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

**0 and 1 are the two Boolean data type values. We write them in form of True and False.**

**0 = False**

**1 = True**

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

**AND, OR, NOT**

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).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AND** | | |  | **OR** | | |  | **NOT** | |
| 0 | 0 | **0 (FALSE)** |  | 0 | 0 | **0 (FALSE)** |  | 0 | **1 (TRUE)** |
| 0 | 1 | **0 (FALSE)** |  | 0 | 1 | **1 (TRUE)** |  | 1 | **0 (FALSE)** |
| 1 | 0 | **0 (FALSE)** |  | 1 | 0 | **1 (TRUE)** |  |  |  |
| 1 | 1 | **1 (TRUE)** |  | 1 | 1 | **1 (TRUE)** |  |  |  |

4. What are the values of the following expressions?

(5 > 4) and (3 == 5):***1 and 0* = 0**

not (5 > 4): ***not (True)* = F = 0**

(5 > 4) or (3 == 5): ***1 or 0* = 1**

not ((5 > 4) or (3 == 5)): ***not ((T) or (F)) = not(T)* = F** = **0**

(True and True) and (True == False): ***T and F = F* = 0**

(not False) or (not True): ***T or F = T*** *=* **1**

5. What are the six comparison operators?

**Less Than (<), Greater Than (>), Less Than or Equal to (<=), Greater Than or Equal to (>=), Not Equal to (!=), Equal to (==)**

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

**Equal to operator symbol: == (Double equal to)**

**Assignment operator symbol: = (Single equal to)**

**Example;**

**a= 11 “”” here we are assigning an integer value to ‘a’ “””**

**if a==11: “”” Here we are doing comparison, if value of ‘a’ is equal to 11 ?”””**

7. Identify the three blocks in this code:

**A block is a piece of program text that is executed as a unit. Blocks are: a module, a function body, and a class definition.**

spam = 0

**if spam == 10:**

**print('eggs')**

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

print('spam')

1st Block, 2nd Block, 3rd Block

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(**"Enter a number single digit number"**))  
**if** spam==1:  
 print(**"Hello"**)  
**elif** spam==2:  
 print(**"Howdy"**)  
**else**:  
 print(**"Greetings!"**)

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

In Pycharm we will use **STOP BUTTON or (CTRL + F2)**.



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

**Break: When the condition in the loop is fulfilled, It breaks the loop from the further execution and moves the compiler out of the loop (or to the next block or function).**

**Continue: It moves back the control to the condition until it(condition) is fulfilled and does not execute the code below the CONTINUE until the condition is satisfied.**

Example 1:

i=0  
**while** (1):  
 **if** i<20:  
 i= i+1  
 **continue** print(i+1, end=**" "**)  
 **if** i==40:  
 **break** i= i+1

Example 2:

s= **"Himanshu Singh"  
for** i **in** s:  
 print(i, end=**" "**)  
 **if** i==**"h"**:  
 **break  
else**:  
 print(**"End of Program"**, end=**" "**)

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

**range(10)= (0,1,2,3,4,5,6,7,8,9) (here range is 1 to 9 (i.e. n-1))**

**range(0,10)= (0,1,2,3,4,5,6,7,8,9) (here 0 is lower limit and 10 is upper limit)**

**range(0,10,1)= (0,1,2,3,4,5,6,7,8,9) (here range is 1 to 9 (i.e. n-1) and the THIRD PARAMETER is the STEP SIZE of 1)**

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.

**Using For loop:**

**for** i **in** range(1,11):  
 print(i, end=” ”)

**Using while loop:**  
n=1  
**while** n<=10:  
 print(n, end=” ”)  
 n=n+1

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

1. Import the module

2. call the bacon() like the other functions in the program

Example:

**import** spam  
  
**for** i **in** range(10):  
 print(spam.bacon(2,8))

***\*\*\*\* Please elaborate more for Q13 because I get this explanation from internet and not sure about the information shared in that video was right.***