Mini-Project II
(due: Tuesday, March 31, 9:30 am)
paper due at beginning of class, presentations in class

1. Use your traffic flow program or the solution programs to the in-class work (see below). Do your own variation on the traffic flow program and/or its analysis. For example add a traffic light, construction site (e.g. causing VMAX to be less for some of the sites), or change the rules of the one dimensional model, or any other change of your choice.

2. Run your program with varying parameters such as PCAR. Observe carefully and take precise notes. For your analysis you may look at space-time diagrams and/or you might want to measure the average velocity $v_{av}(t)$, $v_{eq}(c) = \frac{1}{(t_{tot}-t_{eq})} \sum\limits_{t>t_{eq}}^{t_{tot}} v_{av}(t)$, and/or $j_{eq}(c) = cv_{eq}$ where c is the concentration of cars $c = \frac{\text{number of cars}}{\text{ROADLENGTH}}$ (see programs `traffic10.cc, traffic11.cc, traffic12.cc` and see today's class, Tue, March 29).

3. Write a **paper** about 1. and 2. The paper (about one latex-page) should contain a short introduction which explains clearly which task you tried to do The next section should explain precisely what your new model is, such that everybody in class could write a program, which does exactly the same as what your program does. View this section as the "Model/Simulation" section. For completeness include also the unchanged rules of traffic flow. Include a description of all parameters you used (VMAX, ROADLENGTH, etc.) Then describe your results. What have you observed. End with conclusions and possibly some ideas for future work.

4. Prepare a mini **talk** (about 20 min each student) for next class, March 31. The content of your mini-project II talk is the same as the content of your mini-project II paper: model, variation(s), results. Prepare what you will say and some slides. Make sure that you can get to your talk slides (latex beamer, powerpoint etc.) on the computer in BERT012. Time your talk with a practice talk and prepare such that you will not spend time on editing, compiling or copying.

5. Comments As always, any comments about the course and/or assignment are welcome! Thank you for all your feedback! It is fun working with you!

Solutions:
~kvollmay/classes.dir/capstone_s2011.dir/traffic.dir/traffic2a.cc etc.

Schedule:

- March 31 Mini-Project II Presentations
- April 5: Final Running Program
- April 12: 1$^{\text{st}}$ Version of Results
- April 19: 2$^{\text{nd}}$ Version of Results
- April 21: Abstract
- April 26: Second Paper First Version
- May 3: Second Paper Final Version