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

Answer: The Boolean data type in Python has two values: True and False. These values represent the truthfulness or falseness of a statement or condition. When working with Boolean values, it's important to capitalize the first letter, as Python is case-sensitive. Here are the two Boolean values and how they are written:

True: Represents the truth or a positive condition.

Written as True.

False:

Represents falseness or a negative condition. Written as False.

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

Answer: Boolean operators are used to perform logical operations on Boolean values. In Python, there are three main Boolean operators:

AND Operator (and): Returns True if both operands are true; otherwise, it returns False.

OR Operator (or): Returns True if at least one of the operands is true; if both are false, it returns False.

NOT Operator (not): Returns the opposite of the operand's truth value. If the operand is True, it returns False; if the operand is False, it returns 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 ).

1. Answer: **AND Operator (and):**

| **A** | **B** | **A and B** |
| --- | --- | --- |
| T | T | T |
| T | F | F |
| F | T | F |
| F | F | F |

1. **OR Operator (or):**

| **A** | **B** | **A or B** |
| --- | --- | --- |
| T | T | T |
| T | F | T |
| F | T | T |
| F | F | F |

1. **NOT Operator (not):**

| **A** | **not A** |
| --- | --- |
| T | F |
| F | 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?

Answer: Equal to (==): Returns True if the operands are equal; otherwise, it returns False.

Example: x == y

Not equal to (!=): Returns True if the operands are not equal; otherwise, it returns False.

Example: x != y

Greater than (>): Returns True if the left operand is greater than the right operand; otherwise, it returns False.

Example: x > y

Less than (<): Returns True if the left operand is less than the right operand; otherwise, it returns False.

Example: x < y

Greater than or equal to (>=): Returns True if the left operand is greater than or equal to the right operand; otherwise, it returns False.

Example: x >= y

Less than or equal to (<=): Returns True if the left operand is less than or equal to the right operand; otherwise, it returns False.

Example: x <= y

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

Answer: Equal To Operator (==): The double equals sign (==) is a comparison operator used to check if two values are equal.

Example: x = 5

y = 10

result = (x == y) # Result is False

Assignment Operator (=): The single equals sign (=) is an assignment operator used to assign a value to a variable.

Example: x = 5 # Assigns the value 5 to the variable x

y = x # Assigns the value of x to the variable y

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')

Answer: Block 1: This block includes the assignment statement spam = 0 and the beginning of the first if statement (if spam == 10:).

Block 2: This block is part of the first if statement. It consists of the print statement that will be executed if the condition spam == 10 is True.

Block 3: This block includes the second if statement (if spam > 5:), the print('bacon') statement associated with it, and the else block with three print statements (print('ham'), print('spam'), 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.

Answer: spam = # You can assign any value to spam for testing

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?

Answer : Ctrl + C (Windows/Linux):

Press and hold the Ctrl key and then press the C key.

This is a common keyboard shortcut to interrupt the execution of a running program in many command-line environments.

Command + . (Mac):

Press and hold the Command key and then press the period key.

On macOS, this is a common shortcut to interrupt the execution of a running program in the terminal.

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

Answer: break is used to exit a loop entirely. continue is used to skip the rest of the code inside a loop for the current iteration and move on to the next iteration.

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

Answer: all three forms, range (10), range(0, 10), and range(0, 10, 1), generate the same sequence of numbers in a for loop. The start value defaults to 0, the stop value is specified (but not included), and the step value defaults to 1. The differences are mostly in how explicit you want to be about the start, stop, and step values.

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.

Answer: Using For Loop:

# Using a for loop

for i in range (1, 11):

print(i)

# Using a while loop

counter = 1

while counter <= 10:

print(counter)

counter += 1

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

Answer:

import spam

spam.bacon()