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

Ans.)The python Boolean data type has only two possible values:

a)True

b)False

The bool() method is used to return the truth value of an expresison.

E.g.:#Check equality

a=5

b=10

print(bool(a==b))

Output:-False

To write them always remember that they start with capital letter then only it will be accepted as a Boolean value.

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

Ans.)The three different types of Boolean operators are:

a)AND operator-The ***AND boolean operator*** is similar to the bitwise ***AND operator*** where the operator analyzes the expressions written on both sides and returns the output.

* *True and True = True*
* *True and False = False*
* *False and True = False*
* *False and False = False*

b)OR operator-The ***OR operator***is similar to the***OR bitwise operator***. In the bitwise OR, we were focussing on either of the bit being 1. Here, we take into account if either of the expression is true or not. If at least one expression is true, consequently, the result is true.

* *True or True = True*
* *True or False = True*
* *False or True = True*
* *False or False = False*

c)NOT operator-The ***NOT operator***reverses the result of the boolean expression that follows the operator. It is important to note that the NOT operator will only reverse the final result of the expression that ***immediately follows***. Moreover, the NOT operator is denoted by the keyword “***not***“.

* *not(True) = False*
* *not(False) = True*

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 evaluate ).

Ans.)For AND operator

|  |  |  |
| --- | --- | --- |
| First Operand | Second Operand | Output |
| True | True | True |
| True | False | False |
| False | True | False |
| False | False | False |

For OR operator

|  |  |  |
| --- | --- | --- |
| First Operand | Second Operand | Output |
| True | True | True |
| True | False | True |
| False | True | True |
| False | False | False |

For NOT operator

|  |  |
| --- | --- |
| Operand | Output |
| True | False |
| False | True |

4. What are the values of the following expressions?

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

not (5 > 4

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

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

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

(not False) or (not True)

Ans.)False

False

True

False

False

True

5. What are the six comparison operators?

Ans.)

|  |  |  |
| --- | --- | --- |
| Comparison Operator | Description | Example |
| == | returns True if two operands are equal, otherwise False. | a == b |
| != | returns True if two operands are not equal, otherwise False. | a != b |
| > | returns True if left operand is greater than the right operand, otherwise False. | a > b |
| < | returns True if left operand is smaller than the right operand, otherwise False. | a < b |
| >= | returns True if left operand is greater than or equal to the right operand, otherwise False. | a > b |
| <= | returns True if left operand is smaller than or equal to the right operand, otherwise False. | a < b |

Bottom of Form

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

Ans.)The ‘=’ operator is used to assign the value on the right to the variable on the left.

**For example:**

a = 10;

b = 20;

ch = 'y';

The ‘==’ operator checks whether the two given operands are equal or not. If so, it returns true. Otherwise it returns false.  
**For example:**

5==5

This will return true.

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')

Ans.) the code with proper indentation can be written as:-

spam=0

if spam==10:

print(‘eggs’)

if spam>5:

print(‘bacon’)

else:

print(‘ham’)

print(‘spam’)

print(‘spam’)

So,we can now clearly see that the first block is first if statement code,second is second if statement code,and the last is else statement code.

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.

Ans.)spam=5

if spam==1:

print(“Hello”)

if spam==2:

print(“Howdy”)

else:

print(“Greetings!)

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

Ans.)To exit out of infinite loop on the command line,press CNTRL+C.

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

Ans.) The break statement terminates the loop containing it. Control of the program flows to the statement immediately after the body of the loop.

The continue statement is used to skip the rest of the code inside a loop for the current iteration only. Loop does not terminate but continues on with the next iteration.

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

Ans.)range(stop)-When user call range() with one argument, user will get a series of numbers that starts at 0 and includes every whole number up to, but not including, the number that user have provided as the stop. For Example –for range(10) output will be 0,1,2,3,4,5,6,7,8,9

range(start,stop)- When user call **range()** with two arguments, user get to decide not only where the series of numbers stops but also where it starts, so user don’t have to start at 0 all the time. User can use range() to generate a series of numbers from X to Y using a range(X, Y). For Example –for range(0,10),start at 0 and stops at 10.So its output will be 0,1,2,3,4,56,7,8,9.

range(start,stop,step)- When user call range() with three arguments, user can choose not only where the series of numbers will start and stop but also how big the difference will be between one number and the next. If user don’t provide a step, then range() will automatically behave as if the step is 1.For example-for range(0,10,1),start at 0,stop at 10,steps by 1.So its output will be 0,1,2,3,4,5,6,7,8,9.

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.

Ans.)Using for loop:-

for i in range(1,11):

print(i)

Using While loop:-

i=1

while (i!=11):

print(i)

i+=1

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

Ans.) This **function can** be **called** with **spam**. **bacon()**.