

CE 3201: Introduction to Transportation Engineering My Traffic Kontrol

Week Assigned: October 15, 2007

Due: Following week before lab.

Objective:

The assignment seeks to introduce students to traffic signal operations through an interactive network. Labs in the coming weeks will build on this knowledge.

Instructions:

1. Please open the following website:
<http://street.umn.edu/Game/MyTrafficKontrol.html>. Access can also be obtained through the class website at <http://nexus.umn.edu/Courses/ce3201/>.
2. Click the start button in the center of the screen.
3. A network setting box will appear with the following options:
 - a. Traffic Volume – (low, medium, and high)
 - b. Vehicle Speed – (slow, medium, and fast)
 - c. Network Size – (2x2, 3x3, 4x4)
 - d. Control Type – (mouse click, fixed)To familiarize yourself with the program select – low, slow, 2x2, and mouse click.
4. Each scenario is randomly generated, but the object remains the same – minimize the queue, minimize the delay, maximize your score, and maximize the performance index. In the lower right hand corner of the game box exists a play button, a pause button, a graph button, and a help button. Use them as needed.

Exercise 1

After familiarizing yourself with the program, set the network settings to **medium, medium, 2x2, and mouse click**. Play the game at least twice. Record your time, queue, delay, score, and PI from both games. Save your queue and delay graphs from your most successful game. (To capture the screen, use “alt+print screen” and paste into MS Word via “Control V.”) Be sure to save your high score with your full name.

Exercise 2

Now change the network settings to **high, fast, 4x4, and mouse click**. Play the game at least twice. Save your queue and delay graphs from your most successful game. Record your time, queue, delay, score, and PI from both games. Be sure to save your high score with your full name.

Exercise 3

Now change the network settings to **medium, medium, 3x3, and fixed**. After starting the game, adjust the signal timing to improve efficiency. Play the game at least twice. Save your queue and delay graphs from your most successful

game. Record your time, queue, delay, score, and PI from both games. Be sure to save your high score with your full name.

Additional Questions

In addition to submitting the results of your exercises in an organized manner, please answer the following questions.

1. When completing the Exercises 1 and 2, what system optimization (i.e. mouse clicking techniques) did you find most effective? How did you improve efficiency of the network?
2. What system optimization challenges did you face in Exercises 1 and 2? How did they change in Exercise 3?
3. Using the exercises, readings, and class lectures as background, what can traffic operation engineers do to improve system efficiency?
4. What factors might complicate the job of a traffic operations engineer? Think creatively.