**Assignment 2**

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

--------------- 1. True = A true Boolean value might indicate that the object is valid

2. False = A false Boolean value indicates that the object is invalid

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

--------------- AND (&&), OR (||) and 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 evaluate ).

---------------- in the following table P and Q are the input values

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **P** | **Q** | **AND** | **OR** | **NOT** |
| **T** | **T** | T | T | F |
| **T** | **F** | F | T | T |
| **F** | **T** | F | T | T |
| **F** | **F** | F | F | F |

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?

|  |  |
| --- | --- |
| OPERATORS | NAME |
| == | EQUAL |
| != | NOT EQUAL |
| > | GREATER THAN |
| < | LESS THAN |
| >= | GREATER THAN OR EQUAL TO |
| <= | LESS 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.

------ ‘=’ is an Assignment Operator it is used to assign the value of variable or expression,

For example x=5, char= ‘y’,

While ‘==’ is an Equal to Operator and it is a relation operator used for comparison (to compare value of both left and right side operands)

For example 5==5 this will return true.

7. Identify the three blocks in this code:

spam = 0

if spam == 10:

print('eggs') # indent increased, block A (1st block)

if spam > 5: # still block A

print('bacon') # still block A, indent increased, block B inside block A (2nd block)

else: # still block A, indent decreased, block B ended in line above

print('ham') # still block A, indent increased, block C inside block A (3rd block block)

print('spam') # still block A, indent decreased, block C ended in line above

print('spam') # indent decreased, block A ended in line above

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())

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?

------ Press CTRL-C to stop a program stuck in an infinite loop.

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

--------The ‘continue’ does not stop the continuation of loop and it stops the current. Cannot be executed with switch and the labels. The break is used to terminate the execution of the statements and iteration of the loop. It will move to the next statement after the loop and continue for different purposes.

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

----------- as per problem statement, output wise no such difference is there but syntax wise we can define as following

range (10) --------- syntax of range() function is range(start, stop, step), As we see here the value 10 indicates the stop value for the range function and the 0 value is by default added as the starting value.

range (0, 10) ------- its prints the values from 0–9 because the start value given.

range (0, 10, 1)---- As seen the step is used to increment the numbers, in this case, the step is 1 so the number is incremented by 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.

------ for loop : for i in range(0, 11):

print(i)

while loop : inp = 1

while inp <= 10:

print(inp)

inp += 1

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

-------------- This function can be called with spam.bacon() as follows

from spam import bacon() Or Import spam.bacon() as bc