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

**Ans :- A Boolean data type is declared with the bool keyword and can only take the values true or false . When the value is returned, true = 1 and false = 0 .**

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

**Ans :- There are three logical operators that are used to compare values. These operators are and, or, and not and are defined in the table below.**

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 :-**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **B** | **A and B** | **A or B** | **Not A** |
| False | False | False | False | True |
| False | True | False | True | True |
| True | False | False | True | False |
| True | True | True | True | False |

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?

|  |  |
| --- | --- |
| **Operator** | **Meaning** |
| **=** | **Equal to** |
| **>** | **Greater than** |
| **<** | **Less Than** |
| **>=** | **Greater than or equal to** |
| **<=** | **Less than or 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.

**Ans :- assignment operator is used when we define any value to a variable whereas, when we compare/equals that variable with another value using if/while that time we use equal to == function. For e.g.**

**A = 5 (its an assignment operator)**

**If a== 5 : (it’s an equal to operator)**

**Print(“my name”)**

7. Identify the three blocks in this code:

**spam = 0**

**if spam == 10:**

**print('eggs') (block indentation error)**

**if spam > 5:**

**print('bacon') (block indentation error)**

**else:**

**print('ham') (block indentation error)**

**print('spam')**

**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.

**Ans :- a = 10**

**for i in range(0,a) :**

**if i == 1 :**

**print("Hello")**

**elif i == 2 :**

**print("Howdy")**

**else :**

**print("Greetings!")**

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

**Ans :- We need to restart the kernel we can either restart the kernel or restart the kernel with clear output. The shortcut key for restarting kernel is “ESC” + 00**

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

**Ans :- Break stop the entire code or loop whereas continue skips that current loop and go further with next loop.**

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

**Ans :- Range(10) or range(0,10) and range(0,10,1) all three are same.**

**Because range(10) has hidden start range and jump/step is also hidden i.e. +1 , so the range(10) is equals to range(0,10) as it has jump/step +1 is hidden and also equals to range(0,10,1)**

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.

**Ans :- For Loop-**

**Input - For i in range(1, 11):**

**Print(i)**

**Output - 1 2 3 4 5 6 7 8 9 10**

**While Loop – a= 1**

**b= 10**

**while a <= b:**

**print(a)**

**a = a +1**

**output- 1 2 3 4 5 6 7 8 9 10**

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