Homework #2

Due: 2/13/26 by 5 PM

We are beginning our dive into multi-object Java programs with a simple demonstration of a parking lot. For this programming problem, submit your work to the Homework #2 link on Brightspace (and remember to ensure the .java files are included **and not .class files!**). There are four .java files expected (one for each class, defined below). We will look at homework submission again soon.

This assignment will likely be review from COS125, but is your first truly object-oriented one, so be careful to not underestimate it!

Write a small program that implements a parking lot manager. Your program should implement the following classes:

- **Car:**
  - Contains two strings for “make” and “color”. It also contains a boolean representing whether this car has handicap accessible parking.
  - Implements a constructor that takes the aforementioned three instance variables.

- **ParkingSpot:**
  - Contains an instance of **Car** describing the car currently parked in this spot.
  - Contains a boolean variable “handicap”, set to true if the spot is handicap accessible.
  - Implements a constructor that takes the aforementioned boolean.

- **ParkingLot:**
  - Contains an array of eight **ParkingSpots,** two of which must be handicap accessible.
  - Implements a constructor that creates the aforementioned array.
  - Implements a method that takes a **Car** and parks it in an *appropriate* available parking spot. This method should return an int representing the chosen index of the chosen parking spot in the array.
  - Implements a method that takes an int and removes and returns the specified **Car** from the given **Parking Spot.**
  - Implement toString() to return a string containing the number of handicap accessible and standard parking spots available separated by a single space (X Y)

- **ParkingTester:**
  - Contains only a main class that performs the following operations:
    - Instantiate a **ParkingLot**
    - "Print" the **ParkingLot** by calling its ToString() method
    - Instantiate a **Car** that represents a "Blue Ford", with handicap accessible tags
    - Park this **Car** in the **ParkingLot**
    - "Print" the **ParkingLot** by calling its ToString() method
    - Instantiate a **Car** entirely that represents a "Black Mazda", non-handicap
    - Park this **Car** in the **ParkingLot**
    - "Print" the **ParkingLot** by calling its ToString() method
    - Remove the first **Car** (the Ford) from the **ParkingLot**
    - "Print" the **ParkingLot** by calling its ToString() method

Your output should appear in the console, and look like the following:

```
2 6
1 6
1 5
2 5
```

Note that your code will be checked for completion of each of the above, but if you arrive at this output and have followed the lists above, you're likely to be done.

When you're ready to submit your work, package your **.java files** (and not .class files) in a zip file using the following naming convention:

lastname-firstname-cos225-hw02.zip

Submit this .zip file containing each of the above .java files to Brightspace link for Homework #2.