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

a=True

b=False

print(a,type(a))

print(b,type(b))

True <class 'bool'>

False <class 'bool'>

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

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | Operand 1 | Operand 2 | Output | | 0 | 0 | 0 | | 0 | 1 | 0 | | 1 | 0 | 0 | | 1 | 1 | 1 | |  |  |
|  |  |  |
| OR   |  |  |  | | --- | --- | --- | | Operand 1 | Operand 2 | Output | | 0 | 0 | 0 | | 0 | 1 | 1 | | 1 | 0 | 1 | | 1 | 1 | 1 | |  |  |
|  |  |  |
| NOT   |  |  | | --- | --- | | Operand | Output | | 0 | 1 | | 1 | 0 | |  |  |

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?

== , <= , >=, !=, <,>

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

An equal to operator (=) is used to assign a value to a variable

Eg: a=10

Whereas == operator returns a boolean value based on the condition

A==10

Returns True as output

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')

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.

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?

Press Ctrl-c to stop a program stuck in an infinite loop

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

The **break** statement will move the execution outside the loop if break condition is satisfied. Whereas the **continue** statement will move the execution to the start of the loop

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

1. The *range(10)* call range from 0 to 9 (but not include 10)
2. The *range (0,10)* explicitly tells the loop to start at 0
3. The *range(0,10,1)* explicitly tells the loop to increase the variable by 1 on each iteration

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)

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?

Spam.bacon()