PROJECT-R

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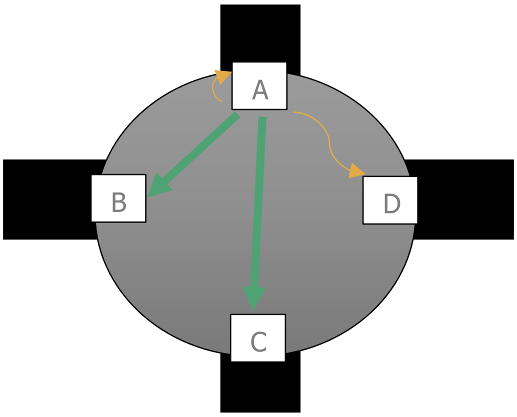
Time spent: 2 hours (aprox.)

Language: Javascript

Description

This Project has the objective of simulating a roundabout. It has 4 roads and only one is active at the same time. If road number A is active, cars can go to B and C. The cars who want to go to D and A, will wait in C. This is not how a roundabout usually works, because road C should be active too. But this idea has been refused. This is because the objective of the project what to something in 2 hours with a new language and make the code modular and configurable.



Green: direct transport

Orange: All the cars will wait in C (and from there, they will go to A and D)

About the code

The program simulates a round and print in console results (and in a file called results.txt). If you want to use this program for something, you can get a lot of info from these values. (For example, the percentage of cars that go from A to C). In real cases, this can be used to modify the time values

You can config in lines 14-18 all the configurable variables of the program.

- Traffic [A,B,C,D]: How many cars will appear on each road. 1 is the normal value. With 0.5 will appear half of the cars, and with 2 the double. (Imagine one like a 100% with it's the normal value). The code is a basic idea of a more complex program that can be used for example to modify the time values of a semaphore in real-time (Intelligent cities.)
- Probs [A,B,C,D]: How many cars want to go on a road. 1 is the normal value. (Imagine one like a 100% with it's the normal value).
- Goalit: The iterations that the program will do (1 iteration = 1 open road)
- Max and Min: How many cars will be generated for a direction in each road. It is a random value, and this value gets generated before using traffic/probs values. These values are common for all directions

  Data values for example: min = 0, max = 10 , traffic = [1,1,1,0.5] probs = [1,2,1,0.5]. We are on D
  D to A: 5 (random value between max and min) * 0.5 (traffic on D) * 1 (probs) = …
  D to B: 7 * 0.5 * 2 = …
  D to C: 0 * 0.5 * 1 = …
  D to D: 10 * 0.5 * 0.5 = …

We can have 231.4 cars for example. The program work with too many iterations and works with decimal numbers to try to get the maximum precision at the end, for example 242312.4 cars -> 242312 cars at the end. That's it's a better result that the one that we will get using integers because we lose precision at the end.

Note: You can disable the graphic representation by deleting line 60