**Assignment No. 2**(Python Basic)

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

Python boolean type is one of the built-in data types provided by Python. Two values of the Boolean data type are true and false. Generally, it is used to represent the truth values of the expressions. For example, 10 == 10 is True whereas 2<1 is False.

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

Boolean operators are used to combine conditional statements.

and, or, not are the three different types of Boolean operators.

and : Returns True if both statements are true.

For Example: x < 5 and x <10

Or : Returns True if one of the statements is true.

For Example: x < 5 or x < 4

Not : Reverse the result, returns False if the result is True .

For Example: not(x < 5 and x <10)

**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 ).**

|  |  |  |
| --- | --- | --- |
| and | | |
| True | True | True |
| True | False | False |
| False | True | False |
| False | False | False |

|  |  |  |
| --- | --- | --- |
| or | | |
| True | True | True |
| True | False | True |
| False | True | True |
| False | False | False |

|  |  |
| --- | --- |
| not | |
| True | False |
| False | True |

**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?**

Comparison operators are used to compare two values.

|  |  |  |
| --- | --- | --- |
| **Comparison Operator** | **Name** | **Example** |
| < | Less than | a < b |
| > | Greater than | a > b |
| <= | Less than or equal to | a <= b |
| >= | Greater than or equal to | a >= b |
| == | Equal to | a == b |
| != | Not equal to | a != b |

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

“==” is a Equal to Operator which is used to check whether the two given operands are equal or not . It compares the value of left and right operand and return True if they are equal otherwise it will return False. So basically it is used when we want to compare two operands.

For Example:

a = 10

b = 10

print(a == b)

Output: True

a = 10

b = 105

print(a == b)

Output: False

“=” is an Assignment Operator which is used to assign the value of variable.

For Example: a = 10, name = “Poorva”

**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')

There are two if blocks and one else block present in this code.

**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 = 0

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?**

An infinite loop occurs when a program keeps executing within one loop, never leaving it. To exit out of infinite loops on the command line, press **CTRL + C** . This will raise a KeyboardInterrupt error that terminates the whole program.

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

In Python, break and continue are loop control statements which are executed inside a loop. These statements either skip according to the conditions inside the loop or terminate the loop execution at some point.

A break statement terminates the loop immediately and transfers execution to the new statement after the loop.

The continue statement terminates only the current iteration of the loop 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)?**

The Python range() function returns a sequence of numbers, between the given range.

The range() function can take a maximum of three arguments.

Syntax: range(start, stop, step)

start: start value of the sequence (optional)

stop: next value after the end value of the sequence

step: integer value, denoting the difference between any two numbers in the sequence (optional)

**range(10) :** If we pass a single argument to range(), it means we are passing the stop argument.

In this case, range() returns a sequence of numbers starting from **0** up to the 10 ( but not including the 10).

**range(0, 10):** If we pass two arguments to range(), it means we are passing start and stop arguments. In this case, range() returns a sequence of numbers starting from 0 up to 10 (but not including the 10).

**range(0, 10, 1)** : If we pass three arguments to range(), it means we are passing start , stop and step  arguments. In this case, range() returns a sequence of numbers starting from 0 up to 10 (but not including the 10).The step argument specifies the incrementation between two numbers in the sequence.

**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.**

for i in range(1, 11):

  print(i)

1

2

3

4

5

6

7

8

9

10

n = 1

while n <= 10:

  print(n)

 n = n + 1

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?**

Dot operator ( . ) is used for calling a function defined inside a module in python language.

Syntax: module\_name.function\_name

print(spam.bacon())