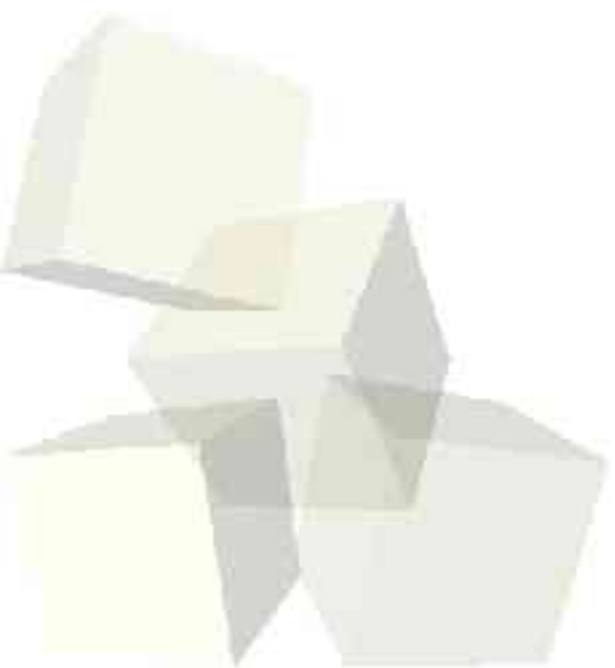





Continuations

11-22-2004





Opening Discussion

- What are some of the general features of ML?
 - Do you have any questions about assignment #8? Have you looked at the description of assignment #9 yet? If so, do you have any question on what you will be doing for it?
- 



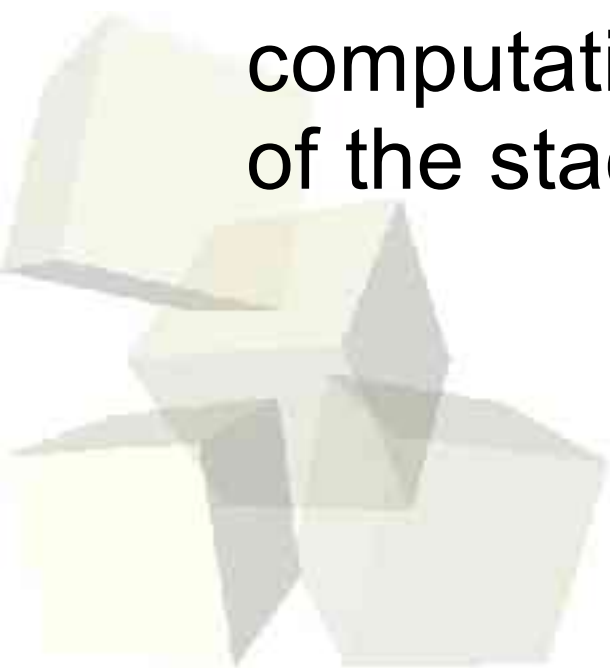
Control Structures

- You know about a number of control structures that you have used in both functional and non-functional languages.
 - ◆ If and Switch/Case for conditional execution
 - ◆ Various loops or recursion for repeated execution.
- These control structures are generally seen in all languages.
- Continuations are a completely different style of control structure that doesn't exist much in non-functional languages.



Contexts

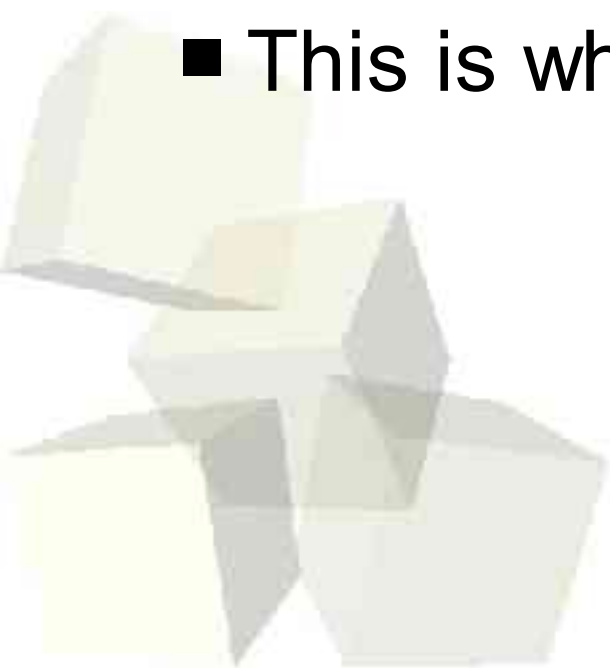
- To talk about continuations we need the idea of a context. For a given statement, the context is what remains of the computation when that statement is reached.
- From a hardware standpoint, the context of a computation is basically stored in the state of the stack.





Escape Procedures

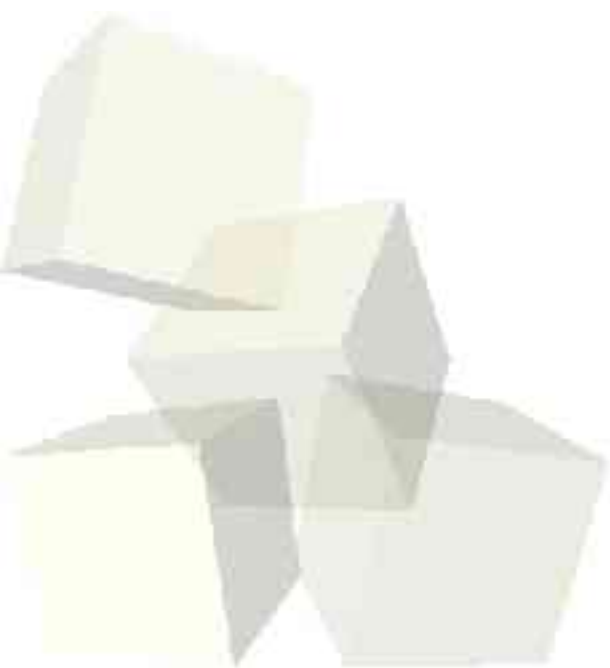
- One thing we haven't been able to do in Scheme that is significant for continuations is the ability to stop a computation at a particular time and simply have it return a value.
- This is what an escape procedure.





Continuations

- What a continuation is is a construct that stores the state of a computation (records the context), then allows you to return to that state (escape the current computation to the stored context).





Minute Essay

- Where might you use a continuation in code? What could make continuations really slow?
- Remember that assignment #8 was due today, but now it needs to be extended until at least tomorrow.

