Python Basics: ¶

Data Types:

- Int
- Float
- String
- Complex

Integers in Static Format

In [3]:
```
# For commenting and uncommenting a line or no of \
# statements use "ctrl + /"

a = 34500999787876
b = 435345
# print(a)
# print(b)
print("a type is: ",type(a))
print("b type is: ",type(b))
```

```
a type is:  <class 'int'>
b type is:  <class 'int'>
```

Float in Static Format

In [9]:
```
n = 234.500979867
print(n)
print("n type is: ",type(n))
```

```
234.500979867
n type is:  <class 'float'>
```

String in Static Format

In [11]:
```
name = "rajesh"
print(name)
print("name type is: ",type(name))
```

```
rajesh
name type is:  <class 'str'>
```

Dynamic Way of inputs

- Dynamic Processing of input we have to use input()
- In input() all given values are in string format

Typecasting

- int() -> Changes to integer when the values are in string format
- float() -> Changes to float when the values are in string format
- str() -> Changes to string when the given values are in either integer or float

Integer in Dynamic

In [18]:
```
n = int(input("Enter a number: "))
print(n)
print(type(n))
```

```
Enter a number: 234234
234234
<class 'int'>
```

Float in Dynamic

In [19]:
```
n = float(input("Enter a number: "))
print(n)
print(type(n))
```

```
Enter a number: 34534.657456345
34534.657456345
<class 'float'>
```

String in Dynamic

In [22]:
```
s = str(input("Enter a string: "))
print(s)
print(type(s))
```

```
Enter a string: 234.827349876
234.827349876
<class 'str'>
```

In [26]:
```
m = input("Enter a value: ")
print(m)
print(type(m))
```

```
Enter a value: '234.345345345'
'234.345345345'
<class 'str'>
```

Variable Value assignments

Different Values for Different Variables

In [36]:
```
a,b,d = '10',30.345,'rajesh'
print("Value of a is: ",a," and type is: ",type(a))
print("Value of b is: ",b," and type is: ",type(b))
print("Value of d is: ",d," and type is: ",type(d))
```

```
Value of a is:  10  and type is:  <class 'str'>
Value of b is:  30.345  and type is:  <class 'float'>
Value of d is:  rajesh  and type is:  <class 'str'>
```

Single Value to different Variables

In [37]:
```
a = b = g = j = 40
print(a,b,g,j)
```

```
40 40 40 40
```

Operators:

Arithmatic operators :

- +, -, /, *, //, ** and %

In [52]:
```
5%3
```

Out[52]: 2

Logical operators

- and, or, not

In [57]:
```
a=5
print(a>3 and a>4)
print(a>3 or a<4)
print(a<3 and a>4)
```

```
True
True
False
```

In [55]:
```
print(a>3 or a<4)
```

```
True
```

Comparision operators

- `==` , `<=` , `>=` and `!=``

Assignment operators

- `=` , `+=` , `*=` , `-=` , `/=` and `%=`

In [61]:
```
a=0
a
```

Out[61]: 0

In [62]:
```
a+=1 ## a=a+1
a
```

Out[62]: 1

In [64]:
```
a*=1 ## a=a*1
a
```

Out[64]: 1

In [67]:
```
a-= 1
a
```

Out[67]: 2

In [69]:
```
b=6
b%=2
b
```

Out[69]: 0

In [70]:
```
a
```

Out[70]: 2

In [73]:
```
b=0
b+=1
print(b)
```

1

In [75]:
```
print(b)
b+=1
print(b)
```

2
3

In [76]:
```
print(b)
b-=-1
print(b)
```

3
4

In [79]:
```
a = 1
```

In [81]:
```
print(a)
a+=1
print(a)
```

2
3

Bitwise opeartor

- & , | , ^ , >> and <<

In [ ]:
```
1 1 => 1 ### And (&)

or

0 0 => 0 ### Or (|)

XOR  ### ( ^ )

1 0 => 1
0 1 => 1
```

In [91]:
```
print(7 ^ 2)
```

```
5
```

In [92]:
```
print(10 >> 2)
```

```
2
```

In [93]:
```
print(10 << 2)
```

```
40
```

Membership opeartors (in , not in)

Identity operators (is , is not)

In [ ]:
```
Enter a value: 11
Enter b value: 12
value of 11 and 12 by using and operator is: ?
value of 11 and 12 by using or operator is: ?
value of 11 and 12 by using xor operator is: ?

Enter a value: 13
Enter b value: 14
value of 13 and 14 by using and operator is: ?
value of 13 and 14 by using or operator is: ?
value of 13 and 14 by using xor operator is: ?
```

In [99]:
```
n = int(input("Enter a value: "))
m = int(input("Enter b value: "))
print("Addition of %d and %d is: %d"%(m,n,n+m))
print("Addition of {} and {} is: {}".format(n,m,n+m))
print("{2} by adding {0} and {1}".format(n,m,n+m))
```

```
Enter a value: 2
Enter b value: 3
Addition of 3 and 2 is: 5
Addition of 2 and 3 is: 5
5 by adding 2 and 3
```

In [104]:
```
a = int(input("Enter a value: "))
b = int(input("Enter b value: "))
print("Value of {} and {} by using and operator is: {}".format(a,b,a&b))
print("Value of {} and {} by using or operator is: {}".format(a,b,a|b))
print("Value of {} and {} by using xor operator is: {}".format(a,b,a^b))
print("Value of {} and {} by using logical and operator is: {}".format(a,b,a
print("Value of {} and {} by using logical or operator is: {}".format(a,b,a
print("Value of {} and {} by using Right shift is:{}".format(a,b,a>>b))
print("Value of {} and {} by using Left shift is:{}".format(a,b,a<<b))
```

```
Enter a value: 2
Enter b value: 3
Value of 2 and 3 by using and operator is: 2
Value of 2 and 3 by using or operator is: 3
Value of 2 and 3 by using xor operator is: 1
Value of 2 and 3 by using logical and operator is: 3
Value of 2 and 3 by using logical or operator is: 2
Value of 2 and 3 by using Right shift is:0
Value of 2 and 3 by using Left shift is:16
```

In [105]:
```
a,b = True,False
print(a,b)
```

```
True False
```

In [108]:
```
x=True
print(not(x))
```

```
False
```

In [110]:
```
a=0
print(not(a))
```

```
True
```

In [112]:
```
a=2
print(type(a) is not int)
```

```
False
```

In [114]:
```
# 12 = -(12+1)
# -13= -(-13+1)
```

In [115]:
```
print(~(14))
```

```
-15
```

In [116]:
```
print(~(-14))
```

```
13
```

In [ ]:
```
1
```