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

Boolean data types have two states:

* True, which should be capitalized (True) in Python and equals 1.
* False, which should be capitalized (False) in Python and equals 0.

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

There are three Boolean operators:

* **and**: If any value is false, the outcome is false.
* **or**: If both values are false, the output will be false.
* **not**: If true is given, the output will be false, and vice versa.

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 ).

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | A and B | A or B |
| True | False | False | True |
| False | True | False | True |
| False | False | False | True |
| True | True | True | True |

|  |  |
| --- | --- |
| A | Noa A |
| 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)

(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?

> : Greater than (e.g., 5 > 4)

< : Less than

>= : Greater than or equal to

<= : Less than or equal to

== : Equal to

!= : Not 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.

To assign a value to a variable, use a single = operator (e.g., a=10, b=10). To compare two variables or values, use a double = operator (e.g., a==b).

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')

```python

spam = 0

if spam == 10: # Block 1

print('eggs')

elif spam > 5: # Block 2

print('bacon')

else: # Block 3

print('ham')

print('spam')

print('spam')

```

There are three blocks:

* `if spam == 10` executes Block 1.
* `elif spam > 5` executes Block 2.
* If neither condition is met, Block 3 executes.

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.

```python

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?

I used Ctrl+D whenever my programme got stuck.

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

`continue` is used to skip a specific iteration in a loop, while `break` terminates the loop entirely.

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

The `range(10)` function returns a generator that produces values from 0 to 9 (excluding 10), with the default start value of 0.

The `range(0,10)` function also returns a generator that produces values from 0 to 9 (excluding 10), where the start value is explicitly defined as 0.

The `range(0, 10, 1)` function returns a generator that produces values from 0 to 9 (excluding 10), specifying both the start value as 0 and the step increment as 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.

Code:

```python

for num in range(1, 11):

print(num)

i = 1

while i <= 10:

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?

```python

import spam

spam.bacon()

```