# Assignment\_2

1. What are the Boolean data type’s two values? How do you go about writing them?

Ans. Boolean datatype’s 2 values are 0 and 1.

In python we write 1 as **True** and 0 as **False**.

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

Ans. # basic Boolean operators are **AND**, **OR** & **NOT**.

1. 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).

Ans. AND Truth Table :

|  |  |  |
| --- | --- | --- |
| Input |  | Output |
| A | B | Y = A.B |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

OR Truth Table:

|  |  |  |
| --- | --- | --- |
| Input |  | Output |
| A | B | Y = A+B |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

NOT Truth Table :

|  |  |
| --- | --- |
| Input | Output |
| A | B |
| 0 | 1 |
| 1 | 0 |

1. What are the values of the following expressions?

Ans. (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

1. What are the six different types of reference operators?

Ans. The 6 different types of reference operators are :

1. **Arithmetic Operator :** Arithmetic operators are used to perform mathematical operations like addition, subtraction, multiplication, division etc. and the operators are +, -, \*, / etc.
2. **Comparison Operator :** Comparison operators are used to compare values or any two expressions. It returns either True or False according to the condition. Eg. >(greater than), <(less than), ==(equal to), !=(not equal to) etc.
3. **Logical Operator :** These are used for logical operations, This includes AND, OR and NOT operator.
4. **Bitwise Operator :** Bitwise operators act on operands as if they were strings of binary digits. They operate bit by bit, hence the name. Eg. & (Bitwise AND), |(Bitwise OR), >>(Bitwise right shift) etc.
5. **Assignment Operator :** Assignment operators are used in Python to assign values to variables. Eg. =, +=, -=, /= etc.
6. **Special Operator :** Python language offers some special types of operators like the identity operator or the membership operator. They are described below with examples.

Eg. Is, is not.

1. How do you tell the difference between the equal to and assignment operators?

Ans. The equal to (==) is an comparison operator which compares the value of two expressions whether they are equal or not. The assignment operator is for assigning values to a variable.

Eg. a == b means the value of a and the value of b is same. Whereas a = 5 means value 5 is assigned into the variable a.

1. Describe a condition and when you would use one.

Ans. A condition in a program is to check some required parameters whether they satisfy some states for further steps, that helps to filter a list or range of values. As a result it produces True or False according to the condition.

We use a condition with **if else** block such as, condition for filtering the **even numbers**,

If n%2 == 0:

print(n)

1. Recognize the following three blocks in this code:

spam = 0

if spam == 10:

    print('eggs')

    if spam > 5:

        print('bacon')

    else:

        print('ham')

    print('spam')

print('spam')

Ans. This code will only print “spam” once as spam is assigned as 0 at first so it will not go inside the first if block and thus it won’t go inside the other if blocks as well as they are inside the first if statement. So it will only print ‘spam’ which is defined in the last line.

1. Coding is done in notebook.
2. If your programme is stuck in an endless loop, what keys can you press?

Ans. We can press **CTRL+C** to stop the execution of the code.

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

Ans. The break statement breaks out of a loop but the continue statement will skip the execution of the below part of the code and checks the condition of the loop again and continues.

Eg.

for i in range(1, 5):

if i==3:

break

print(i, end=” ”)

i += 1

Output : 1 2

Similarly with continue:

for i in range(1, 5):

if i==3:

continue

print(i, end=” ”)

i += 1

Output : 1 2 4

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

Ans. **range(10)** means the loop will run for 0,1,2,3,4,5,6,7,8,9 excluding the last point i.e 10 the starting point is by default 0.

**range(0, 10)** means the same as range(10) where the starting point is explicitly mentioned.

**range(0, 10, 1)** here the starting point, ending point and the step size is mentioned explicitly. It will also create a sequence from 0 to 9 with step size 1, i.e 0,1,2,3,4,5,6,7,8,9.

1. is done in notebook.
2. If you had a bacon() function within a spam module, what would you call it after importing spam?

Ans. To call bacon function we can use by : spam.bacon()