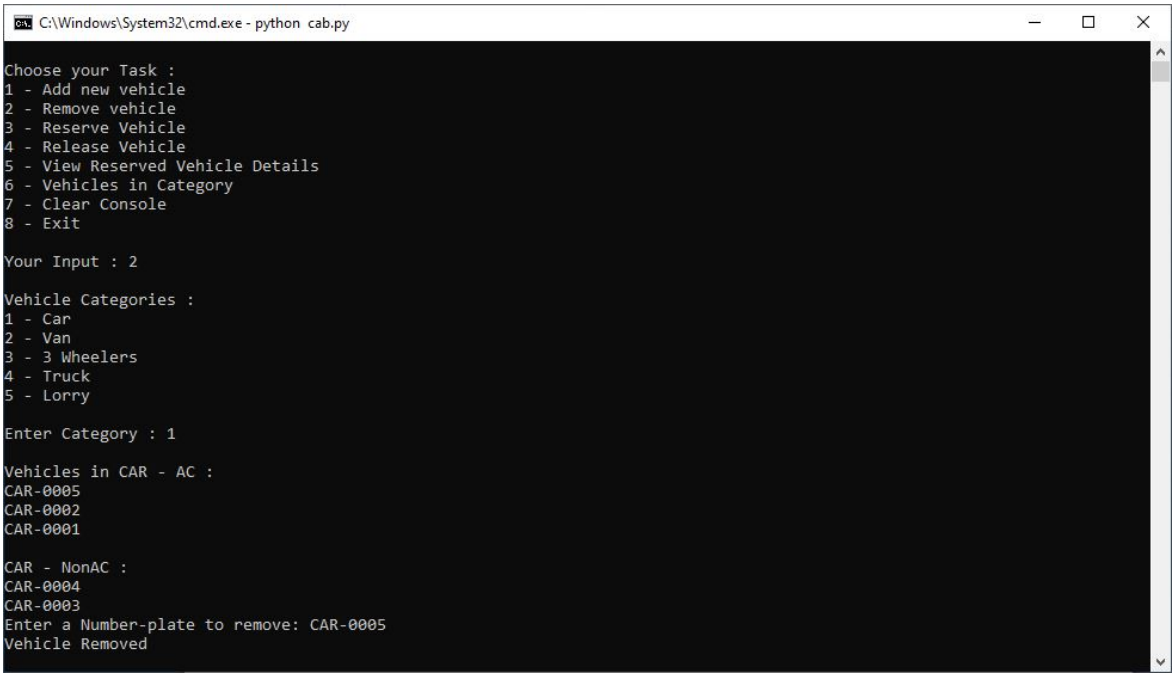

Figure 2 – Remove Vehicle

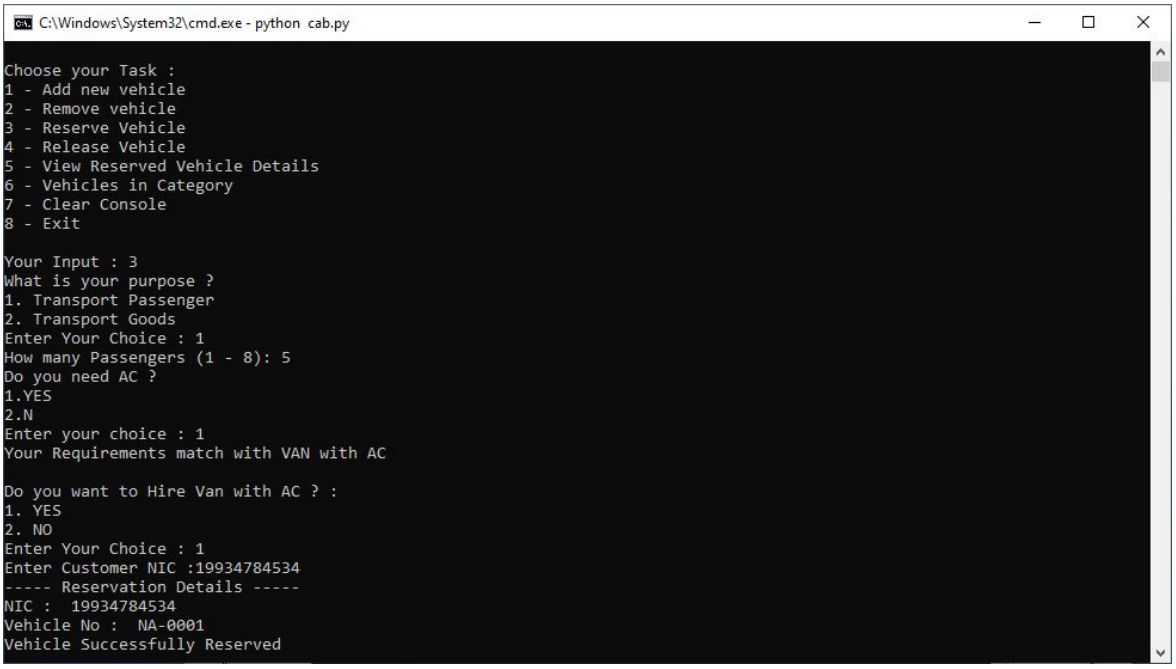

Figure 3 – Reserve Vehicle

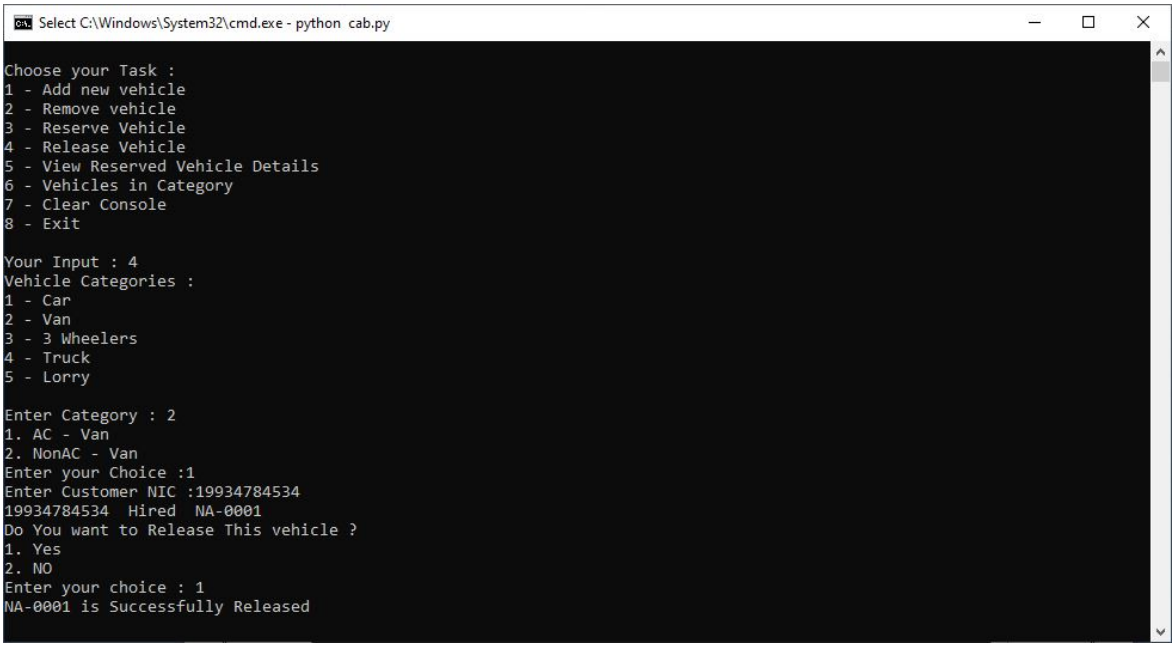

Figure 4 – Release Vehicle

Figure 5 – Reserved Vehicles

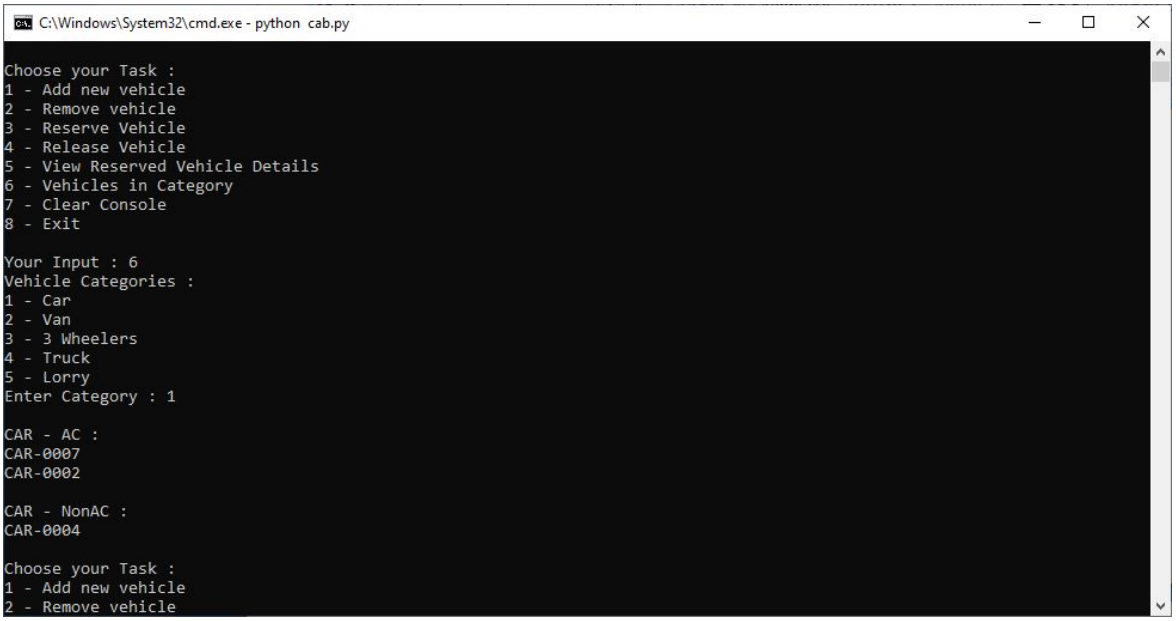

Figure 6 – Vehicles in Category

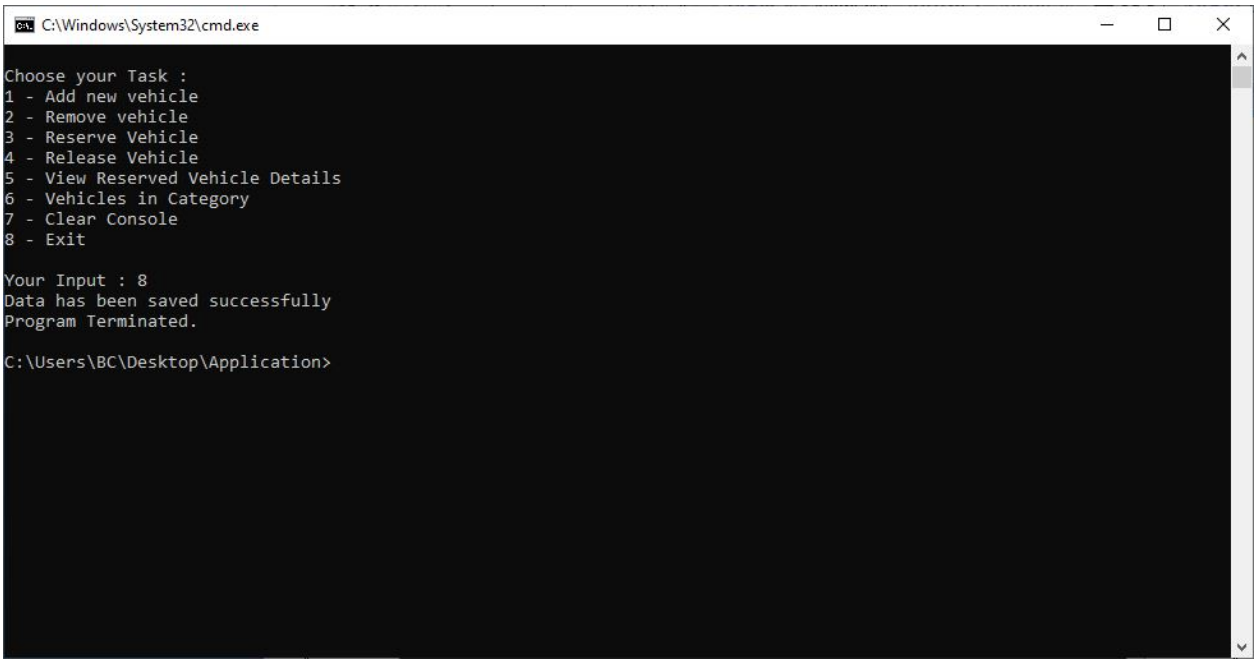

Figure 7 – Exit

Conclusion

This is the conclusion of the EEI3372 mini Project. In this project, Practical usage of Python Language was gathered. Some function such as Len and slicing was used for this project. Also, there were some difficulties to save data in this project. As the solution for that difficulty, The pickle module was used to save data instead of using the database. The pickle module is a very simple and easy way to save data into a file. Also, it doesn't need to install separately.

List and dictionaries can be used to store data easily, and the data in lists and dictionaries can be manipulated easily.

To gain required knowledge such as the pickle module, some websites and youtube tutorials were used.

This is the End of the mini-project.

Thank you

END OF Python Mini Project