**Assignment-2**

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

**Ans:-** Boolean data type having two typical values “True” and “False”. This values written as “true” and “false” respectively.

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

**Ans:-** There are three different types of Boolean operator 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 ).**

**Ans:-** For **AND** operator table can be written as follows:

|  |  |  |
| --- | --- | --- |
| **X** | **Y** | **Result** |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

For **OR** operator table can be written as follows:

|  |  |  |
| --- | --- | --- |
| **X** | **Y** | **Result** |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

For **NOT** operator table can be written as follows:

|  |  |
| --- | --- |
| **X** | **Result** |
| 0 | 1 |
| 1 | 0 |

**4. What are the values of the following expressions?**

* **(5 > 4) and (3 == 5)**

Ture AND False

(1 AND 0) = 0

**Ans** = False

* **not (5 > 4)**

not (True)

**Ans:-** False

* **(5 > 4) or (3 == 5)**

( True ) OR ( False )

(1 OR 0) = 1

**Ans:-** True

* **not ((5 > 4) or (3 == 5))**

not ((True) OR (False))

NOT ((1) or (0))

NOT (1)

NOT (True)

**Ans:- False**

* **(True and True) and (True == False)**

(1 AND 1) AND (1 == 0)

( 1 AND 0)

**Ans:- False**

* **(not False) or (not True)**

True OR False

1 OR 0

1

**Ans:- True**

**5. What are the six comparison operators?**

**Ans:-** Comparison operators are used in programming languages to compare values and return a Boolean result (true or false) based on the comparison.

There are six comparison operators:-

* **Equal to (==)** – This checks if given two values are equal to, if it is equal it will give True or it will give False.

e.g:- 4 == 4 - True

* **Not equal to (!=)** – This sign check if two values are not equal and returns True if they are.

e.g- 5 != 4 – True

* **Greater Than ( > ) –** Checks if the left value is greater than the right value and returns True if it is else it will return False.

e.g:- 3 > 4 = False

* **Less Than ( < ) -** Checks if the left value is less than the right value and returns True if it is else it will return False.

e.g.:- 3 < 4 = True

* **Greater or Equal to ( >= ) -** Checks if the left value is greater than or equal to the right value and returns True if it is else it will return False.

e.g.:- 3 >= 4 this will return **False,** 5 >= 5 this will return True as both values are same.

* **Less or Equal to ( <= ) -** Checks if the left value is less than or equal to the right value and returns True if it is else it will return False.

e.g.:- 3 <= 4 this will return **True,** 5 >= 5 this will return True as both values are same.

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

**Ans:-** It is very simple to differentiate between equal to sign and assignment operator. When we want to compare two different values if they are equal or not we use Equal to sign which is written as double equal to sign ( == ). While when we need to assign a value to the variable we use single equal to sign ( = ).

e.g.- Consider we have two Variables A and B.

**A= 23**

**B= 12** (In these both statement we assign values for both variable by using “=” sign)

**If A==B:**

**Print(“ Both Values are same”)** (In this expression we compare both variables by using “==” sign, in above case both variables contain different values results above print statement will not get print)

7. Identify the three blocks in this code:

**Ans:-**

spam = 0

if spam == 10:

print('eggs') ……. Block1

if spam > 5:

print('bacon') ………. Block2

else:

print('ham')

print('spam')

print('spam') ………… Block3

**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.**

**Ans:-**

A screen shot of a computer program

Description automatically generated

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

**Ans:-**

If program is stuck in an endless loop in Python, we can try pressing the "Ctrl" and "C" keys simultaneously. This will send interrupt signal to the running program.

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

**Ans:- “**break” and“continue” are the control flow statements used within the loop to alter the execution of program. These statements control the flow of loop.

Break:- If this statement encounters within a loop it will immediately terminates the loop execution and transfer the control to the next line after loop.

Continue:- When this statement encounters within a loop, it will skip the loop for that current iteration and attempt next iteration and execute it.

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

**Ans:-** range(10)= This will run for loop from 0 to (10-1) times. In this statement initial number of range is always 0.

Range(0,10)= This is similar to the above statement, this will run code within for loop from 0 to(10-1) times. But if we replace 0 with any number which is less than 10 then loop start from “n” to (10-1) times.

Range(0,10,1)= this statement will execute the code within for loop from 0 to (10-1)times with one iteration skip. By default this skipping factor is 1 but we can change it by any number.

**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.**

**Ans:- Code to print the numbers 1 to 10 using For loop.**

**A screen shot of a computer

Description automatically generated**

**Code to print the numbers 1 to 10 using while loop.**

**A screen shot of a computer

Description automatically generated**

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

**Ans:-** import spam

spam.bacon()