

Exercise 16: Boolean Practice

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The logic combinations you learned in the last exercise are called *boolean expressions*. These boolean expressions are used everywhere when you write a computer program. This particular exercise talks about these boolean expressions in the language of Python. Remember, boolean expressions after evaluated have either TRUE or FALSE as their answers specially when we talk about the programming languages.

Here's an exercise for you to understand boolean expressions in a better way using Python.

Exercise: Boolean Practice (help for evaluating is in the end of this exercise)

1. Create a file called **ex_16.py** and write the following expressions one by one in it without the numbers in them.

1. True and True
2. False and True
3. 1 == 1 and 2 == 1
4. "test" == "test"
5. 1 == 1 or 2 != 1
6. True and 1 == 1
7. False and 0 != 0
8. True or 1 == 1
9. "test" == "testing"
10. 1 != 0 and 2 == 1
11. "test" != "testing"
12. "test" == 1
13. not (True and False)
14. not (1 == 1 and 0 != 1)
15. not (10 == 1 or 1000 == 1000)
16. not (1 != 10 or 3 == 4)
17. not ("testing" == "testing" and "Zed" == "Cool Guy")
18. 1 == 1 and not ("testing" == 1 or 1 == 0)
19. "chunky" == "bacon" and not (3 == 4 or 3 == 3)
20. 3 == 3 and not ("testing" == "testing" or "Python" == "Fun")

2. Before you run any python file, I'd like you to answer these 20 boolean expressions on a sheet of paper.

3. Add a print statement in front of all of these 20 statements (after removing their serial numbers) and run the file. Cross reference your program generated results with your results on paper. They should be identical. If they are not, re-understand where you went wrong by evaluating the respective boolean expression again on the sheet of paper.

4. Write a comment on each line giving explanation about how you got the final answer?

Submit the file on Google Classroom after adding the explanation and thoroughly checking it. Also submit a photo of your paper containing evaluation of the boolean expressions.

HELP:

Whenever you see these boolean logic statements, you can solve them easily by this simple process:

1. Find an equality test (`==` or `!=`) and replace it with its *truth*.
2. Find each *and/or* inside *parentheses* and solve those first.
3. Find each *not* and invert it.
4. Find any remaining *and/or* and solve it.
5. When you are done, you should have *True* or *False*.

Next: If-Else statements