PARKING LOT SYSTEM

Contents:

Description and Features:

This project contains basic implementation of Parking lot system using Python. It creates parking lot with given number of slots. The program has following features:

- Create a parking lot with given capacity and name
- Park a car
- Leave parking lot
- Check the status of parking lot
- Get the nearest empty slot
- Get registration numbers of all cars of a particular colour
- Get the slot numbers of all cars of a particular colour
- Get the slot number of car by registration number
- Get total number of empty slots available at the moment

Inputs to run the program can be provided in three different mode,

1. Using a text file
2. User interactive – by typing the commands manually
3. User interactive – by choosing options in inbuilt Menu

Technology and concepts used:

- Python 3.8 (Code is made compatible to run in python 2 as well)
- OOPS
- User defined Modules

Requirements:

- User needs to install Python in their system, use the following link to download and install the latest version of python: https://www.python.org/downloads/

Setup:

Follow the below steps to execute or run this project in your system:

1. Clone the repository (https://github.com/attainu/project-akshay-sahu-au13.git)
2. Install Python in your computer
3. Open the folder using shell or VS code/IDE and type: `python main.py` to run it as a user interactive program
    - Press 1 for menu based interactive interface
    - Press 2 or any other key to type the commands manually
4. To give inputs from a file, type following command in shell:
   `python main.py -run input_file1.txt`

Instructions on how to run the program:

To run with file input:

- Open the folder containing source code files in shell and type:
  `python main.py -run input_file1.txt` (or)
  `python main.py -run input_file2.txt`

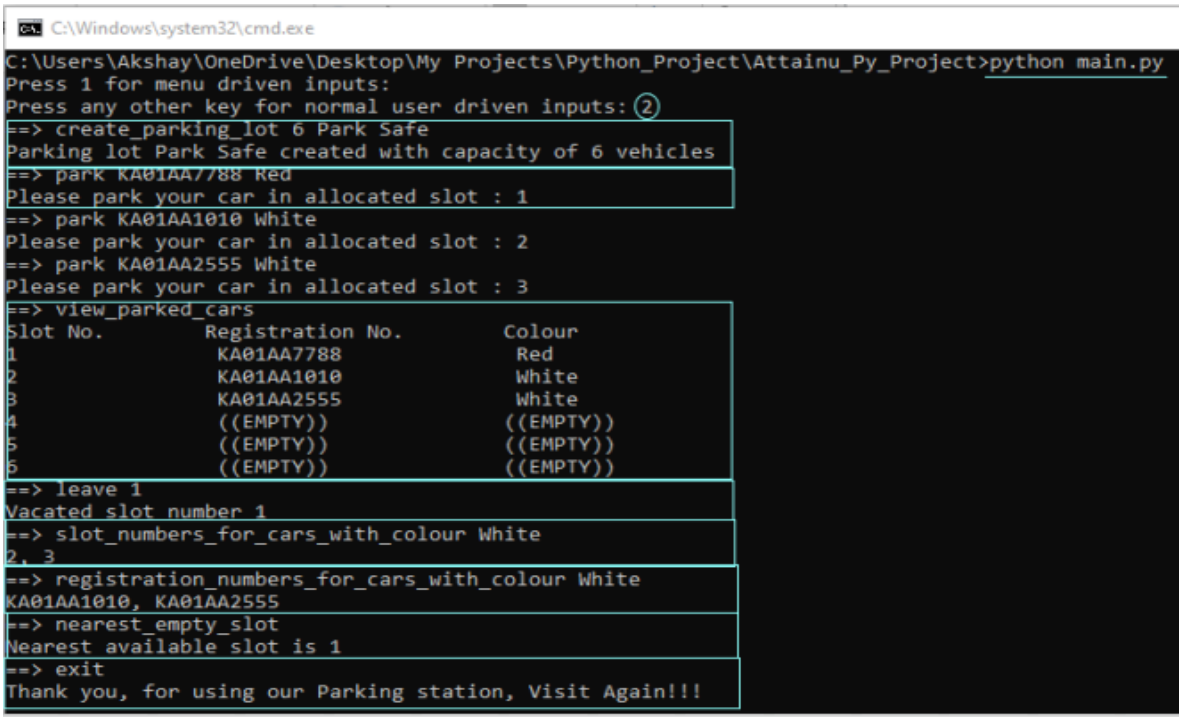
- Input files have the all the commands to test the features of Parking lot program, it will generate following output the in the shell window:

```
C:\Users\Akshay\OneDrive\Desktop\My Projects\Python Project\Attainu_Py_Project>python main.py -run input_file1.txt
Parking lot Park_Safe created with capacity of 6 vehicles
Please park your car in allocated slot : 1
Please park your car in allocated slot : 2
Please park your car in allocated slot : 3
Please park your car in allocated slot : 4
Please park your car in allocated slot : 5
Please park your car in allocated slot : 6
Vacated slot number 4
Slot No.        Registration No.        Colour
1               KA-01-HH-1234           White
2               KA-01-HH-9999           White
3               KA-01-BB-0001           Black
4               ((EMPTY))              ((EMPTY))
5               KA-01-HH-2701           Blue
6               KA-01-HH-3141           Black
Please park your car in allocated slot : 4
Parking lot is full, can't accomodate more vehicles... SORRY!
KA-01-HH-1234, KA-01-HH-9999, KA-01-P-3331
1, 2, 4
The car with registration no. KA-01-HH-3141 is parked in slot 6
No such car is Parked here
```

➢ To run with User driven input:

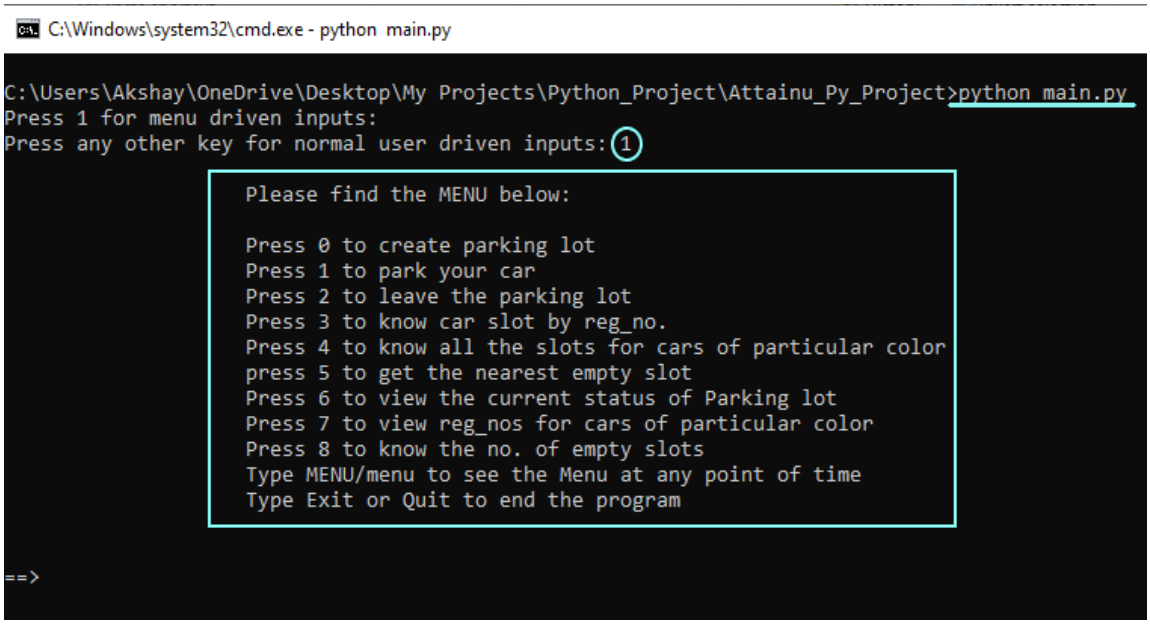
- Open the folder containing source code files in shell and type following command: `python main.py`, then **press any key except 1** after the prompt.
- Now user has to type the commands manually in following format:

  - To create parking lot of size N and name XYZ:
    `→ create_parking_lot N XYZ`
  - To park a car:
    `→ park reg_no color`
  - To leave/vacate the slot:
    `→ leave slot_no`
  - To see the status of parking lot:
    `→ view_parked_cars`
  - To get Registration numbers of cars of same color:
    `→ registration_numbers_for_cars_with_colour White`
  - To get slot numbers for cars of same color:
    `→ slot_numbers_for_cars_with_colour White`
  - To get the nearest empty slot:
    `→ nearest_empty_slot`
  - To check the total available empty slots:
    `→ remaining_slots`
  - To get slot number for car by registration no.:
    `→ slot_number_for_registration_number KA-01-HH-7777`
  - To exit the program:
    `exit`

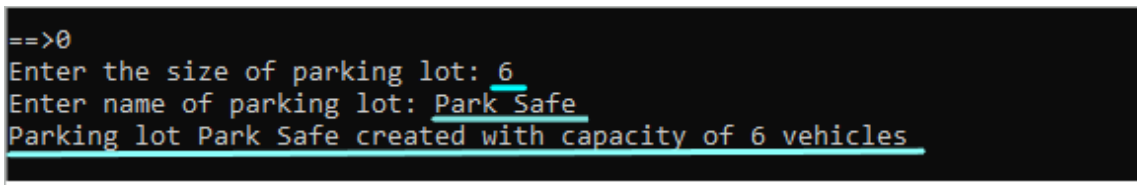


➢ To run with Menu driven input:

- Open the folder containing source code files in shell and type: `python main.py`, then **press 1** after the prompt to see the **menu**.



- Read the options and press the keys accordingly, for eg.
  Press 0 to create a parking lot, the program will ask you to enter the **capacity** as well as **name** of the parking lot



- Similarly, you can check the menu and press the respective key/number to perform the operation mentioned in the menu.