**Logical Operators**

Logical operators are used to construct more complex expressions. You can make complex comparisons by joining comparison statements together using the logical operators: **and**, **or**, **not**. Complex comparisons return a Boolean (**True** or **False**) result.

* **and**
  + Both sides of the statement being evaluated must be True for the whole statement to be True.
  + Example: (5 > 1 **and** 5 **<** 10) = **True**
* **or** 
  + If either side of the comparison is True, then the whole statement is True.
  + Example: (color = "blue" **or** color = "green") = **True**
* **not**
  + Inverts the Boolean result of the statement immediately following it. So, if a statement evaluates to True, and we put the not operator in front of it, it would become False.
  + Example: (**not** "A" **==** "A") = **False**

**Key takeaways**

When Python logical operators are used with comparison operators, the interpreter will return Boolean results (**True** or **False**):

| **Expression** | **Description** |
| --- | --- |
| a **==** a **and** a **!=** b | True if both sides are True, otherwise False. |
| a **>** b **or** a **<=** c | True if either side is True. False if both sides are False. |
| **not** a **==** b | True if the statement is False, False if the statement is True. |

# Resources for more information

For more information about the concepts covered in these practice exercises, please visit:

* [Understanding Boolean Logic in Python 3](https://www.digitalocean.com/community/tutorials/understanding-boolean-logic-in-python-3) - A handy guide for reviewing both logical and conditional operators.