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

**Answer:**

A variable of the primitive data type Boolean can have two values: true and false

(0 & 1)

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

**Answer:**

Boolean Operators are  (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 evaluates).

Answer:

AND Table OR Table

|  |  |  |
| --- | --- | --- |
| A | B | (A AND B) Result |
| True | True | True |
| True | False | False |
| False | True | False |
| False | False | False |

|  |  |  |
| --- | --- | --- |
| A | B | (A OR B) Result |
| True | True | True |
| True | False | True |
| False | True | True |
| False | False | False |

NOT Table

|  |  |
| --- | --- |
| A | NOT A |
| True | False |

4. What are the values of the following expressions?

**Answer:**

(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?

**Answer:**

|  |  |
| --- | --- |
| Operators | Description |
| < | It is used to check if the left value is less than the right value or not |
| > | It checks whether the value on the left side is greater than the right side. |
| == | The equal to operator will return True when both the values on either side of the operator are equal. |
| <= | The left side operand is either less than or equal to the right side operand. |
| >= | It checks that the left side value should be greater than or equal to the right side value |
| != | It returns true when the values on either side are unequal to each other. |

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

**Answer:**

|  |  |
| --- | --- |
| Equal Operator(==) | The '==' operator checks whether the two given operands/values are equal or not. (LHS==RHS) |
| Assignment Operator(=) | The “=” is an assignment operator used to assign the value on the right to the variable on the left. |

Ex:

a=5: (Here I’m assigning the value 5 to the variable a)

a==5:( Here I’m checking/comparing the value of a is equal to 5 or not.)

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')

**Answer:**

spam = 0

if spam == 10:

print('eggs') # here indentation block we will get

if spam > 5:

print('bacon') # here indentation block we will get

else:

print('ham')

print('spam') # here indentation block we will get

print('spam')

If we clear the above indentation we will get the output:

ham

spam

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.

**Answer:**

|  |  |  |
| --- | --- | --- |
| spam=int(input("Enter the value of spam "))  if spam== 1:  print("Hello")  elif spam==2:  print("Howdy")  else:  print("greetings") | OR | spam=input()  if spam== 1:  print("Hello")  elif spam==2:  print("Howdy")  else:  print("greetings") |

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

**Answer:**

In this case, we can use the **break** statement to come out of the infinite loop.

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

**Answer:**

|  |  |
| --- | --- |
| Break | Continue |
| for i in range(1, 100):    print(i)    if i > 50:      break | for i in range(1, 20):   if i%2==0: # if number is even then start the loop again      continue    print(i) |
| In the above example: if i is greater than 50 it will come out of the loop. | In the above example: if the number is even it will continue the loop. Otherwise, the number is an odd number means it will come out of the loop. |
| It is used to stop the execution of the loop at a specific condition. | It is used to skip a particular iteration of the loop. |
| In the break statement, the control exits from the loop. | In the continue statement, the control remains within the loop. |

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

**Answer:**

|  |  |
| --- | --- |
| range(10) | Stops at end or at last value of 10(**excluding the index value 10**) |
| range(0, 10) | It indicates the range function starts at index value: 0 and ends/stops at last value 10**(excluding the index value 10)** |
| range(0, 10, 1) | It indicates the range function starts at index value: 0 and ends/stops at last value 10**(excluding the index value 10**) with an increment of stepsize 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.

**Answer:**

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?

**Answer:**

This function can be called spam.bacon()