Variable-Based Approach

2-17-2005

Opening Discussion

- Do you have any questions about the quiz?
- What did we talk about last class?
- Let's write a possible solution to you assignment #2.
- General philosophy and approach to classes.

Queuing Simulations

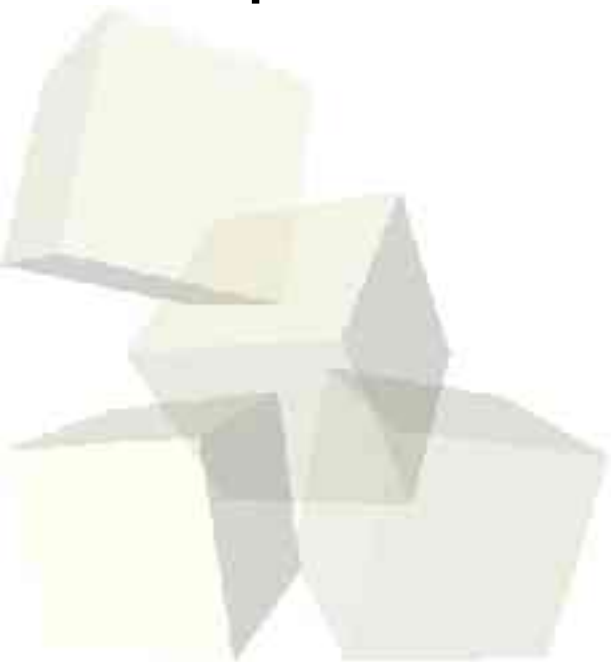
- Functional models can be used for queuing simulations like the one you have written for assignment #2. The blocks in the functional diagram are queues that are waiting to be serviced and whatever is being serviced moves from one block to another.
- It is also possible that queues might have a maximal length in which case some object might get blocked from moving on even if they are done with one station because there is no place to wait for the next.

Variable-Based Approach

- We can also do functional modeling where we focus not on the functions, but instead on the variables that the functions are acting upon.
- In this situation we typically draw the variables as nodes in our graph and the arcs connecting them are functions that transform values from one or more variables into another variable.

Signal-Flow Graphs

- If we do a straight conversion from a “normal” block diagram where we change blocks to labeled edges and change edges to labeled variable nodes, we have produced a signal-flow graph.



Kinetic Graphs

- Another type of variable-based functional diagram is a kinetics graph. These are useful in chemistry when dealing with kinetics (how reactions proceed).
- A kinetics graph is nothing more than a diagram showing how one type of substance gets turned into others during a reaction.

Minute Essay

- How far did you get on assignment #2?