# Nesting

Fall 2019

# Nesting

- The idea of placing one structure inside of another
  - Conditions inside of conditions
  - Loops inside of loops
  - Conditions inside of loops
  - Etc.
- Can triple-nest, quadruple-nest, quintuple-nest, etc…
  - As long as the syntax is correct, there’s no real limits (it just may take a long time to run)

# Nesting Syntax

- Since structures like conditions and loops are delimited by indentation, you simply need to add more indentation to nest one inside of another
- Anything outside of each structure would be unindented accordingly

```
animal = "dog"
name = "Maggie"

# check what animal type it is
if(animal == "dog"):
    # then check the name
    if(name == "Maggie"):
            print("That's Kortni's dog.")
```

# Nesting Uses

- Allows for more specialized loops/conditions
- Typically it's meant to limit functionality of the inner structures
  - They should only execute under specialized conditions
- Can make code more efficient
  - Especially when relating to conditions

```
if(animal == "dog"):
    if(name == "Maggie"):
        print("That's Kortni's dog")

    elif(name == "Ghost"):
        print("That's Ryan's dog")

elif(animal == "cat"):
    if(name == "Oreo"):
        print("That's Robin's cat")

    elif(name == "KitKat"):
        print("That's Devin's cat")
```

```
if(animal == "dog" and name == "Maggie"):
    print("That's Kortni's dog")

elif(animal == "dog" and name == "Ghost"):
    print("That's Ryan's dog")

elif(animal == "cat" and name == "Oreo"):
    print("That's Robin's cat")

elif(animal == "cat" and name == "KitKat"):
    print("That's Devin's cat")
```

# Syntax Notes:

- Make sure your indentation lines up correctly
- You can mix and match a lot, so be careful
  - Still need to adhere to syntax rules

```
## BAD EXAMPLE
if(name == "Kortni"):
    print("That's your teacher.")

    else:
        print("That's not your teacher.")


## OKAY EXAMPLE
answer = input("Do you like dogs? ")

while(answer != "yes"):
    print("Oh.")

    for i in range(2):
        print("Hello")

    answer = input("Do you like dogs? ")
```

# Nesting Tip:

- It can sometimes be hard to follow what is nested inside of what due to how Python is delimited (indentation)
- Commenting the end of a structure at the original indentation level can sometimes help traverse nesting

```
while(answer != "yes"):
    print("Oh.")

    for i in range(2):
        print("Hello")
    # end for

    answer = input("Do you like dogs? ")
# end while
```