**Repetition**

- Sometimes don’t know exactly how many times a set of instructions are repeated.
- Stopping is based on a condition
- Example:
  - Game of Chess, how many moves until win
  - Stop: when markers are in check mate position

- Indefinite Repetition
  - Where number of repetitions not known in advance
  - Use **while** statement

**While statement**

- While some condition is true
  - execute instructions

**Looping – exact number of times**

- Count loop
- How many steps to get to the panda?
  - 3, 6, 8?
General “Rule of Thumb”

- As a general rule, a While loop should be written so the loop will eventually end
  - Requires statements inside the loop change the conditions of the world such that condition for While eventually becomes false
- If While loop never ends
  - Infinite while loop

Compare – What is difference?

What happens when run?

- First loop, falcon moves down until partially in the ground
- Second loop, nothing happens since the condition is never true. The pig is not above ground.

What happens, when does the loop stop?

- They move towards each other repeatedly until their distance is less than 1.0
What happens, when does the loop stop? (numbers different)

- They move way too much compared to how close they are supposed to be. This could be an infinite loop!

What happens when this runs?

- This is an infinite loop! The bunny is never red when the condition is tested. So the condition is always true!

What code could I use to stop this loop?

- Continue while height smaller than some number. Stop when height is bigger.

Announcements

- Qz12 and videos for next time
Class Today

- Catching dinner