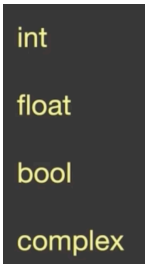
Py

Numeric Data Type

- The numeric data type that are available in python are



- **Integer (int)** is the numeric data Without any decimal point
- It contains both positive and negative numbers
- **Example :**

  a = 125
  b = 2164
  c = -17
  x = 129734864

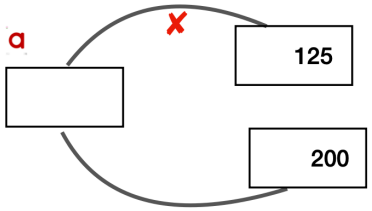
  - In integers there is no size limit or range to an integer value

    x = 12345678901234567890123456789

- Not only integers but there is no fixed size memory taken by any datatype in python
- Suppose you want to know the size of any value then we use sizeof method, see the example below

```
>>> x=12345678901234567890123456789
>>> print(x)
12345678901234567890123456789
>>> y=-17
>>> y
-17
>>> print(x.__sizeof__())
40
>>>
```

- Lets consider an example and see what happen when we take a = 125 and a = 200
- Here the first **a** is the reference to the value 125 and they are available in the memory
- when we change the value of **a** from 125 to 200 then **a** will point to the new object 200
- Here the actual value that is 125 is not changing but a new value is created and now **a** points to this new value
- therefore we can say that values are immutable or it cannot be change



- Now the question is where is 125 in memory? The answer is value 125 will be the garbage collected by PVM (python virtual machine) and it will be gone from the memory

Floating point :

- Any value that is having a decimal point is called floating point humber
- They can also be negative numbers

Example

a = 13.25

b = -17

- Floating point number can also be in scientific manner as well

12.59

0 . 1259 * 100

0 . 1259 * 10^2

0 . 1259E2 # 10^2 - E2 (floating point representation)

- Thus floating point numbers can also be represented in scientific format
- Float datatype is immutable