

# CS 152: Conditionals

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CS 152: Python for STEM

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# Weekly Announcements!

## TODO Reminders:

- Reading 2 (zyBooks) – you already should have done that 😊
- Lab 01 – Warm Up
- Reading 3 (zyBooks) – you already should have done that 😊
- Lab 02 – Application
- Reading 4 (zyBooks) – you already should have done that for today's class 😊



# Recall Activity

- Identify how many functions are in the code below
- List their names and parameters
- Identify where the functions are being called

```
def name_last_name(name, last_name):  
    return name + " " + last_name  
  
def greetings(msg, name, last_name):  
    print(msg + " " + name_last_name(name, last_name) + "!")  
  
msg = input("Enter the greetings message: ")  
name = input("Enter your first name: ")  
last_name = input("Enter your last name: ")  
greetings(msg, name, last_name)
```

# Basic Conditionals

- Logic that evaluates as
  - Yes or No
  - True or False (called a Boolean)
- Essential in all programming languages
  - You mentally do this all the time
  - 100 pennies greater than \$1?
- Common logic operators
  - == Equals
  - < Less than (is left less than right)
  - > Greater than
  - <= Less than OR equal
  - >= Greater than OR equal
  - != not equal ( ! is your NOT character)

# Structure of if statements

- if without else

```
def get_happy(puppies):  
    happy = False  
    if puppies >= 100:  
        happy = True  
    return happy
```

- if with else

```
def get_happy2(puppies):  
    if puppies >= 100:  
        happy = True  
    else:  
        happy = False  
    return happy
```

# conditions are operations, so you can return the result

```
def get_happy3(puppies):  
    return puppies >= 100
```

# Group Practice

- Complete the following code

```
def age_check(age):  
    #TODO - add a line of code here, you do not print here!
```

```
print(age_check(21)) # prints True  
print(age_check(20)) # prints False  
print(age_check(22)) # prints True
```

# Elif

- Used for chaining if statements
- Let's analyze the following code

```
def verify_number(number):  
    if number > 0:  
        print(f'Positive number: {number:d}')    if number < 0:  
        print(f'Negative number: {number:d}')    if number == 0:  
        print("Number 0")
```

```
verify_number(10)  
verify_number(-1)  
verify_number(0)
```

How many tests are done each time we call `verify_number`?

# Elif

```
def verify_number(number):  
    if number > 0:  
        print(f'Positive number: {number:d}')  
    elif number < 0:  
        print(f'Negative number: {number:d}')  
    else: print("Number 0")
```

```
verify_number(10)  
verify_number(-1)  
verify_number(0)
```

How many tests are done each time we call verify\_number now?



# Elif – Group Practice 1

```
def broken_rogue(dice_roll):  
    if dice_roll >= 10:  
        if dice_roll > 15:  
            print("Trap Disarmed!")  
        else:  
            print("Get the 10-foot pole...")  
    elif dice_roll >= 5:  
        print("As far as I am aware, no traps.")  
    else:  
        print("Found the trap!")
```

```
broken_rogue(10) # prints Get the 10-foot pole...  
broken_rogue(16) # Trap Disarmed!  
broken_rogue(5)  # As far as I am aware, no traps.  
broken_rogue(1)  # Found the trap!
```

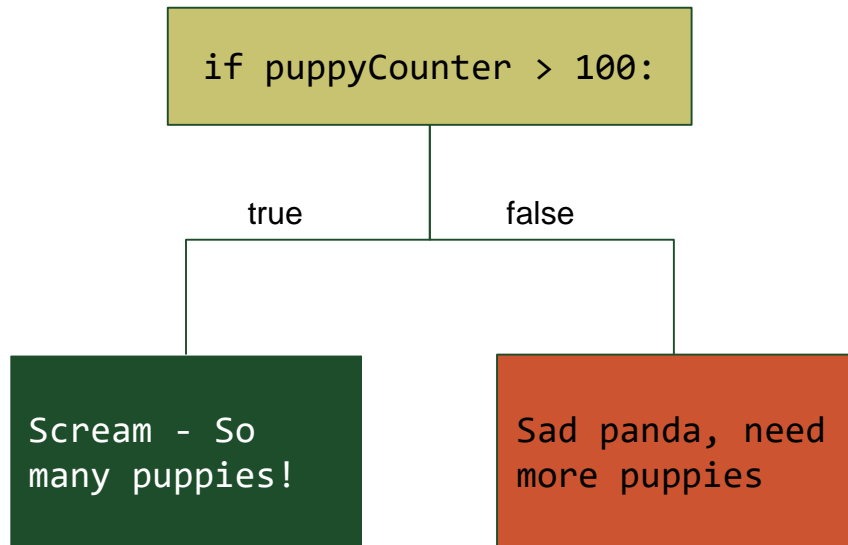
What is printed in each call?

# Secret Ninja Logic Trick



***SUPER SECRET NINJA***

- Work it out!
- Draw it out - flow chart!
- Really - just that
  - Often we over think it



Group Project

Can you code based on the tree?

# Worksheet Week 2 - Attendance

- Work in pairs in the Worksheet Week 2
- This will count as your attendance for this lecture