



Object Methods

1/25/2008





Opening Discussion

- Solutions to interclass problem.
- What did we talk about last class?
- Why does having methods fill only one screen matter? Out of sight, out of mind.
- Can you reuse methods?





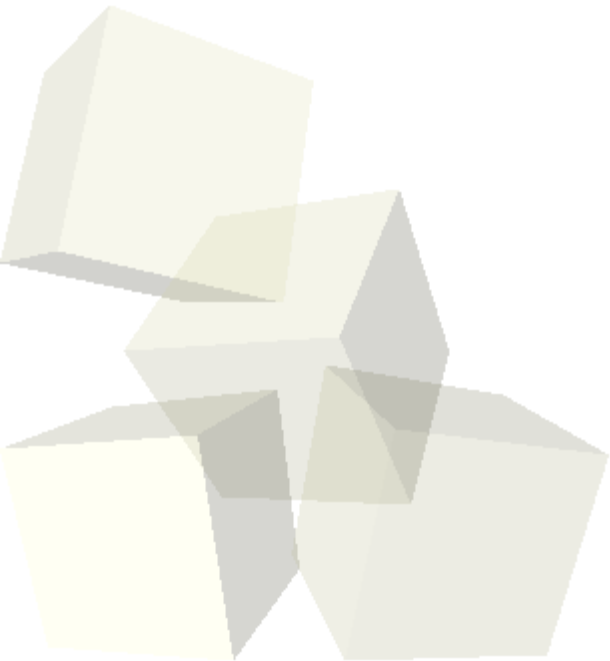
Object Methods

- Last time we attached methods to the world. These are good for breaking the problem into pieces and generally we use them for any method that is going to alter multiple objects.
- We can also add methods into individual objects. This makes sense for chunks of code that alter that one object.
- You can often think of these as behaviors of the objects that you are adding them to.
- Anything that you might want an object do multiple times or that makes logical sense to lump together you can put in an object method.



Writing Object Methods

- Let's open up Alice and create some object methods.
- We talked last time about a nice logical partitioning of the code we had in our world methods.
- We could also try adding some behaviors that animate our objects.





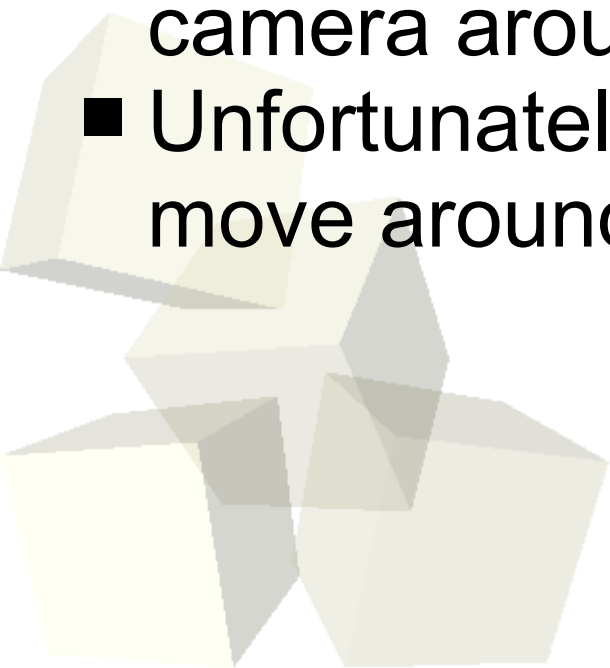
Reusing Objects

- If you have added a bunch of methods into an object to give it a bunch of behaviors that you like, you don't want to have to recreate it when you create a new world.
- For this reason Alice allows you to save off objects then load them back into a world.
- Let's try doing this for one of the objects we just added methods into.





- So far everything that we have done in this class has had a static camera position. We put the camera in one place and simply watch what is happening.
- You might have noticed that the World contains a camera object. We can call methods on that object just like any other. This allows us to move a camera around for different shots or scenes.
- Unfortunately, giving the camera commands to move around can be quite difficult.





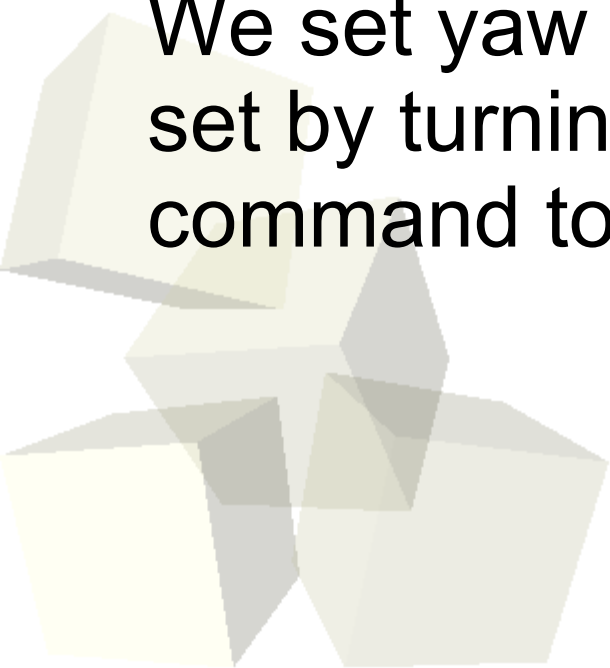
Camera Positioning with Dummies

- Alice provides an easier way to move the camera to preset locations.
- In the object placement mode, if we expose more options we can drop dummy objects at the current camera location. We can get to the position that we want using the “driving” options to move through the scene.
- While the code is running we can call `camera.setPointOfView()` to have the camera move to a particular position to “watch” the scene. In particular, we can set it to be one of the dummies we dropped.



Object Positions in 3-D

- Fully specifying the state of an object in 3-D requires six values.
- We need three values for position: x , y , z . These are fairly straightforward and we can make objects move up, down, left, right, forward, or backward.
- There are also three angles that specify orientation. These are called yaw, pitch, and roll. We set yaw by doing turn with left or right. Pitch is set by turning up or down. Roll is set with the roll command to the left or right.





- Why do you think we tend to want object methods to only modify the object they are part of?
- The first quiz will be at the beginning of class on Monday.
- Interclass Problem – Pick one of the humanoid objects in Alice and make a method in it called walkForward. Make that method animate a walking motion that includes movement of legs and arms.

