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

**Answer:** True and False

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

**Answer:** 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 ).

|  |  |  |
| --- | --- | --- |
| **and Truth table** | | |
| **Value 1** | **Value 2** | **Result** |
| False | False | False |
| False | True | False |
| True | False | False |
| True | True | True |

|  |  |  |
| --- | --- | --- |
| **or Truth table** | | |
| **Value 1** | **Value 2** | **Result** |
| False | False | False |
| False | True | True |
| True | False | True |
| True | True | True |

|  |  |
| --- | --- |
| **not Truth Table** | |
| Value | Result |
| 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?

**Answer:** >, <, >=, <=, ==, !=

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

**Answer:**

In assignment we use single = and to in equal to we use double ==

Assignment operator is used to assign a value to a variable. Whereas equal to operator is used to compare the value of two variable.

a=10 Assigns the value 10 to variable a

x=10

y=20

x==y checks if x and y have same value of not.

7. Identify the three blocks in this code:

spam = 0

**# Block 1**

if spam == 10:

print('eggs')

**# Block 2**

if spam > 5:

print('bacon')

**# Block 3**

else:

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.

spam = 1

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

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

**Answer:**

Break is used to terminate the current iteration of a loop. Continue is used to skip the current iteration of the loop and continue with the next iteration.

|  |  |
| --- | --- |
| for i in range(11):  if i == 5:  break  print(i, end=" ") | for i in range(11):  if i == 5:  continue  print(i, end=" ") |
| Output: 0 1 2 3 4 | Output: 0 1 2 3 4 6 7 8 9 10 |
| As here break is used the loop terminates when the condition meet. | In this example continue is used. So 5 in not printed as the iteration is skipped and loop continues with the next iterations. |

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

**Answer:** From the outcome perspective there is no difference among all three. All of them will give a sequence 0, 1, 2,…., 9. From the uses perspective –

range(10) only specifies the end + 1 value

range(0,10) specifies the start and end +1 value

range(0,10,1) specifies the start, end+1 and step value

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.

|  |  |
| --- | --- |
| for i in range(1,11):  print(i, end=" ") | i = 1  while(i<=10):  print(i, end=" ")  i+=1 |

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

**Answer:** spam.bacon()