



# Variables and Parameters

1/28/2008





# Opening Discussion

- Do you have any questions about the quiz?
- Let's look at solutions to the interclass problem.
- Minute Essay responses
  - ◆ How can you make the camera view the scene from above?
  - ◆ Timing between provided walk methods and moves. For this you have to play with the speed and distance of the move.





# A Problem

- Consider the following problem. I'd like to have the penguin walk up to the skeleton, say “hi”, then walk back to where he started?
- How can we accomplish this? What challenge do we face given what we know?





# Variables

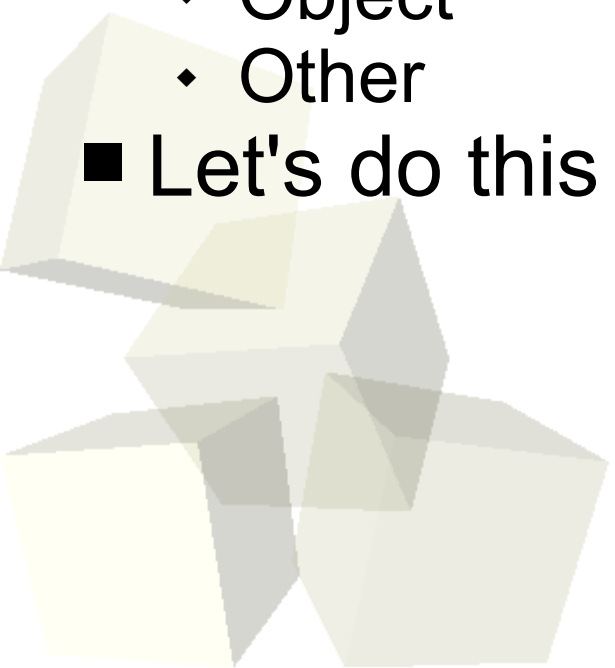
- You should be familiar with the concept of a variable from algebra. Programming variables are similar, but not quite the same.
- A variable is a name that we create that is attached to a chunk of memory in the computer that stores a value.
- Unlike a math variable, the value of a programming variable can change as we execute the program.





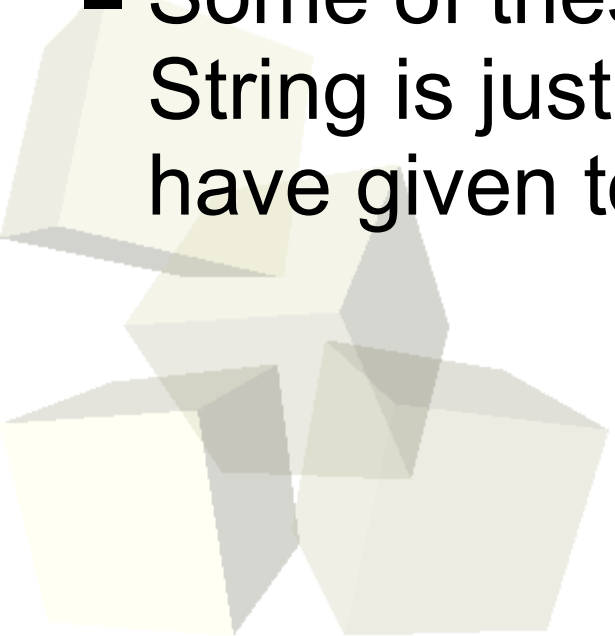
# Method Variables

- Also called local variables, we create these in the method in which we want to use them.
- We use these to compute and store values.
- We have to provide a name and a type. Alice has four variable types.
  - ◆ Number
  - ◆ Boolean
  - ◆ Object
  - ◆ Other
- Let's do this for a calculated value.





- One of the uses of variables is to store values input by the user.
- The world has methods that will bring up dialog boxes that we can use to enter values into a program.
- The world also has helpful math functions that you might need to use to calculate certain values.
- Some of these functions work with “Strings”. String is just the name that computer scientists have given to normal text data.





# Another Problem

- Assume that I made it so that the mummy did the same thing to the penguin and the skeleton. Now assume I add three more characters and want the same thing to happen to them.
- What challenge would we face in trying to make this happen? What do we need to be able to do to get around this?





- Parameters are basically variables that we pass into methods. These give us the power to not have to duplicate too much code.
- You have used parameters in many of the methods that are built into Alice. They simply provide information to the method to help it do what we want.
- Let's use parameters to help simplify the code in our mummy world so that we don't have unnecessary duplication.







- What do you think about the pace of the class so far? Do you feel that you can get comfortable with the skills/concepts we introduce each class?
- Interclass Problem - Take the object you animated previously and give it a new method called `walkToward` that takes an object as an argument. This method should have your character turn to face the thing it needs to walk toward and then take a step toward it.

