Project #2 – Modeling Systems and Processes
CS4375W/6375G – Fall 2011

Select a system or process for modeling. This could be anything from a sub-system in a car or human to a manufacturing or queuing system. You can get ideas from episodes of the Science Channel's "How It's Made" at science.discovery.com/videos/how-its-made/. These are 3-5 minute videos on how all kinds of things are made and can give you the basic structure for a process that you can then fill-in with details you make up to complete a detailed process. Study the behavior of the system/process and develop a set of knowledge diagrams that capture the information about the components of the system/process and how they interrelate and influence each other. Whatever you pick, you need to be sure that your project is large enough that it will require a minimum of 50 blocks when implemented into an Extend model. *The system selected should be significant, as you are being provided with one class period to develop this simulation!*

Part 1: Develop a 10 minute PowerPoint presentation on the system or process you have selected to present to class on Thursday, October 6. This Powerpoint should be turned in on CD at the time of the presentation. Be sure to include the following in your presentation:

- Overview of the system or process and why you selected it
- An initial cut at the top level knowledge diagram representing how the system or process works (implemented in Visio, Powerpoint, or by hand)
- Note that the model will be implemented in Extend, so also provide some indication of how you intend to map the various components in your draft knowledge diagrams to the various functional blocks available in Extend
- The types of inputs you will need, and the outputs you will track, in order to test your model and monitor its behavior

Part 2: Implement your selected system or process in Extend. Be sure to implement a "notebook" for the inputs, and include plenty of plotters to provide the output of your system or process over the duration of the simulation. Be prepared to provide a 10 minute PowerPoint presentation summarizing what you did, showing a complete set of knowledge diagrams, and demonstrating your project to the class on Thursday, October 20. The demonstration should include a variety of interesting sets of inputs to illustrate the various behaviors of the system/process you selected.