

# Python Interview Assignment

## Parking Lot Assignment

### 1. Problem Statement

Design a Parking lot which can hold  $n$  Cars. Every car been issued a ticket for a slot and the slot been assigned based on the nearest to the entry. The system should also return some queries such as:

- Registration numbers of all cars of a particular color.
- Slot number in which a car with a given registration number is parked.
- Slot numbers of all slots where a car of a particular color is parked.

### 2. Solution Approach

A car consists of Registration number, slot number and its color. Likewise, our Parking Lot consist slots. For not making it too complicated, I choose a python dictionary for storing cars on slots and implemented the functionalities as accordingly.

### 3. Supported Commands

- `create_parking_lot <n>`  
To create a Parking lot. Where `n` is the size of the parking lot
- `park <registration_number> <color>`  
To park the car in the parking lot and prints the allocated slot in the parking lot. Where `registration_number` is given registration number for the car and `color` is given color for the car
- `leave <slot>`  
To leave the parking lot from desired slot and prints the leaving slot. given slot number. Where `slot` is given slot number
- `status`  
To check the status of Parking Lot
- `slot_numbers_for_cars_with_color <color>`  
To prints the registration number of the cars for the given color. Where `color` is given color
- `slot_number_for_registration_number <registration_number>`  
prints the slot number of the cars for the given number. Where `registration_number` is given registration number.
- `registration_numbers_for_cars_with_color <color>`  
To prints the slot number of the cars for the given color. Where `color` is given color.

### 4. Running Application

#### 4.1 Running the application in File mode:

```
./ParkingLot.py input.txt
```

#### 4.2 Running the application in Interactive mode:

```
./ParkingLot.py
```