

Assignment 2

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1. What are the two values of the Boolean data type? How do you write them?

Two values of a Boolean data type are 1 and 0 which are written as 'True' and 'False' respectively.

2. What are the three different types of Boolean operators?

'AND', 'OR' and 'IS NOT' are three different types of Boolean operators.

AND :- The code executes only when both left and right side of conditions of AND operator holds true.

For example:- list1 = [1,2,3,4,5,6,7,8,9,10,11,12]

```
for j in list1:
    if j%2==0 and j%3==0:
        print(j)
```

Output = 6 12

OR :- The code executes when any one of left and right side of conditions of OR operator holds true.

```
for j in list1:
    if j%2==0 or j%3==0:
        print(j)
```

Output = 2 3 6 8 9 10 12

IS NOT:- It says that the assignment should not hold. For example, x is not 4 means $x \neq 4$

3. Make a list of each Boolean operator's truth tables (i.e. every possible combination of Boolean values for the operator and what it evaluates).

a	b	a && b	!(a && b)	!a	!b	!a !b
T	T	T	F	F	F	F
T	F	F	T	F	T	T
F	T	F	T	T	F	T
F	F	F	T	T	T	T

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) **False**

not (5 > 4) **False**

(5 > 4) or (3 == 5) **True**

not ((5 > 4) or (3 == 5)) **False**

(True and True) and (True == False) **False**

(not False) or (not True) **True**

5. What are the six comparison operators?

True Example	False Example	Statement	Comparison Operator	Description
int x = 2	int x = 3	x == 2	==	is equal to
int x = 3	int x = 2	x != 2	!=	is not equal to
int x = 2	int x = 13	x < 13	<	is less than
int x = 2	int x = 3	x <= 2	<=	is less than or equal to
int x = 13	int x = 2	x > 2	>	is greater than
int x = 13	int x = 2	x >= 3	>=	is greater than or equal to

Reference:-

https://science.jrank.org/programming/Comparison_Operators.html#:~:text=There%20are%20six%20main%20comparison,less%20than%20or%20equal%20to.

6. How do you tell the difference between the equal to and assignment operators? Describe a condition and when you would use one.

The “=” is an assignment operator is used to assign the value on the right to the variable on the left. If we want to assign some variable a value say age then it will be written like age = 25.

The ‘==’ operator checks whether the two given operands are equal or not. If so, it returns true. Otherwise it returns false. I will use equal operator when I want to compare the equivalency of two variables.

Age1 = 25

Age2 = 30

Age1 == Age2 # answer is False.

7. Identify the three blocks in this code:

```
spam = 0

if spam == 10:

    print('eggs')

if spam > 5:

    print('bacon')

else:

    print('ham')

    print('spam')

    print('spam')
```

block 1:- spam = 0

if spam == 10:

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

block 2:- print('spam')

block 3:- print('spam')

8. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

```
Spam = int(input())
```

```
If spam == 1:
    print('Hello')
elif spam == 2:
    print('Howdy')
else:
    print('Greetings!')
```

9. If your programme is stuck in an endless loop, what keys you'll press?

Ctrl + Fn + F2

10. How can you tell the difference between break and continue?

Break :- It brings you out from the loop completely.

Continue:- If continue comes in ith iteration then it skips that particular iteration and starts (i+1)th iteration.

11. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

No difference. All mean the same.

12. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

```
# For Loop
list3 = []
for i in (range(1,11,1)):
    list3.append(i)
print(list3)

# while loop
list4 = []
count = 1
while count < 11:
    list4.append(count)
    count += 1
print(list4)
```

13. If you had a function named bacon() inside a module named spam, how would you call it after importing spam?

Import spam
foo = spam.bacon()