Python Basics Assignment Number: - 2

1. What are the two values of the Boolean data type? How do you write them?
   Answer: -True and False. In python their ‘T’ and ‘F’ is capital.

2. What are the three different types of Boolean operators?
   Answer: -
   AND operator: - It only returns True if both operands are True else False. In python this is written as keyword ‘and’.
   OR operator: - It returns True if one of the operands is True. In python this is written as keywords ‘or’.
   NOT operator: - It returns the opposite of the operand’s bool value.

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: -
   AND operator -

A	B	A and B
Ture	True	True
False	True	False
True	False	False
False	False	False

   OR operator: -

A	B	A or B
False	False	False
True	False	True
False	True	True
True	True	True

   NOT operator: -

A	not A
True	False
False	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: -
   (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: -
   > (Grater than),
   < (Less than),
   >= (Grater than equal to),
   <= (Less than equal to),
   != (Not equal to),
   == (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: -
   firstName = 'Garv' # this is an example of assignment operator. I am assigning 'Garv' to the firstName variable.
   nickName == fristName # this is an example of an equal to operator. I am setting same nickName as firstName.

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: -
   ## First block
   spam = 0
   ## Second Block
   if spam == 10:
   print('eggs')

   ## Third Block

   if spam > 5:
   print('bacon')
   else:
   print('ham')

   ## These will always execute

   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: -
   ```
   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: - Ctrl + c to stop the execution.

10. How can you tell the difference between break and continue?
    Answer: - If break is in the loop, then whenever the break hit it goes out of the loop. On the other hand, if continue is in the loop, then whenever if continue hit in the loop then our execution will leave that iteration and go to the next iteration of the loop.

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

    There is no difference in the output of these three expressions as they all generate the same sequence of integers from 0 to 9 (inclusive) in steps of 1.

    `range(10)` starts from 0 by default and generates 10 integers.

    `range(0, 10)` starts from 0 explicitly and generates 10 integers.

    `range(0, 10, 1)` starts from 0 explicitly, generates integers up to 10 (excluding 10), and steps 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.
    Answer: -
    ```
    ## With for loop
    for i in range(1, 11):
       print(i)
    ## With 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: - I will call the function by using the syntax "spam.bacon()" after importing the module using "import spam".