

Parking Lot

Overview: This repository gives an overview of how we can design a basic parking lot in Python. It creates parking lot with given number of slots. The cars follow Greedy approach while being parked in the slots.

File Structure: I have divided my project into three modules:

1. **Index.py** = Main File (The file which you have to Run)
2. **Classes.py** = The file where I declare and define my class and its member function.
3. **Function.py** = The file where I declare and define non-member function.

Input and Output: index.py can be run through shell or through file containing test cases. I did with file handling, in file **input.txt** all the test cases are there. You just need to run index.py, the desired output will be display in your screen. You can change input.txt according to your requirement.

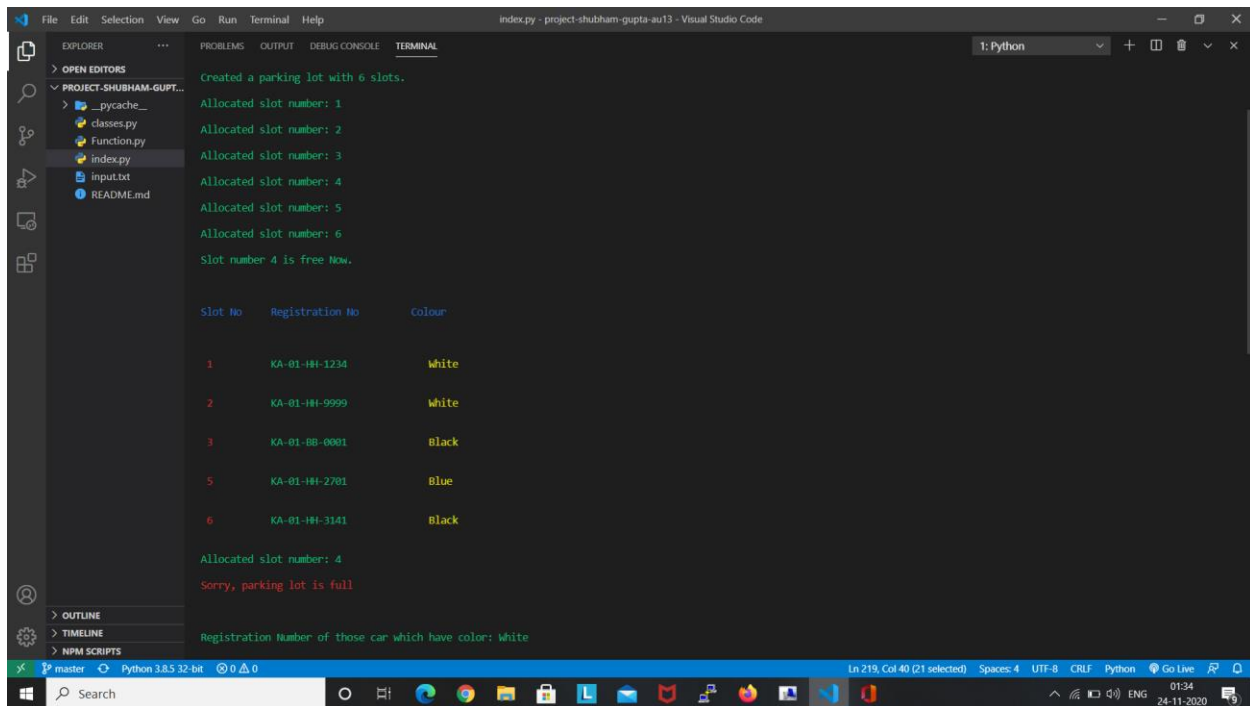
Desired functionality: index.py script defines the following functions -

1. **create_parking_lot n** - Given n number of slots, create a parking lot
2. **park car_regno car color** - Parks a vehicle with given registration number and color in the nearest empty slot possible. If there are no more empty slots available, it shows a message "Sorry, parking lot is full".
3. **status** - Prints the slot number, registration number and color of the parked vehicles.
4. **leave x** - Removes vehicle from slot number x
5. There are few query functions to retrieve slot number from registration number of cars, get registration numbers of cars with particular color etc.

Additional Functionality:

- 1. Modify slot** - I have added a feature by which you can extend the number of parking slot if you required at any instance of program. To perform this, you will have to add a command in input file. (**modify 10**). This will add 10 more new slot.
- 2. Free slot** - I have added a feature by which You can check the available slot. To perform this you will have to add a command in input file. (**display_avaiaable_slot**). This will show all free slot.

Output Screen:



```
index.py - project-shubham-gupta-au13 - Visual Studio Code
1: Python

EXPLORER
> OPEN EDITORS
PROJECT-SHUBHAM-GUPT...
  _pycache_
  classes.py
  Function.py
  index.py
  input.txt
  README.md

TERMINAL
Created a parking lot with 6 slots.
Allocated slot number: 1
Allocated slot number: 2
Allocated slot number: 3
Allocated slot number: 4
Allocated slot number: 5
Allocated slot number: 6
Slot number 4 is free Now.

Slot No    Registration No    colour
1          KA-01-HH-1234    White
2          KA-01-HH-9999    White
3          KA-01-BB-0001    Black
5          KA-01-HH-2781    Blue
6          KA-01-HH-3141    Black

Allocated slot number: 4
Sorry, parking lot is full

Registration number of those car which have color: White
```

The screenshot shows a Visual Studio Code editor window with the following components:

- Explorer Panel:** Displays the file structure of the project 'PROJECT-SHUBHAM-GUPTA-13'. The files listed are `__pycache__`, `classes.py`, `Function.py`, `index.py` (selected), `input.txt`, and `README.md`.
- Editor Panel:** Shows the content of `index.py`. The code is a Python script that prints registration numbers of cars with a specific color and the slots number for those cars. The output is as follows:

```
Registration number of those car which have color: White
KA-01-HH-1234
KA-01-HH-9999
KA-01-P-333

Slots Number of car which have color: White
1
2
4

Slots Number of those car which have Registration_number : KA-01-HH-3141
6

Slots Number of those car which have Registration_number : MH-04-AY-1111
No Record Found

Thank U ..Happy Coding!!!
```
- Terminal Panel:** Shows the command prompt output. The prompt is `shubh@LAPTOP-V00Q038R MINGW64 ~/Desktop/project-shubham-gupta-au13 (master)`. The prompt is followed by a dollar sign `$` and a cursor.
- Bottom Bar:** Shows the status bar with the following information: `master`, `Python 3.8.5 32-bit`, `Ln 219, Col 40 (21 selected)`, `Spaces: 4`, `UTF-8`, `CRLF`, `Python`, `Go Live`, and the date `24-11-2020`.