Prof. Susan Rodger
Announcements

• Read Chapter 10.1 for next time
• Sign up for Exam time during finals week
  – Monday 2-5pm, LSRC D106
  – Wednesday 2-5pm, LSRC D106
  – Saturday 2-5pm, LSRC D106 (scheduled time)
• Reading Quizzes - 125 points perfect score,
  – There are 149pts +, + 5 survey pts
What we will do today

• Lecture on Chap 9
  – Lists and List Search

• Classwork
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 chickens
Create List (cont)

- Type in name
- Select type
- Select “make a list”
- Add chickens to list (click “new item” 4 times)
- Result is:
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 chicken in order
    chicken says “hello”
For each chicken in order
    chicken turns its head and neck around
Applying a Part of an object

- Drag in chicken turn
- Select part
- Drag over part
- Drag in item
- Type in part
Example/Demo: Iteration Together

For all chicken together
  chicken says “hello”
For all chicken in together
  chicken turns its head and neck around
List Questions

• What are differences between *For all in order* and *For all together*?
• 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?
List Search Example

• WacAMole game
• Moles pop up from holes, user tries to whack (click) them
• Game over when 10 moles whacked.
Score – uses “For all in order”
Classwork today

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