Class 2 – Python – Operators:

Arithmetical Operators:

In Python Language:

+	Addition
-	Subtraction
*	Multiplication
/	Division/Floating Point Division
//	Integer Division
%	Mode (Remainder)

a/b is called floating point division because if a < b then we will get a float datatype as answer.

Integer Division (//)

It will only give the integer part of the answer. Ex: 13/6 = **2.6** but 13//6 = **2**

In your terminal, write python. It will show '>>>'. This is called REPL. We can solve few problems here.

Ex:

```
>>> 5+6
11
>>> a = 10
>>> b = 10
>>> a + b
30
>>> print(“hi”)
hi
```

% →Mode/Remainder →this gives us remainder

Ex:

```
>>>10 % 4
2
>>> 15 % 3
0
```

Whenever you are using python idle or you type python, in your terminal if python is installed, you will be greeted with REPL.

ODD/EVEN Check:

- Even number leaves remainder ‘0’ when divided by 2 and an odd number leaves a remainder 1.
- For any number, its modulus with 10 would be the last digit of the number; the number in the units’ place.
- For any number n % k, the remainder values will be between [0 – k-1]. Ex:
  - n % 10 → [0 – 9]
  - n % 13 → [0 – 12]
  - n % 11 → [0 – 10]

Boolean Operators:

Operators which will give you either true or false.

1. Equality Operator

Scenario 1

If a = 1, b = 1; then a == b (True)

If a = 2, b = 1; then a = = b (False)

Scenario 2

a = 1, b = 1, c = 2; then a = b + c (False)

Scenario 3

Student1 = rahul
Student2 = Rahul

Student1 == Student2 is False (case sensitive)

Truth Table

Logical conjunction		
p	***q***	***p*** ∧ ***q***
T	T	T
T	F	F
F	T	F
F	F	F

2. Not Equal to Operator

A = 1, b = 2
a != b → True
a == b → False

GATES (AND / OR / NOT**)**

AND

Given;

Weather = sunny
Temp = 28

If weather is sunny **and** temp is 20 → True

- ⇨ if both conditions are true, then it will give you true.
- ⇨ If x & y are Boolean values, then if x is true and y is true, then the result will be true. If either one is false, then the result will be false.

Logical conjunction		
p	***q***	***p*** ∧ ***q***
T	T	T
T	F	F
F	T	F
F	F	F

'p' and 'q' are two conditions.

OR

If any one of the conditions is true then the result will be true.

Ex: 01

(False and True) or (True and False)

➔ False or False

➔ False

Ex: 02

a = 5, b = 7

a == 10//2 and b == 5+2

Logical disjunction		
p	***q***	***p*** ∨ ***q***
T	T	T
T	F	T
F	T	T
F	F	F

'p' and 'q' are two conditions.

NOT

Not false = true & not true = false

! = is not Python Language.

So,

>>> not (True) →False
>>> not (False) → True

NOTE:

The Boolean Operators and, or & not are in small letters and only True and False with T & F as caps.

Es: 03

not (False) and (not True or True)

➔ True and (False or True)
➔True and True
➔True

Ex: 04

a = 5, b = 10

a == 5 or not (b ==10) and True or False

True or not (True) and True or False

True or False

True