Python Programming

Logical Operators with values

Mostafa S. Ibrahim

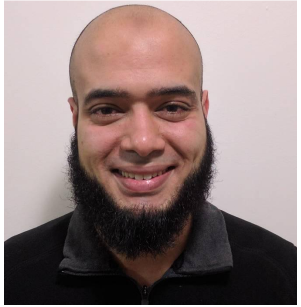
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher

PhD from Simon Fraser University - Canada

Bachelor / Msc from Cairo University - Egypt

Ex-(Software Engineer / ICPC World Finalist)

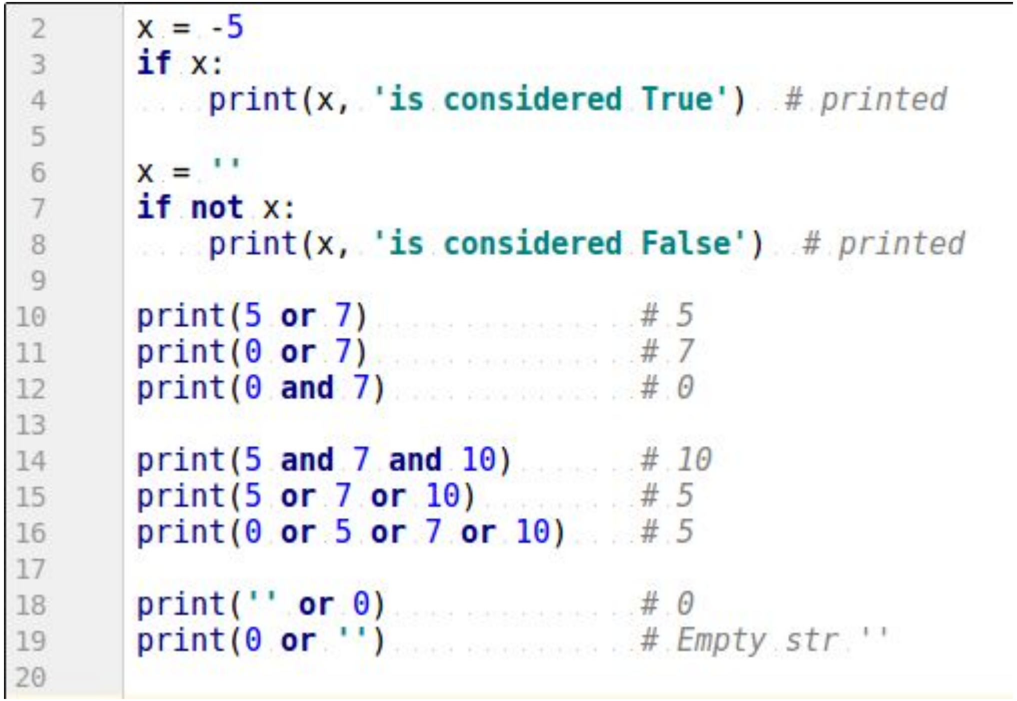


Values and Boolean expressions

- We learned the result of a boolean expression:
    - A = 20
    - print(a > 10) ⇒ True
    - print(True and True and False) ⇒ False
- What if the expression has values not booleans?
    - In terms of is True/False semantically, same
    - But it is useful to understand it
- Rule: The false value comes either from 0 or None or **empty data structure**
    - Empty string (‘’) and later empty list [] or empty tuple () or empty map {}
    - Observe: negative values are not False

Values

- Remember the shortcut
- Or:
    - **True expression**: Return first one that evaluates True
    - **False expression**: Return last expression that evaluates False
- And: Opposite logic
    - True: return last True
    - False: return first False
- In complex expressions, better avoiding depending on returned value
    - Just T or F



```
x = -5
if x:
    print(x, 'is considered True')  # printed

x = ''
if not x:
    print(x, 'is considered False')  # printed

print(5 or 7)               # 5
print(0 or 7)               # 7
print(0 and 7)              # 0

print(5 and 7 and 10)       # 10
print(5 or 7 or 10)         # 5
print(0 or 5 or 7 or 10)    # 5

print('' or 0)              # 0
print(0 or '')              # Empty str ''
```

bool function

- What if I want to get True or False from expression of values
  - print(bool(3 **or** 5)) ⇒ True
  - print(bool(3 **and** '')) ⇒ False

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”