(A hint for diploma project in Brest State Technical University 2009)

Traffic Sygnal Controll by Genetic Algorithm

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1 Preparation

Try to nimate, say, 20 cars each of them has a different speed in a simplified road map below where trafic signals all change from green to red or red to green every 30 seconds.

Notice that trafic signals from 01 to 08 and those from 11 to 18 should be always different color that is when 01 to 08 are green, 11 to 18 are read, and vice versa.

Also notice that the size of all the 4 blocks should be different in order to introduce a little complexity.

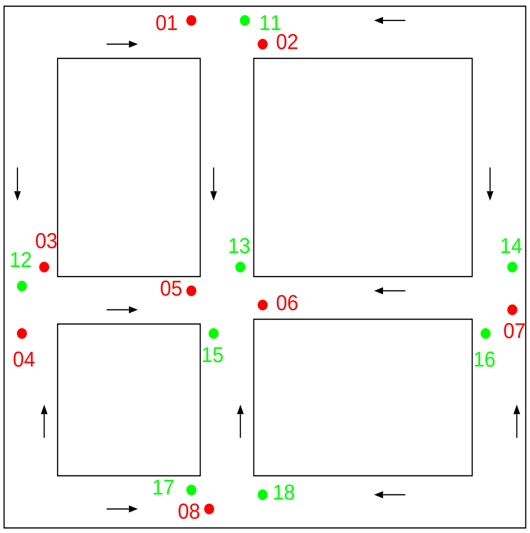

Figure 1: An example of road map with trafic signals.

2 GA implementation

Design a Genetic Algorithm so that we can obtain optimal flow of those cars. That is, those cars wait for red signal with a minimal time.

(1) Chromosome is made up of 8 genes.

(2) The genes in a chromosom represent time of its signal maintain the same color.

(3) Fitness is total time for those cars to wait for red signal in a time window, say, for 10 minutes.

You should make a problem so that we can observe the result.

3 Further Work

Make this roak map more complicated one. This should be done step by step.