



Properties and Functions

9/12/2007



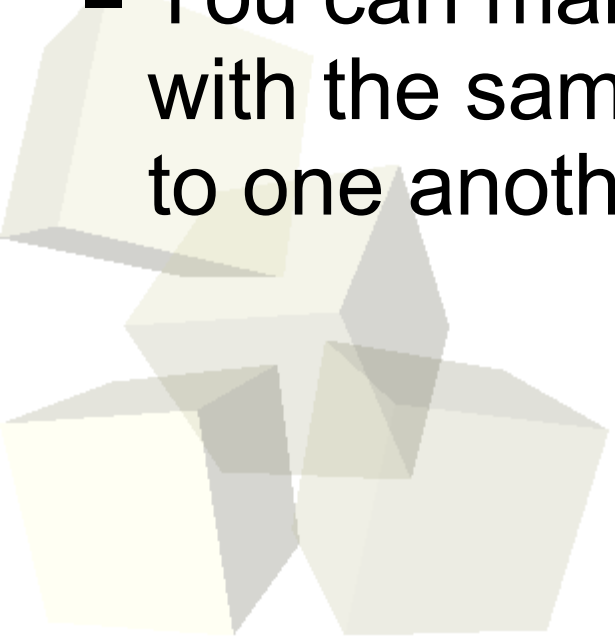


Opening Discussion

- Let's look at some solutions to the interclass problem.
- What are variables? What do they enable us to do?
- What are parameters? What do they enable us to do?
- I have moved back the due date on the project ideas so you will have a better idea of what you are capable of in Alice.
- The online grades are available now. Use your regular username and your starting password is your 7-digit TU ID number.



- When we create a variable or a parameter in Alice it exists just in the method we create it in.
- The segment of code a variable/parameter can be used over is called its scope. This type of scope is called local scope. In Alice this is fairly intuitive, but the same concept carries to other programming languages.
- You can make variables in two different methods with the same name and they have no relationship to one another.

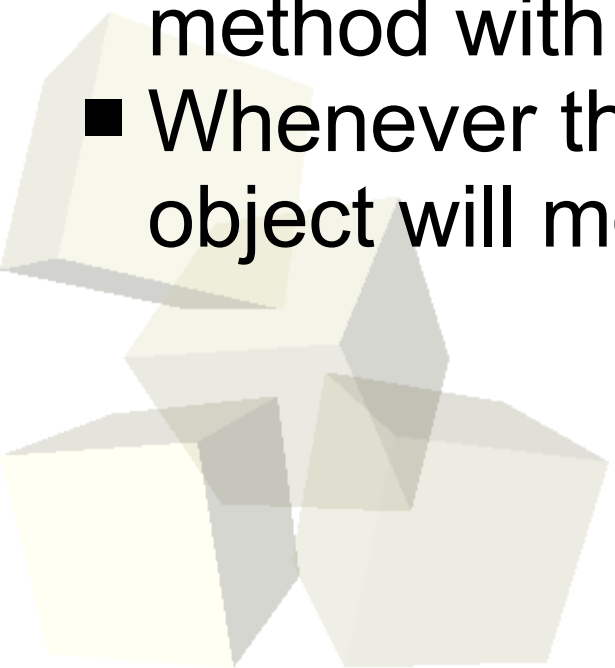




- Sometimes you want variables with a larger scope so they can be accessed across multiple methods.
- Alice allows you to add properties to objects to get this type of behavior.
- A property is basically a variable that is stored in one of the objects. Like method variables you can pick the type and give it an initial value.
- Each different object, even copies of the same class of object, can have a different value for their properties.
- Let's set up a scene where two characters “race” and the user picks who wins by setting a property in each telling it how far to move.

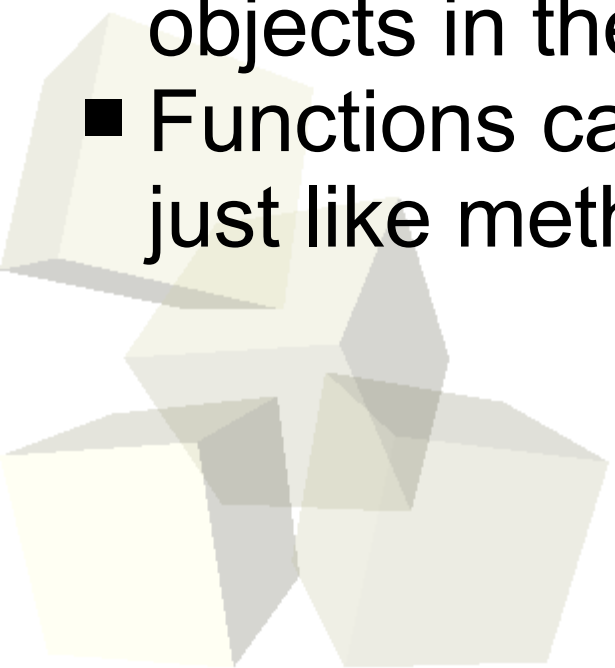


- There are many situations where you want to movement of one object to impact another.
- For example, if one object is sitting or standing on another object, moving the supporting object should move the supported on as well.
- We could do this with doTogether moving things at the same time, but Alice provides a simpler method with the vehicle property.
- Whenever the vehicle of an object moves, that object will move along with it.





- We have already been creating methods for objects to give them different behaviors. We can also add functions to objects when there are things we need to calculate for a particular object.
- The difference between a method and a function is that the function returns a value to us. Methods don't. They generally just do something to change objects in the world.
- Functions can be given parameters and variables just like methods.





- Do you have any questions about variables, parameters, properties, or functions? Next class we will press on into flow control. That is where the logic part of this class begins to come into play.
- Interclass Problem – Do one of the following: problem 3.8, 3.9, or 3.10.

