**Assignment 2**

**Python Basics**

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

**Answer 1-**The two values of the Boolean data type are **True** and **False**. You write them exactly as shown, with the first letter capitalized (e.g., **True**, **False**).

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

**Answer 2-** The three different types of Boolean operators are:

* + **and**: Returns **True** if both operands are **True**, otherwise **False**.
  + **or**: Returns **True** if at least one of the operands is **True**, otherwise **False**.
  + **not**: Returns the opposite Boolean value of the operand. If the operand is **True**, **not** makes it **False**, and if the operand is **False**, **not** makes it **True**.

**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).**

**Answer 3**-Boolean operator truth tables:

* + **and**:
    - **True and True** is **True**
    - **True and False** is **False**
    - **False and True** is **False**
    - **False and False** is **False**
  + **or**:
    - **True or True** is **True**
    - **True or False** is **True**
    - **False or True** is **True**
    - **False or False** is **False**
  + **not**:
    - **not True** is **False**
    - **not False** is **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)

**Answer 4-**

(5 > 4) and (3 == 5) evaluates to False

not (5 > 4) evaluates to False

(5 > 4) or (3 == 5) evaluates to True

not ((5 > 4) or (3 == 5)) evaluates to False

(True and True) and (True == False) evaluates to False

(not False) or (not True) evaluates to True

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

**Answer 5**-The six comparison operators are:

== (equal to)

!= (not equal to)

< (less than)

> (greater than)

<= (less than or equal to)

>= (greater 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.**

**Answer 6-**

The equal to operator (==) is used for comparison, and it checks if two values are equal. The assignment operator (=) is used for assignment, and it assigns a value to a variable. To differentiate them, you look at the context:

* Equal to operator: Used in conditions or comparisons (e.g., if x == 10:).
* Assignment operator: Used to assign values to variables (e.g., x = 10).

**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 7-**

The three blocks in the code are identified by indentation:

BLOCK 1-

if spam == 10:

print('eggs')

BLOCK 2-

if spam > 5:

print('bacon')

BLOCK 3-

else:

print('ham')

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.**

**Answer 8-**

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?**

**Answer 9-** If your program is stuck in an endless loop, you can press Ctrl+C (Control key and C key together) in most terminal environments to interrupt the program and stop it.

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

**Answer 10-** break is used to exit the current loop and continue with the next code outside the loop. continue is used to skip the current iteration of the loop and move to the next iteration.

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

**Answer 11**-In a for loop, range(10), range(0, 10), and range(0, 10, 1) are equivalent and all produce the numbers from 0 to 9 (inclusive). The default start value for range() is 0, and the default step value is 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.**

**Answer12-**

* Using a **for** loop to print numbers from 1 to 10:

for i in range(1, 11):

print(i)

* Using a **while** loop to print numbers from 1 to 10:

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 13**- If you have a function named bacon() inside a module named spam, you can call it after importing spam like this:

import spam

result = spam.bacon()

You use the module name (spam) followed by a dot (.) and then the function name (bacon()) to call the function from the imported module.

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