



GreenStitch

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SDE Hiring

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.

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

Example: Interactive

Assuming a parking lot with 6 slots, the following commands should be run in sequence by typing them in at a prompt and should produce output as described below the command. Note that exit terminates the process and returns control to the shell.

```
$ create_parking_lot 6
Created a parking lot with 6 slots
$ park KA-01-HH-1234 White
Allocated slot number: 1
$ park KA-01-HH-9999 White
Allocated slot number: 2
$ park KA-01-BB-0001 Black
Allocated slot number: 3
$ park KA-01-HH-7777 Red
Allocated slot number: 4
$ park KA-01-HH-2701 Blue
Allocated slot number: 5
```

\$ park KA-01-HH-3141 Black

Allocated slot number: 6

\$ leave 4

Slot number 4 is free

\$ status

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-2701 Blue

6 KA-01-HH-3141 Black

\$ park KA-01-P-333 White

Allocated slot number: 4

\$ park DL-12-AA-9999 White

Sorry, parking lot is full

\$ registration_numbers_for_cars_with_colour White KA-01-HH-1234, KA-01-HH-9999,
KA-01-P-333

\$ exit

The application needs to be created using **Java** as the underlying programming language.