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

**Solution:**

**Boolean data type has 2 values which are True and False.**

**We can declare a Boolean value by assigning it to a variable**

**Ex. var1= True**

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

**Solution:**

**Three different types of Boolean operators are**

* **and Ex. if(a<b and a<c)**
* **or Ex. if (a<b or a<c)**
* **not Ex. if(not (a==b))**

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:**

* **And operator**

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

* **Or operator**

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

* **Not operator**

|  |  |
| --- | --- |
| **X** | **Not(X)** |
| **0** | **1** |
| **1** | **0** |

4. What are the values of the following expressions?

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

not (5 > 4)

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

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

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

(not False) or (not True)

**Solution:**

**(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?

**Solution:**

|  |  |
| --- | --- |
| **Operator** | **Name** |
| **==** | **Equal** |
| **!=** | **Not equal** |
| **>** | **Greater than** |
| **<** | **Less than** |
| **>=** | **Greater than or equal to** |
| **<=** | **Less than or 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.

**Solution:**

**Assignment operators are used to assign values to the variables. One of the assignment operator is equal to. Some of the assignment operators are given below:**

|  |  |
| --- | --- |
| **Operator** | **Example** |
| **=** | **A=35** |
| **+=** | **A+=9** |
| **&=** | **A&=3** |

7. Identify the three blocks in this code:

spam = 0

if spam == 10:

print('eggs') **#Block 1**

if spam > 5:

print('bacon') **#Block 2**

else:

print('ham')

print('spam') **Block 3**



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’)**

**elseif(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 and continue both are the control statement used inside the loop.**

* **Break statement is used to terminate the loop immediately and control goes to the next statement after the loop.**
* **Continue statement makes the loop to skip its current execution and move on to the next iteration.**

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

**Solution:**

**For all the statements, the output is 0,1,2,3,4,5,6,7,8,9**

**range(10): Range of values from 0 to 9. Here the starting value and the increment size is implicitly specified.**

**Range(0,10): Range of values from 0 to 9. The default increment size of 1 is taken**

**Range(0,10,1): Range of values from 0 to 9 with increment size of 1.**

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:**

**Using for loop:**

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

**print(i)**

**Using while loop:**

**i=1**

**while(i <=10):**

**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?

**Solution:**

**spam.bacon()**