1. What are the Boolean data type's two values? How do you go about writing them?

Ans- The **Boolean data type** is a **data type** that has one of **two** possible **values** (usually denoted true and false) which is intended **to** represent the **two** truth **values** of logic and **Boolean** algebra. A **boolean data type** is declared with the **bool** keyword and can only take the values true or false . When the value is returned, true = 1 and false = 0 .

**Example**

print(10 > 9)  
print(10 == 9)  
print(10 < 9)

output- True

False

False

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

Ans-

* **The** AND **operator** (&& or “and”)
* **The** OR **operator** (|| or “or”)
* **The** NOT **operator** (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 ).

Ans-Boolean operator’s truth table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **condition 1 (e.g., X)** | **condition 2 (e.g., Y)** | **NOT X ( ~ X )** | **X AND Y ( X && Y )** | **X OR Y ( X || Y )** |
| false | false | true | false | false |
| false | true | true | false | true |
| true | false | false | false | true |
| true | true | false | true | true |

|  |  |  |
| --- | --- | --- |
|  |  |  |
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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- True ,if we write whole line once in a cell

(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 different types of reference operators?

Ans Comparison operators are used to compare two values:

Operator Name

1 = = Equal

2 != Not equal

3 > Greater than

4 < Less than

5 >= Greater than or equal to

6 <= Less than or equal to

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

6. How do you tell the difference between the equal to and assignment operators?

Ans - >The “=” is an **assignment operator** is used to **assign** the value on the right to the variable on the left.

For example

a = 10;

b = 20;

**== operator**

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. Describe a condition and when you would use one.

**condition**. The boolean expression in a conditional statement that determines which branch is executed. conditional statement. A statement that controls the flow of execution depending on some **condition**. In **Python** the keywords if , elif , and else are used for conditional statements.Determine the statement by checking condition is True OR False

**Example**

a = 200  
b = 33  
if b > a:  
  print("b is greater than a")  
elif a == b:  
  print("a and b are equal")  
else:  
  print("a is greater than b")

output –

In this example a is greater than b, so the first condition is not true, also the elif condition is not true, so we go to the else condition and print to screen that "a is greater than b".

## 2. The while Loop

Exit the loop when i is 3:

i = 1  
while i < 6:  
  print(i)  
  if i == 3:  
    break  
  i += 1

## 3. For Loops

**Example**

Do not print banana:

fruits = ["apple", "banana", "cherry"]  
for x in fruits:  
  if x == "banana":  
    continue  
  print(x)

8. Recognize the following 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 three blocks are everything inside the if statement and the lines print('bacon') and print('ham').

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

9. Create a programme that prints. If 1 is stored in spam, prints Hello; if 2 is stored in spam, prints Howdy; and if 3 is stored in spam, prints Salutations! if there's something else in spam.

spam = 1

if spam == 1:

print('Hello')

if spam > 1:

print('Howdy')

else:

if spam > 2:

print('Salutations!')

10.If your programme is stuck in an endless loop, what keys can you press?

Ans-> Press CTRL-C to stop a program stuck in an infinite loop.

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

Ans -> The break statement will move the execution outside and just after a loop. The continue statement will move the execution to the start of the loop.

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

Ans - > They all do the same thing. The range(10) call ranges from 0 up to (but not including) 10, range(0, 10) explicitly tells the loop to start at 0, and range(0, 10, 1) explicitly tells the loop to increase the variable by 1 on each iteration.

13. Using a for loop, write a short programme that prints the numbers 1 to 10 Then, using a while loop, create an identical programme that prints the numbers 1 to 10.

Ans-> The code:

for i in range(1, 11):

print(i)

and:

i = 1

while i <= 10:

print(i)

i = i + 1

14. If you had a bacon() function within a spam module, what would you call it after importing spam?

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