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

**Answer :-**  Boolean data type returns two values :- True or False.

T and F should be in uppercase, if we will give b=true or false as lowercase t and f , the python interpreter will throw an error :- the name “true” is not defined.

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

**Answer :-** The three different types of Boolean operators are :- AND , NOT , OR

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 evaluates ).

**Answer :-**

**Truth Table for “ AND “**

|  |  |  |
| --- | --- | --- |
| **X** | **Y** | **X and Y** |
| **0** | **0** | **0** |
| **0** | **1** | **0** |
| **1** | **0** | **0** |
| **1** | **1** | **1** |

**Truth Table for “OR”**

|  |  |  |
| --- | --- | --- |
| **X** | **Y** | **X Or Y** |
| **0** | **0** | **0** |
| **0** | **1** | **1** |
| **1** | **0** | **1** |
| **1** | **1** | **1** |

**Truth table for “ NOT”**

|  |  |
| --- | --- |
| **X** | **Not ( X )** |
| **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 different types of comparison operators?

**Answers :-** The 6 types of comparison operators are :-

Let suppose, a,b=10,20

|  |  |  |
| --- | --- | --- |
| Operators | Description | Example |
| < | If value of a is less than the value of b it returns True | (a<b) = True |
| > | If value of a is greater than the value of b it returns True | (a>b) = False |
| < = | If value of a is less than or equal to the value of b it returns True | (a <= b) = True |
| >= | If value of a is greater than or equal to the value of b it returns True | ( a>=b) = False |
| != | If value of a is not equal to the value of b it returns True | (a!-b) = True |
| == | If value of a is equal to the value of b it returns True | (a==b) = False |

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

**Answers:-** (==) is a comparison operator that is used to compare the values of two variables.

Ex :- a=10,b=10

if(a==b): # Comparing the values of a and b and returns True or False

print(“a is equal to b”)

(=) is an assignment operator that is used to assign a value to the variable.

Ex :- a=10

f=10.6

s=”abc”

c=a+f

7. Describe a condition statement and when you would use one.

**Answer :- Condition Statement** is used to evaluate decision making statements which decides the flow of the statement based on the expression is True or False.

It is used based on the requirements whether a block of statements will be executed or not.

The types of conditional statements are :-

i) if statement

ii) if-else statement

iii)Nested if-else statement

iv)if-elif ladder

8. 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')

**Answer :- spam.** Since spam=0, it will not enter the “if” statement and print the spam which is outside the if statement blocks.

9. 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.

**Answer:-**

spam = int(input("Enter the number"))

if spam==1:

print("Hello")

elif spam==2:

print("Howdy")

elif spam==3:

print("Salutations!")

else:

print("if there is something else in spam")

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

**Answer :-** we can use interrupt in the kernel menu to come out of the infinite loop in the jupyter notebook.

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

**Answer :-**

**Break :-** “break” keyword is used to interrupt the loop and come out of it whereas “continue” is used to skip the block of statement within a loop for a certain iteration of the loop.

**Code snippet for break Code Snippet for Continue**

for i in range(10): for i in range(7):

if i==5: if i==5:

Break continue

print(i) print(i)

**Output Output**

**0 0**

**1 1**

**2 2**

**3 3**

**4 4**

**6**

Here in the above example break keyword is breaking the loop at i ==5 and prints i 0,1,2,3,4 whereas continue keyword skips the iteration at i==5 and continues the loop where it left off.

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

**Answer :- In a for Loop :-**

**Syntax for range(start,stop,step):**

**Start :** Integer starting from which the iteration to be returned.

**Stop :** Integer before which the sequence to be returned. The value will iterate till stop-1.

**Step :** Integer value which return the increment between each integer in the sequence.It is

optional.

**for i in range(10) :** means that the iteration will occur from 0 to 9. Here 10 is given as stop value and start value is by default considered as 0.

**for i in range(0,10) :** means that the iteration will occur from 0 to 9.Here both start=0 and stop=10 is given.

**for i in range(0,10,1) :** Here start =0,stop=10 and step =1 is given .it will also iterate from 0 to 9.The increment is done by 1 as step =1.

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.

# program to print 1-10 numbers using for loop

for i in range(1,11):

print(i)

#program to print 1-10 numbers using while loop.

n=1

while n<=10:

print(n)

n=n+1

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

**Answer :-** We can import package two ways:-

i) from spam import bacon

r=bacon()

print(r)

ii) import spam

r=spam.bacon()

print(r)