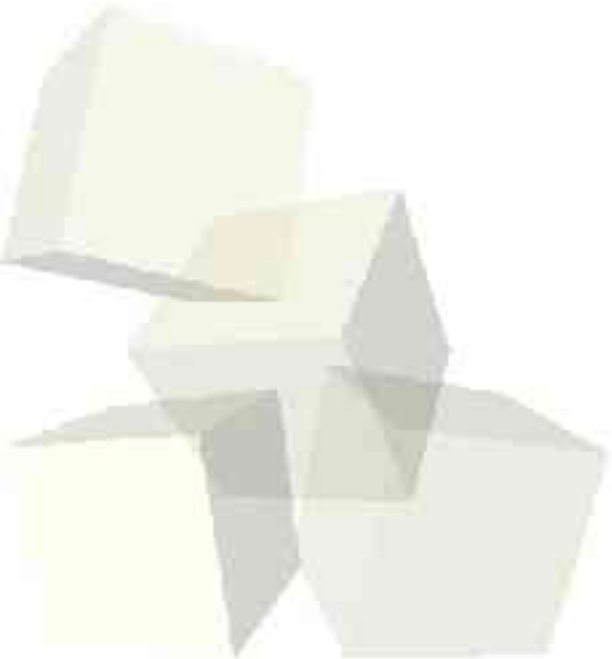
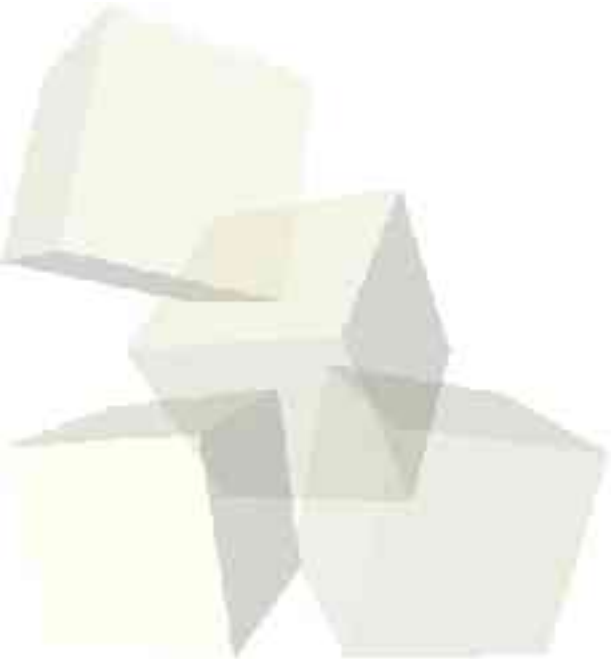
Multimodeling

3-31-2005



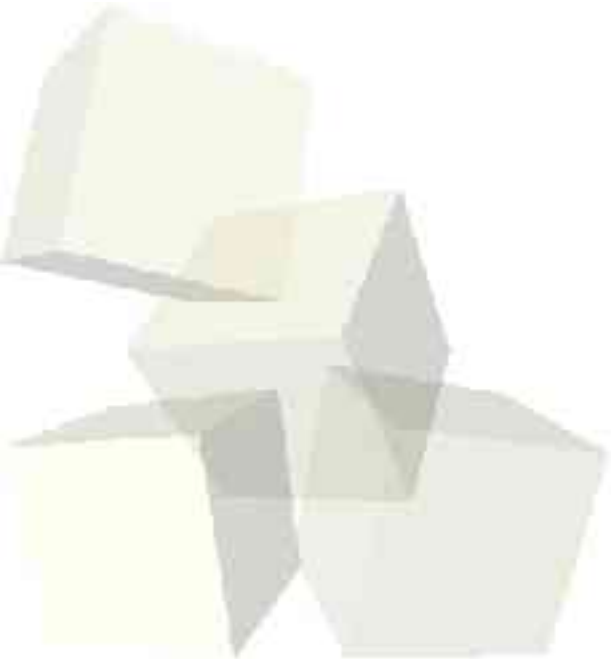
Opening Discussion

- What did we talk about last class?
- How are people coming on their projects? Have you run into anything in your project that you have questions about?



Code

- I want us to put in the code for our lid. I think it is significant for us to model this type of system so you can see what goes into it.



Multimodeling

- Everything we have talked about and done so far has been dealing with a single type of model and trying to make it work for our system. Because models have limitations, this isn't generally ideal. Most real systems have many parts and those parts might behave in different ways, yet they impact one another.
- This is where multimodeling comes in. We simulate different parts with different formal models and link them together.

Abstraction Networks

- One way of viewing a multimodel is with an abstraction network. We represent different submodels as rounded rectangles and link them together with arrows that indicate the relationships between them.
- If two models are different views of the same system then they have a map relationship.
- Two models can also be related as a refinement/abstraction in a hierarchy. We view the system at one level of detail in one level and a higher one in the refinement.

Aggregation and Decomposition

- Many times a high level model is just an aggregation of lower level models.
- We use this type of description when we aren't passing information from a low level to a high level, the information flows from one component to another on the same level.
- This type of description is great for things like digital circuits where we don't want to see things at the transistor level and often we want to group simple gates into more complex units.

Minute Essay

- What would be an example not mentioned in class of a situation where you would use a multimodel? What different types of models would you join together for it?