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## Integer(int data type).

we can use int data type to represent whole number(integral number).

```
a = -100
type(a)
<class 'int'>

b = 100
type(b)
<class 'int'>
```

we can represent int values in----Base conversion

- 1.Decimal form
- 2.Binary form
- 3.Octal form
- 4.Hexa Decimal form

### 1.Decimal form(base-10):-float data type

It is the default number system in python

The allowed digits are :- 0 to 9

```
b = 100
c = float(b)
c
100.0
type(c)
<class 'float'>
```

### 2.Binary form(base-2):-

The allowed digits are :- 0 & 1

literal value should be prefixed with 0b or 0B

int to binary:- bin()

```
b = 100
bin(b)
'0b1100100'
```

### 3. Octal Number():-

---

The allowed digits are 0 to 7

Literal value should be prefixed with 0O or 0o.

int to octal :- oct()

```
b = 100
oct(b)
'0o144'
```

#### 4.Hexa Decimal form(Base:-16)

The allowed digits are 0 to 9 and a-f(both lower and upper case)  
Literal value should be prefixed with 0X or 0x.  
int to hexa :- hex()

```
b = 100
hex(b)
'0x64'
```

#### Float Data type:-

we can use float data type to represent floating point value(decimal values)

```
f = 1.234
type(f)
<class 'float'>
```

#### Exponential form:-

we can also represent floating point value by using exponential form.(scientific notation)

```
f = 1.2e3
f
1200.0
```

The main advantage of exponential form is we can represent big value in less memory.

#### Complex Number:-

A complex number is of the form  $a+bj$

a:- Real number(int + float)

b:- Imaginary number(j is included and j is unsolved value):- int and float

ex:-

```
a = 3+5j
type(a)
<class 'complex'>
```

```
b = -9-7j
type(b)
<class 'complex'>
```

Addition and subtraction of complex number:-

Real only add or sub with another Real number

Imaginary only add or sub with another imaginary number

add:-

```
a = 7+9j
b = 8+7j
```

```
a+b
(15+16j)
```

```
c = -9+8j
d = 8-10j
c+d
(-1-2j)
```

sub:-

```
a = 7+4j
b = 10+9j
```

```
a-b
(-3-5j)
```

#### 4.Boolean(bool):-

we can use this data type to represent boolean values. For only yes or no answer.

The only allowed values for this data type are:- True and False.

Internally Python represents True as 1 and False as 0.

```
True + True
2
True + False
1
False + False
0
```

```
a = True
type(a)
<class 'bool'>

b = False
type(b)
<class 'bool'>
```

```
s = ['a',889,'b',989]
1 in s
False
'b' in s
True
```

## String(str):-

str represent String Data type.

A string is sequence of any keyboard letter enclosed within single or double or triple quotes.

```
a = ""
type(a)
<class 'str'>

b = '()'
type(b)
<class 'str'>

c = '!@()-=*^%%WE^bsancbnmsabcj,sbcj'
type(c)
<class 'str'>

d = ""
type(d)
<class 'str'>

e = "hasjhcgusayhcy78q27ei2he27180eyhjdbajkcgasuiyc9dqw"
type(e)
<class 'str'>
```

## Triple Quotes(Multiple Quotes):-

By using single quote or double quote we cannot represent multiple lines string literals.

### Function:-

```
def add(a,b):
''' This function is using for addition purpose '''
c = a+b
return c
```

### class:-

```
class AdlofHitler(self):
''' This class was written for Germani Chansellor Adlof Hitler '''
```

```
def j_hkwj_kl_bwj_bd():
    evknekv
```

## Types of Triple quotes:-

There are 2 types of triple quote are present in python

- 1.Single Triple quote :- ''' '''
- 2.Double Triple quote :- """ """

Note1:- When we can use in a worksheet a single Triple Quote,We can use in the whole Worksheet same things and for double triple quote follow the same rule.

Note2:- When we can use in variable store string data so here we can start with single quote then we can use in the whole worksheet same things, and for double quote follow the same rule.

### **Exception:-**

s = 'how's this'-----wrong

s = "how's this"-----right

### **Casing:-**

#### **Camel Casing:-**

We can write this casing using upper and lower case and here we start any word first as a uppercase and everything lower case,also here not using any whitespces.

Ex:- StateBankOfIndia

Use area:- FloderName,ClassName

#### **Sanke Casing:-**

we can write this casing using only lower case and here we can not use any whitespece ,only allowed underscore(\_) coz of word relation mapping.

ex:- state\_bank\_india

Use area:- file\_name,function\_name