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

Solution –

True and False

We should write as shown above (Python is case sensitive and hence the same as above needs to be maintained)

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

Solution -

Boolean operators – OR, AND, 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).

Solution –

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| p | q |  |  |  |
| True | False | p OR q | p | q | True |
| False | True | p OR q | p | q | True |
| True | True | p OR q | p | q | True |
| False | False | p OR q | p | q | False |
| True | True | p AND q | p&q | True |
| True | False | p AND q | p&q | False |
| False | True | p AND q | p&q | False |
| False | False | p AND q | p&q | False |
| True | False | NOT(p OR q) |  | False |

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) Output - False

not (5 > 4) Output - False

(5 > 4) or (3 == 5) Output - True

not ((5 > 4) or (3 == 5)) Output - False

(True and True) and (True == False) Output - False

(not False) or (not True) Output - True

5. What are the six comparison operators?

Solution –

Equals to (==)

Greater than (>)

Less than (<)

Greater than or equals to (>=)

Less than or equals to (<=)

Not equals to (!=)

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

Solution -

Assignment operator - Equal (=) to is used to assign a value/reference to a variable

Equals to in comparison operator (==) is used to compare two values.

e.g. –

x = ‘String value’

y = ‘String Value’

if x==y:

print (‘x and y are same’)

else:

print (‘x and y are different’)

7. Identify the three blocks in this code:

spam = 0

if spam == 10: -- simple if block

print('eggs')

if spam > 5: -- if block in an if-else block

print('bacon')

else: -- else block

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.

Solution -

if spam == 1:

print(“Hello”)

if spam == 2:

print(“Howdy”)

else:

print(“Greetings!”)

9.If your programme is stuck in an endless loop, what keys you’ll press?

Solution –

Ctrl+c

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

Solution –

Break – It is used to end the loop and the control comes out of the loop and executes the next statement

Example –

for x in range (5):

if x<=3:

print (“loop executed for x :”,x)

if x==4:

break

Continue – It is used to continue the loop to the next iteration

Example –

for x in range(5):

if x<=3:

print(“loop executed for x :”,x)

if x==4:

continue

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

Solution –

All three mentioned are same – range (start, end, increment)

For start and increment, default value is 0 and 1 respectively.

range(10) – when we use this statement in for loop it will result in values starting from 0 (by default if not specified otherwise) to 9 with an incremental value of 1 by default (if not specified otherwise).

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.

Solution –

**FOR LOOP –**

for x in range (1,11):

print(x)

WHILE LOOP –

x = 1

while x<=10:

print(x)

x+=1

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

Solution –

spam.bacon()