Announcements

- QZ and videos for next time
Alice 2 - Octopus Ride

```
- Loop 10 times
  - times
  - show complication
  - ferrer_wheel.doublewheel_wheel2
    - roll left
    - 0.1 revolutions
    - more...
  - Wait 2 seconds

- Loop 10 times
  - times
  - show complication
  - ferrer_wheel.doublewheel_wheel
    - roll left
    - 0.5 revolutions
    - more...

- Loop 10 times
  - times
  - show complication
  - ferrer_wheel.doublewheel_wheel1
    - roll left
    - 0.1 revolutions
    - more...
  - Wait 2 seconds

- Loop 10 times
  - times
  - show complication
  - ferrer_wheel.doublewheel_wheel2
    - roll left
    - 0.1 revolutions
    - style = abruptly
    - duration = 2 seconds
    - more...

- Do together
  - ferrer_wheel.doublewheel_wheel1
    - roll right
    - 1 revolution
    - style = abruptly
    - duration = 2 seconds
    - more...

- Loop 2 times
  - times
  - show complication
  - ferrer_wheel.doublewheel_wheel2
    - roll left
    - 1 revolution
    - style = abruptly
    - more...
```

Back to Alice 3….

Looping – exact number of times

- Count loop

- How many steps to get to the panda? 3, 6, 8?
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

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
Q1 Compare – What is difference?

- While loop stops when bunny is close to panda
- Count loop bunny just walks three times

Q2. 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.

Q3 What happens, when does the loop stop?

- They move towards each other repeatedly until their distance is less than 1.0
Q3 What happens, when does the loop stop?

- They move towards each other repeatedly until their distance is less than or equal to 1.0

Q4 What happens, when does the loop stop? (numbers different)

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

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Q5 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!
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Q6 What code could I use to stop this loop?

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