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

🡪 The two values of the Boolean data type are: True and False.

To write them we use capital T and F and the rest of the word is in lowercase.

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

🡪 The three basic types of Boolean operators are:

* 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 evaluate ).

🡪Following are the truth tables of Boolean operators:

* AND operator

|  |  |  |
| --- | --- | --- |
| A | B | A and B |
| FALSE | FALSE | FALSE |
| FALSE | TRUE | FALSE |
| TRUE | FALSE | FALSE |
| TRUE | TRUE | TRUE |

* OR operator

|  |  |  |
| --- | --- | --- |
| A | B | A or B |
| FALSE | FALSE | FALSE |
| FALSE | TRUE | TRUE |
| TRUE | FALSE | TRUE |
| TRUE | TRUE | TRUE |

* NOT operator

|  |  |
| --- | --- |
| A | Not A |
| FALSE | TRUE |
| TRUE | FALSE |

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?

🡪 Following are the six comparison operators:

* ==
* !=
* <
* >
* <=
* >=

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 uses ‘ == ‘ (double equal sign)

Assignment operator uses ‘ = ‘ (single equal sign)

‘==’ is the equal to operator which compares two values/expressions and evaluates to a Boolean, while ‘=’ is the assignment operator that stores a value in a variable.

Example –

* If we want to compare two values we will use equal to operator as:

2 == 3

This will compare the two values on left and right side of the equal to operator and evaluate to a Boolean, in this case Boolean value will be FALSE

* If we need to store a value in a variable we will use assignment operator as:

X = 5

This will assign 5 (a value) to X (the variable)

Condition / Conditional statement: Conditional statements in python perform different computations or actions depending on whether a specific Boolean constraint evaluates to true or false. Example – If statement, if-else statement, while statement

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')

🡪The three blocks are code lines inside the if statement and the lines print(‘bacon’) and print(‘ham’)

spam = 0

if spam == 10:

print('eggs') *#block#1 started as indent increased*

if spam > 5: *#inside block#1*

print('bacon') *#still block#1, indent increased, block#2 inside block#1*

else: *#still block#1, indent decreased, block#2 ended in above line*

print('ham') *#still block#1, indent increased, block#3 inside block#1*

print('spam') *#still block#1, indent decreased, block#3 ended in above line*

print('spam') *#indent decreased, block#1 ended in above line*

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.

🡪 The code is:

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?

🡪 If our programme is stuck in an endless loop we need to exit the loop and stop the programme by interrupting the kernel. This can be done by pressing ‘Ctrl + C’ keys.

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

🡪 In python, break and continue statements can alter the flow of a normal loop.

The break statement terminates the loop containing it.Control of the program flows to the statement immediately after the body of the loop. If the break statement is inside a nested loop, it will terminate the innermost loop.

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)?

🡪 Technically all three functions call do the same thing. The range(10) call ranges from 0 up to (but not including) 10, range(0,10) tell the loop to start at 0 up to (but not including) 10 and range(0,10,1) tells the loop to start at 0 and increase the variable by 1 on each iteration going all the way up to 10(but not including 10).

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.

🡪 Program to print numbers 1 to 10:

* Using for loop-

for i in range(0,11):

print(i)

* Using while loop-

i = 1

while i <= 10:

print(i)

i = i + 1

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

🡪 The function can be called as-

spam.bacon()