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

>> **The two values of Boolean data types are:**

* **True**
* **False**

**True and False are reserved keyword and is case sensitive. Hence True and true are not same**

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

>> **Three different types of Boolean operators are:**

* **and**  
  **It gives True if both the conditions are True, hence gives False**  
  **Ex: (5<10) and (2<10) gives True**  
  **(5>10) and (2<10) gives False**
* **or**  
  **It gives True if either of the conditions are True, hence gives False (if both conditions are False)**  
  **Ex: (5<10) or (2<10) gives True**  
  **(5>10) or (2<10) gives False**
* **not**  
  **It gives inverse of the condition.**  
  **Ex: not (5>10) gives False**

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 ).

>> **Truth table**

* **and**

|  |  |  |
| --- | --- | --- |
| **Operand 1** | **Operand 2** | **Result** |
| **True** | **True** | **True** |
| **True** | **False** | **False** |
| **False** | **True** | **False** |
| **False** | **False** | **False** |

* **or**

|  |  |  |
| --- | --- | --- |
| **Operand 1** | **Operand 2** | **Result** |
| **True** | **True** | **True** |
| **True** | **False** | **True** |
| **False** | **True** | **True** |
| **False** | **False** | **False** |

* **not**

|  |  |
| --- | --- |
| **Operand** | **Result** |
| **True** | **False** |
| **False** | **True** |

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)

**>>**

**(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?

**>> Six comparison operators are:**

* **> (greater than)**
* **< (lesser than)**
* **>= (greater than or equal to)**
* **<= (lesser 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.

>> **For equal to (==) symbol is used whereas for assignment (=) symbol is used.**

**Ex:**   
**a = 10**  
**b = 20**  
**if a == b:**  
 **print(“a is equal to b”)**  
**else:**  
 **print(“a is not equal to b”)**

**In the above code, variable 'a' and 'b’ is assigned to 10 and 20 respectively using assignment operator (=). In the if condition 'a' and 'b’ are compared using equal to operator (==)**

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 blocks here are:**

* **if block with spam == 10 condition which prints ‘eggs’**
* **if block with spam > 5 condition which prints ‘bacon’**
* **else block which prints ‘ham’**

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 spam value here: "))**  
**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?

>> **If programme is stuck in an endless loop press CTRL+C**

10. How can you tell the difference between break and continue?  
>> **break: It is used to terminate the loop and continue with the statements which are outside the loop.**  
**Ex:**  
**for i in range(0, 5):**  
 **if i == 2:**  
 **break**  
 **print(i)**  
**print("Outside the loop")**

**In the above example output will be:**  
**0**  
**1**  
**Outside the loop**

**The break statement is encountered at i = 2, hence for loop will terminate**

**continue: It is used to skip the statements which are after the continue and carry on with the next iterations of the loop**  
**Ex:**  
**for i in range(0, 5):**  
 **if i == 2:**  
 **continue**  
 **print(i)**  
**print("Outside the loop")**

**In the above example output will be:**  
**0**  
**1**  
**3**  
**4**  
**Outside the loop**

**The continue statement is encountered at i = 2, hence will skip to print 2 and will continue with other iterations of loop**

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

**>> There is no difference between range(10), range(0, 10), and range(0, 10, 1).**  
**range(start, end, step) is the format of range function.**  
**If start is not specified, then by default value will be 0. If step is not specified then default value is 1.**  
**So for all three range specified start will be 0, end will be 10 and step will be 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.

**>****> Using for loop:**  
**for i in** **range(1, 11):**  
 **print(i)**

**Using while loop:**  
**i = 1**  
**while i!= 11:**  
 **print(i)**  
 **i = i+1**

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

**>> To call a function named bacon() from spam module after importing we must use spam.bacon()**