

CompSci 101

Fall 2021

Lecture 5

Reminders

- **THE CLASS IS ALREADY REMOTE!**
 - Lectures: Live→Videos (Calendar)
 - Labs: Async Request Form
- **NO READING QUIZZES!**
- **ALL CLASS-RELATED QUESTIONS SHOULD BE SUBMITTED IN ED!**
- **Assignments**
 - Assign 0 due today

Key instructions

- **Input**
- **Output**
- **Assignments*** ✓
- **Math/Logic** ←
- **Conditionals**←
- **Repetition**

****not listed in book***

PFTD

- **Boolean logic**
- **Conditionals**
- **PAY ATTENTION TO ERROR MESSAGES**

“The mere imparting of information is not education.”

- Dr. Carter G. Woodson

People to Know: Dr. Amy J. Ko

- Carnegie Mellon (PhD, CS)
- Oregon State (BS, CS and Psych)
- Professor
- Informatics Program Chair, University of Washington (Seattle)
- CS education, HCI,



Boolean Logic

<i>AND</i>			<i>OR</i>		
<i>x</i>	<i>y</i>	<i>xy</i>	<i>x</i>	<i>y</i>	<i>x+y</i>
<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>
<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>
<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>

Boolean values in Python

- True or False
 - Case matters!!
- Relational operators
 - $x == y$
 - $x != y$
 - $x > y$
 - $x < y$
 - $x >= y$
 - $x <= y$

```
if __name__ == '__main__':  
    num1 = 3  
    num2 = 4  
  
    print(num1 == num2)  
    print(num1 != num2)  
    print(num1 > num2)  
    print(num1 < num2)  
    print(num1 >= num2)  
    print(num1 <= num2)
```

Comparing Logical Expressions

- and, or, not
- *Expression1* and *Expression2*
- *Expression1* or *Expression2*
- not *Expression2*
- Remember order of precedence
 - PEMDAS
 - Relational (==, !=, >, <, >=, <=)
 - Logical (and, or, not)

```
if __name__ == '__main__':  
    num1 = 6  
    num2 = 4  
  
    print(num1 > 5 and num1 == 10)  
  
    print(num2 > 5 or (num2 % 2 == 0))  
  
    print(not(num2 <= 5))
```


Activity 1: Boolean Expressions

<http://bit.ly/101f21-09-07-1>

Conditionals



Conditionals: You can't have it both ways!

- If condition is true → action1
 - Or else → action2
- if *condition 1*:
- block1*
- else:
- block2*

```
if __name__ == '__main__':  
    num1 = 7  
  
    if num1 == 5:  
        print("The number is 5!")  
    else:  
        print("The number is NOT 5!")
```

Selection/Conditionals: if...elif...else

```
if BOOLEAN_CONDITION:  
    CODE_BLOCK_A
```

```
if BOOLEAN_CONDITION:  
    CODE_BLOCK_A  
else:  
    CODE_BLOCK_B
```

```
if BOOLEAN_CONDITION:  
    CODE_BLOCK_A  
elif BOOLEAN_CONDITION:  
    CODE_BLOCK_B  
else:  
    CODE_BLOCK_C
```

```
if __name__ == '__main__':  
    num1 = 5  
  
    if num1 == 5:  
        print("The number is 5!")  
    else:  
        if num1 < 5:  
            print("The number is less than 5!")  
        else:  
            print("The number is greater than 5!")
```

```
if __name__ == '__main__':  
    num1 = 2  
  
    if num1 == 5:  
        print("The number is 5!")  
    elif num1 < 5:  
        print("The number is less than 5!")  
    else:  
        print("The number is greater than 5!")
```

What if num1=2?

```
if __name__ == '__main__':  
    num1=5  
  
    if num1==5:  
        print("The number is 5!")  
    print("Made it here!")
```

Activity 2: Sibling Rivalry

<http://bit.ly/101f21-09-07-2>

Reminders

- **Work smarter, not harder**
- **Design first**
- **Try to identify where you are stuck**
 - Identify resources to help solve problem
- **Leverage your design and PythonTutor to understand program flow of control**
 - <http://pythontutor.com>