

CMSC131, Spring 2022, QUIZ #3 (DURATION: 20 MINUTES) – 30 pts

FIRSTNAME, LASTNAME (PRINT IN UPPERCASE):

STUDENT ID (e.g. 123456789):

INSTRUCTIONS:

Draw a memory map for the following program up to the point in the program execution indicated by the comment **/*HERE*/**. Indicate where each frame starts and ends in the stack. Remember not to draw the frame for methods that would have finished by the time we reach the stopping point (**/* HERE */**).

```
public class Car {

    public static int TOTAL_MILES = 0;
    private String make;
    private String color;
    private int miles;
    private StringBuffer repairs;

    public Car(String make, String color) {
        this.make = make;
        this.color = color;
        this.repairs = new StringBuffer("Repairs: ");
        miles = TOTAL_MILES;
    }

    public Car(Car c)
    {
        this.make = c.make;
        this.color = c.color;
        this.repairs = new StringBuffer(c.repairs); //copy constructor
        miles = c.miles;
    }

    public void setMiles(int miles) {
        this.miles = miles;
        /* HERE */
    }

    public void addRepair(String task ) {
        repairs.append(task);
    }

    public String toString() {
        return "Car [make=" + make + ", color=" + color + ", miles=" + miles + ", repairs=" + repairs + "];"
    }

}

public class Driver {

    public static void output(Car c, int newMiles)
    {

        c.setMiles(newMiles);
        System.out.println(c);
    }

    public static void main(String[] args) {
        int miles = 3500;
        String color = "blue";

        Car c1 = new Car("TerpCar", color);
        Car c2 = new Car (c1);

        c1.addRepair("change oil");
        c2.addRepair("fix dent");

        output(c2, miles);
        System.out.println(c1);
    }

}
```

