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

The two Boolean values are “TRUE” and “FALSE”. We can write them as below:

gud\_marks = True, is\_spam = False

The Values should **not** be quoted like “True” as python will interpret it as strings.

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

The three different Boolean operators are:

* 1. AND
  2. OR
  3. 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** | | |
| Conditional Input 1 | Conditional Input 2 | Output |
| True | True | True |
| False | True | False |
| True | False | False |
| False | False | False |

|  |  |  |
| --- | --- | --- |
| **OR Truth Table** | | |
| Conditional Input 1 | Conditional Input 2 | Output |
| True | True | True |
| False | True | True |
| True | False | True |
| False | False | False |

|  |  |
| --- | --- |
| **NOT Truth Table** | |
| Conditional Input 1 | Output |
| True | False |
| False | True |

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?

|  |  |
| --- | --- |
| **Comparison Operators** | |
| **<** | Lesser Than |
| **>** | Greater Than |
| **<=** | Lesser Than or Equal To |
| **>=** | Greater 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.

The difference between equal to & the assignment operations is in the number of equal signs I.e.,

name = “Harish” — using single equal sign (=) will assign a value to the variable

spam == 10 — using double equal sign (==) will compare and check if variable’s value is either 10 or not and return boolean value (True or False)

Usage:

Suppose I want to get the age of a user and check if he is 21 years.

age = int(input(“Enter your age:”))

If age == 21:

print(“You’re 21 years old!”)

else:

print(“You’re age is not 21 years ”)

Here I’m using assignment operator (=) to store the age from the user in a variable and then use the equal to (==) to validate if he/she is 21 years old.

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')

**The three different colors denotes each block in the above code.**

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 = int(input(‘Enter the spam value : ‘))

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?

Ctrl + c

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

**break** : This exits the current loop from which it was invoked. ‘break' exits the current loop, and the code moves on to the next line after the current loop ends.

**continue** : The continue statement is used to skip code within a loop for certain iterations of the loop.The loop resumes where it left off after the code is skipped.

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

The function range takes three arguments : Starting value, ending value and the step size. The function if given only one argument takes it as ending value with default start value as zero and step size as 1. If given two arguments, it consider them as starting value and ending value with default step size as 1.

So, the above range functions are all basically same with same output with zero (0) as starting value, 10 has the ending value and a step size of 1 :

0

1

2

3

4

5

6

7

8

9

Suppose if we had range(0,10,2), the output would have been :

0

2

4

6

8

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): #Using for loop

print(i)

—————————————————————————

i=1 #Using while loop

while i < 11:

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()**