Announcements

• Read Chapter 9, Sec 2 for next time
• Assignment 6 due Thursday, Oct 29
• Today
  – Chapter 9, Section 1 – Lists

• Speaker – Stephen Cooper
  Monday, Oct 26, 4:30pm, LSRC D106
  “Problem Solving with Alice: Past, Present and Future”
  Extra credit to attend!

Collections

• In some animations, several objects must perform the same actions
  – Example: marching band marching
• It is convenient to collect all objects into a group (collection)
  – Major benefit – write code for all the objects in the group (rather than separate code for each object)

List

• A list - one way to organize objects into a collection
  – You may use lists to organize
    • Shopping list
    • Todo list
• In programming, a list is a collection of objects or information. We call an organizing structure a data structure.
Creating Lists

- In Alice, a list can be a list of numbers, or a list of objects, or a list of colors, etc.
- Let’s create a list of skeletons

Programming with a List

- Can “iterate through a list”
  - Do something to each item in the list
    - In order (use “For all in order”)
    - All together (use “For all together”)

Example/Demo: Iteration in Order

For each skeleton in order
skeleton says “Boo”
For each skeleton in order
skeleton turns its head around
Applying a Part of an object

- Drag in skeleton turn
- Select part
- Drag over part
- Drag in item
- Type in part

Example/Demo: Iteration Together

- For all skeleton together
  skeleton says “Boo”
- For all skeleton in together
  skeleton turns its head and neck around

List Questions

- What are differences between For all in order and For all together?
- Why is the list a world variable?
- When would you want to use each of them?
- What can you put in a list?
- When can you refer to a part of an object in a list?
- What type of method can you not put in a For all in order or For all together?
Classwork today

• Create a list of players
• Make them do several things.