



# Variables and Parameters

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# Opening Discussion

- Let's look at solutions to the interclass problem.
- In general people feel that the speed and difficulty are at a good level. For most we could consider going faster, but many fear that could cause them to get lost.





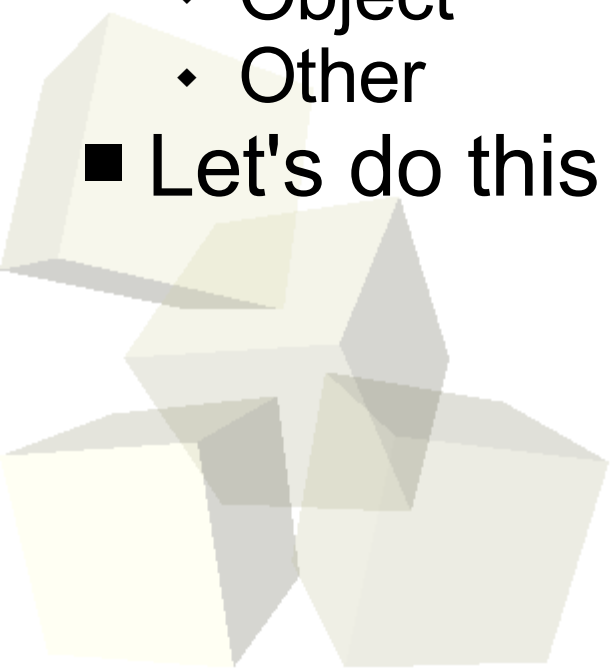
- You should be familiar with the concept of a variable from algebra. Programming variables are similar, but not quite the same.
- A variable is a name that we create that is attached to a chunk of memory in the computer that stores a value.
- Unlike a math variable, the value of a programming variable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





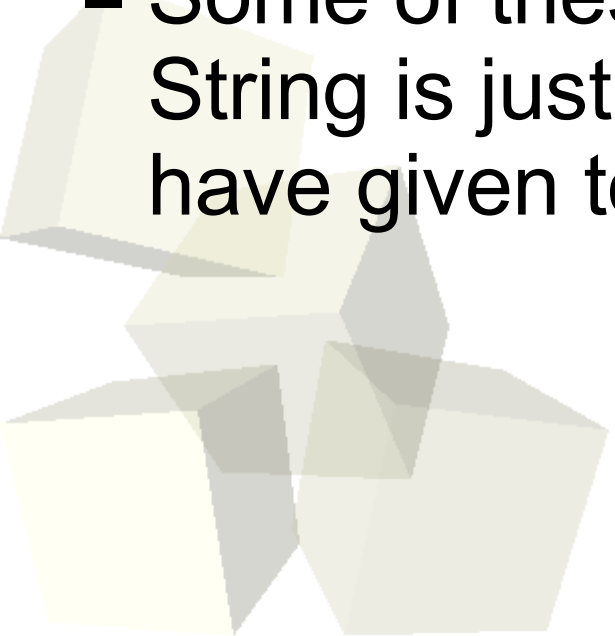
# Method Variables

- 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.





- Parameters are basically variables that we pass into methods. These give us the power we want 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.





- In other classes I often like to ask quiz and test questions where you program. This is easy and straightforward in “normal” languages. Do you have any suggestions for doing this with Alice? Could you write Alice code on paper at this point?
- 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.