NetLOGO assignment assigned Wednesday, September 01, 2010 **Due: Friday, September 10th by 5 pm**

1. Create a NetLogo model. In your model create 20 turtles. Have the "odd" turtles take 7 steps forward. Have the "even" turtles take 14 steps forward. Save your NetLogo model and send to to jacobson@cs.uni.edu as an attachment. *You may add additional features to this, if you wish. For example, you might want the turtles to do a dance or change colors or spiral a circle of squares after the get out to their destination. Any extras are welcome, but completely optional.*

Send to jacobson@cs.uni.edu as an attachment. The **cs** is CS for Computer Science.

remainder

remainder *number1 number2*

Reports the remainder when *number1* is divided by *number2*. This is equivalent to the following NetLogo code:

```
number1 - (int (number1 / number2)) * number2
```

```
show remainder 62 5
=> 2
show remainder -8 3
=> -2
```

2. In the NetLogo models library, open File->Models Library; Sample Models -> Chemistry & Physics -> GasLab -> GasLab Maxwells Demon.

- Click on the Information tab and read the sections on "What is it?" and "How it works." Answer these questions.
  - Who is "Maxwell's Demon," and what does the demon do?
  - How does the model detect when two balls "hit" each other?

- Click on the Interface tab. Change the number of particles to 500, click "setup," and then click on "go."
  - In the middle interface, balls with numbers appear. What do these represent?
  - What does the color of the balls represent?
  - The balls are not always the same color as when the simulation started out. What makes them change their color?
  - Describe what happens when your models is allowed to run over a long period of time (you may want to increase the speed).

3. Read pages 49–59 of the Turtles, Termites, and Traffic Jams textbook and turn in one half pages of thoughts, notes, confusions, insights, reflections about your reading to prove that you read it and engaged with the material. You may write down and quote some sentences from the material.

4. Pick two model s from the NetLogo models library and indicate in one sentence or a few sentences if you wish, why you would like to study and learn more about each of these two models. You are welcome to pick more than two if you get excited and can't decide on just two.

For attachments, send email to Jacobson@cs.uni.edu with the attachment of your NetLogo project.