**Assignment-2**

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

Solution: Boolean data types two values are ‘True’ and ‘False’. The syntax for writing Boolean type data is ‘bool (1)’, which will return value as ‘true’ and ‘bool (0)’, which will return ‘False’.

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

Solution: Three different type of Boolean operators are ‘and’, ‘or’ and ‘not’.

1. Make a list of each Boolean operator's truth tables (i.e., every possible combination of Boolean values for the operator and what it evaluates).

Solution:

**‘AND’** truth table

|  |  |  |  |
| --- | --- | --- | --- |
| X | and | Y | Returns |
| True | And | True | True |
| True | And | False | False |
| False | And | True | False |
| False | And | False | True |

**‘OR’** truth table

|  |  |  |  |
| --- | --- | --- | --- |
| X | OR | Y | Returns |
| True | OR | True | True |
| True | OR | False | True |
| False | OR | True | True |
| False | OR | False | False |

**‘NOT’** truth table

|  |  |  |
| --- | --- | --- |
| Not | X | Returns |
| Not | True | False |
| Not | False | True |

1. 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

1. What are the six different types of reference operators?

Solution: The six different types of reference operators are:

* Assignment
* Arithmetic
* Comparison
* Bitwise
* Logical
* Precedence.

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

Solution:

**Assignment operator:** It is used to assign a value to a variable. A constant term cannot be placed on the left-hand side.

**Equal-to operator:** It is a relational or comparison operator. It returns 1 or True if both the arguments are valid, else it gives 0 or False as an output. Constants can be put or used on the left-hand side.

1. Describe a condition and when you would use one.

Solution: Conditions are used in python to check the validity of an argument and follows for the execution of the statement contained in it, for an example ‘IF’ condition is used to check for the truthiness of the argument passes and if it found to be true it will execute the statements contained in it.

1. 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')

Solution: 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')

As the above statements are inside the first ‘IF’ statement, so these will also not be executed.

The only thing that will execute is the last print statement, as it is out of the ‘IF’ condition and ‘bacon’ will be the output.

1. 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.

Solution:

spam = int(input("enter your number from 1 to 3: "))

if spam == 1:  
print('Hello')  
elif spam == 2:  
print('Howdy')  
else:  
print('Greetings!')

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

Solution: We can press CTRL+C twice to get out of an endless loop.

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

Solution: 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)?

Solution: With output wise, all the three will give the same output but, with syntax wise here’s the difference: -

range(10): It simply means to traverse the lop from 0-9 times where only the truncation point is mentioned and by default it takes starting point as ‘0’.

range(0,10): Here, the starting and ending points are specified or given by the user it self as ‘0’ and ‘10’.

range(0,10,1): In this case, the user along with the starting and the ending point, the skip value is also mentioned. Skip value is the number of values that will be skipped while traversing inside the range.

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.

Solution:

for i in range(1,11,1):

print(i)

i = 1

while i<=10:

print(i)

i= i + 1

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

Solution: This function can be called with spam.bacon().