Class Today

• Continue practice writing procedures and functions
• Properties and variables, object markers, logic operators
• Exam 1 next Thursday
  – Old tests are on Resources tab
  – Old tests are in Alice 2, but many questions relevant – Think about how you would do the same question in Alice 3
Setup for Lecture today

• Put in four objects:
  – Biped: Panda, SnowWoman, SnowWoman2, MarchHare
Properties

- A 3D object has its own:
  - *Procedures* – things it can do, like move, turn
  - *Functions* – values it can calculate like distance to, getHeight
  - *Properties* – data on its current state
    - Paint – what color it is
    - Opacity – all on are faded?
    - Width, height and depth
    - Vehicle
Change Properties

• What happens when this code executes?
Variable – store a value

• Variables can be used in your code when you need to store a value and then use it later.
• You must specify the type of the variable
• The variable tile is at the bottom of the editor pane
Using a variable

- Suppose we want the Panda to jump up 1 in height, then 2, then 3, then 4.
- We create a variable of type **number** that we can add to so it can change from 1 to 2 to 3 to 4.

Create variable and initialize

Use its value

Update it
Adding a new property to Panda

• Suppose we want to add a new property to the Panda, so it knows the maximum height it has jumped.
• Name it `howHighJumped`
• It’s type would be a decimal number.
When you add a property you get a function and a procedure for free to go with it

- The procedure allows you to change the properties value
- The function allows you to get its current value
Everytime the Panda jumps you need to check to see if it has jumped higher than before

- code
After Panda has done all its jumping, it can say the highest it jumped.

- Build a string to say “I jumped this high” and get the value of how high.
Logic Operators

• A and B – true if both are true
• A or B – true if one or both are true
• Not A – True if A was false
Example

• Uses **And** – both conditions must be true for the whole thing to be true
Add in object markers

- An object marker is a place holder for where you want an object to move to.
- To create them, in Setup Scene, must select object first
- Then add two objectMarkers
Code to use object markers

• What happens?
This lecture covered

• Properties of an object and how to change them
• A number variable
• Logic – and, or, not
• Object markers