Problem Statement

I own a parking lot that can hold up to 'n' cars at any given point in time. Each slot is given a number starting at 1 increasing with increasing distance from the entry point in steps of one. I want to create an automated ticketing system that allows my customers to use my parking lot without human intervention.

When a car enters my parking lot, I want to have a ticket issued to the driver. The ticket issuing process includes us documenting the registration number (number plate) and the colour of the car and allocating an available parking slot to the car before actually handing over a ticket to the driver (we assume that our customers are nice enough to always park in the slots allocated to them). The customer should be allocated a parking slot which is nearest to the entry. At the exit the customer returns the ticket which then marks the slot they were using as being available.

Due to government regulation, the system should provide me with the ability to find

out:

- Registration numbers of all cars of a particular colour.

- Slot number in which a car with a given registration number is parked.

- Slot numbers of all slots where a car of a particular colour is parked.

  We interact with the system via a simple set of commands which produce a specific output. Please take a look at the example below, which includes all the commands you need to support - they're self explanatory. The system should allow input in two ways. Just to clarify, the same codebase should support both modes of input - we don't want two distinct submissions.

  1) It should provide us with an interactive command prompt based shell where commands can be typed in

  OR / AND

  2) It could be run with Unit test framework

Input and output formats are defined below, below format is expected from the program. Either on console and / or assertions with Unit tests are required.

Input

```
create_parking_lot 6
park KA-01-HH-1234 White

park KA-01-HH-9999 White

park KA-01-BB-0001 Black

park KA-01-HH-7777 Red
```

```
park KA-01-HH-2701 Blue

park KA-01-HH-3141 Black

leave 4
status

park KA-01-P-333 White
park DL-12-AA-9999 White
registration_numbers_for_cars_with_colour White
slot_numbers_for_cars_with_colour White
slot_number_for_registration_number KA-01-HH-3141
slot_number_for_registration_number MH-04-AY-1111
```

Output :

```
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

Slot No. Registration No   Color

1        KA-01-HH-1234     White
2        KA-01-HH-9999     White
3        KA-01-BB-0001     Black

5        KA-01-HH-2701     Blue

6        KA-01-HH-3141     Black

Allocated slot number: 4

Sorry, parking lot is full

KA-01-HH-1234, KA-01-HH-9999, KA-01-P-333

1, 2, 4
6
Not found
```