HOMEWORK 4 - SPRING 2023

HOMEWORK 4 - GRADING KEY

1. (17 points) Documentation and coding style:

- Name, ID number and recitation at the top of ALL java files [2 points]
- Precise and correct specifications[5 points]
- Indentation[3 points]
- Variable names[2 points]
- Javadoc Style *(see NOTE). [5 points]

NOTE 1: You only need to submit your *.java files. We will use the javadoc *.java command to create the javadoc files.

NOTE 2: YOUR ASSIGNMENT WILL NOT BE GRADED if you submit only *.class files.

2. (18 Points) Source Code

- Implementation done as specified (additional methods are OK, as long as these methods do not expose private variables.) [4 points]
- Coding style: flexible, extensible, good use of methods and avoid duplicate code. [5 points]
- **Program implements VehicleQueue class correctly. If using Java API to implement this, you must use inheritance. If not a subclass, 4 points will be deducted. (i.e. VehicleQueue be a subclass of the Java API class you selected).** [6 points]
- Throw an exception back to the calling method(s) if a precondition is violated. [3 points]

3. (65 Points) Program Correctness

- Program compiles without any errors. [5 points]
- Correctly interprets command line arguments for simulation time, arrival probability number of roads, road names and max green times [3 points]
- The following simulation elements are executed correctly
  - Car Arrival and SerialId [9 points]
  - Stop Light Changes Phases [9 points]
  - Cars are removed from queues [13 points]
  - Cars are printed when they are removed from the queue. [9 points]
  - Stop light advances when there are no cars in the lane (both for left lane and for the other road) [5 points]
  - Trend: as the initial probability of arrival is increased to 1, the average wait time increases [8 points]
- Erroneous input handled "gracefully." (Appropriate Error messages displayed to the user.) [4 points]
