

Programming Assignment #5: Car Doors

Goal: Write a class entitled `CarDoorConfiguration` that correctly informs the user which doors on a van would be open under certain conditions. Bundle this class with a tester class (with a `main` method) that tests the output of `getStatus` under a few scenarios. Submit a zipped version of the entire project folder.

Problem statement:

A minivan has two sliding doors, one on the left side and one on the right. Each door can be opened in one of three ways: from the outside handle, from the inside handle, or from a button on the dashboard of the vehicle. In certain circumstances, however, a door won't open when an attempt is made. If the vehicle is not in "Park", all doors won't open from inside, outside, or from the dashboard. If the security lock feature (from the key fob) is activated, no door will open from the outside. When the child safety lock is activated, then neither door can be opened from the inside. Aside from these cases, the door will open.

You will design a class entitled `CarDoorConfiguration` that will have the following public interface:

```
public class CarDoorConfiguration {
    private boolean securityLockActivated;
    private boolean childLockActivated;
    private String gear;

    public CarDoorConfiguration(boolean securityStatus, boolean childStatus, String gearStatus) ...

    public void setConfiguration(boolean securityStatus, boolean childStatus, String gearStatus) ...

    public String getStatus(String side, String source) ...
}
```

You may add other instance variables, methods, and constructors, but the aforementioned are required. Some details:

- `securityLockActivated` will be `true` if security lock feature is activated and `false` otherwise
- `childLockActivated` will be `true` if the child lock feature is activated and `false` otherwise
- You may assume that `gear` will take on one of the following `String` values: "P", "D", "N" or "R" (park, drive, neutral, or reverse). I won't stuff anything else into it, I promise...
- The variable `side` can be assumed to either be "left" or "right".
- The variable `source` can be assumed to be one of three things: "outside", "inside", or "dashboard".
- The output of `getStatus` will be one of three things;
 - "both doors are closed"
 - "the left door is open and the right door is closed"
 - "the right door is open and the left door is closed"

For help with debugging, if the following code is run in the tester:

```
CarDoorConfiguration config = new CarDoorConfiguration(true, false, "P");
System.out.println(config.getStatus("left", "inside"));
config.setConfiguration(true,false,"R");
System.out.println(config.getStatus("right", "outside"));
config.setConfiguration(false,true,"P");
System.out.println(config.getStatus("left", "dashboard"));
config.setConfiguration(false,false,"P");
System.out.println(config.getStatus("right", "inside"));
config.setConfiguration(false,true,"P");
System.out.println(config.getStatus("left", "inside"));
config.setConfiguration(false,false,"N");
System.out.println(config.getStatus("right", "outside"));
config.setConfiguration(true,true,"P");
System.out.println(config.getStatus("right", "dashboard"));
```

The output to the console will be:

```
the left door is open and the right door is closed
both doors are closed
the left door is open and the right door is closed
the right door is open and the left door is closed
both doors are closed
both doors are closed
the right door is open and the left door is closed
```