Data Types and Conversions

1. int
2. float
3. string

In [3]:

```
n1 = 13
print("n1 =",n1)
type(n1)
```

```
n1 = 13
```

Out[3]:

```
int
```

In [4]:

```
n2 = 13.678
print("n2 =",n2)
type(n2)
```

```
n2 = 13.678
```

Out[4]:

```
float
```

In [6]:

```
a = 'spmvv'
print(a)
type(a)
```

```
spmvv
```

Out[6]:

```
str
```

In [11]:

```
n = 13.245
m = 16
print("n =",n)
print(type(n))
print("m =",m)
type(m)
```

```
n = 13.245
<class 'float'>
m = 16
```

Out[11]:

```
int
```

In [14]:

```
n = 67
print(type(n))
print(type(str(n)))
```

```
<class 'int'>
<class 'str'>
```

In [19]:

```
n1 = 56
s = str(n1)
print(type(s))
```

```
<class 'str'>
```

In [20]:

```
n1 = '16'
n2 = '67'
print(n1+n2)
```

```
1667
```

In [21]:

```
s1 = 'PASAM'
s2 = 'SIRISHA'
print(s1+s2)
```

```
PASAMSIRISHA
```

In [22]:

```
n1 = 10
n2 = 90
print(n1+n2)
```

```
100
```

In [23]:

```
n1 = 45.8
n2 = 65.98
print(n1+n2)
```

```
111.78
```

Indentation

In [36]:

```
n1,n2 = 30,50
if(n1>n2):
    print("n1 greater than n2")
else:
    print("n1 less  than n2")
```

```
n1 less  than n2
```

Reading Input Dynamically

In [39]:

```
x = input() # default str data type is taken
print(x)
print(type(x))
```

```
567
567
<class 'str'>
```

In [43]:

```
a = int(input()) # By using 'int' we can print integer data type
print(a)
print(type(a))
```

```
3456
3456
<class 'int'>
```

In [56]:

```
a = 124
print(type(a))
f = float(a)
print(type(f))
print("a =",+a)
print("f =",+f)
```

```
<class 'int'>
<class 'float'>
a = 124
f = 124.0
```

In [60]:

```
a = float(input("enter a value = ")) # By using 'float' we can print float data type
print(a)
print(type(a))
```

```
enter a value = 459.89
459.89
<class 'float'>
```

Operators

1. Arithmetic operators
2. Assignment operators
3. Comparision operators
4. Logical operators
5. Identity operators
6. Membership operators
7. Bitwise operators

1. Arithmetic operators

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

In [64]:

```
a,b = 15,7
print("a+b =",15+7)
print("a-b = ",15-7)
print("a*b = ",15*7)
print("a/b = ",15/7)
print("a%b =",15%7)
print("a//b ",15//7) # Floor division takes integer part
print("a**b = ",15**7)
```

```
a+b = 22
a-b =  8
a*b =  105
a/b =  2.142857142857143
a%b = 1
a//b  2
a**b =  170859375
```

2. Assignment operators

- =,+=,-=,*=,etc

In [67]:

```
a += 2 # a=a+2
print(a)
```

```
47
```

In [68]:

```
a = 20
a += 3 # a=a+3
print(a)
```

```
23
```

In [69]:

```
a -= 2 # a=a-2
print(a)
```

```
21
```

In [71]:

```
a *= 2  # a=a*2
print(a)
```

```
42
```

In [72]:

```
a /= 2 # a=a/2
print(a)
```

```
21.0
```

In [73]:

```
a %= 2 # a=a%2
print(a)
```

```
1.0
```

3. Comparision operators

- <,>,<=,>=,==,!=

In [80]:

```
n1,n2 = 5,7
print(n1<n2)
print(n1 != n2)
print(n1>n2)
print(n1==n2)
```

```
True
True
False
False
```

4. Logical operators

- and,or,not

In [89]:

```
a = 5
print(a<6 and a>2) # and logic gate i.e, 00-0,01-0,10-0,11-1
print(a<6 or a<2) # or logic gate i.e, 00-0,01-1,10-1,11-1
print(a<7 and a<3)
s = a<6 and a>2
print(not(s))
```

```
True
True
False
False
```

5. Identity operators

- is,is not

In [90]:

```
x,y = 5,3
print(x is y)
```

```
False
```

In [91]:

```
print(x is not y)
```

```
True
```

In [93]:

```
a,b =3,3
print(a is b)
print(a is not b)
```

```
True
False
```

6. Membership operators

- in,not in

In [97]:

```
vegetables = ["potato","tomato","egg"]
print('potato' in vegetables)
print('potato' not in vegetables)
print('onion' in vegetables)
print('onion' not in vegetables)
```

```
True
False
False
True
```

7. Bitwise operators

- &,|,^,>>,<<,~

In [104]:

```
a = int(input("enter a value = "))
b = int(input("enter b value = "))
a & b
```

```
enter a value = 3
enter b value = 2
```

Out[104]:

```
2
```

In [105]:

```
a = 3
b = 2
a | b
```

Out[105]:

```
3
```

In [106]:

```
a = 3
b = 2
a ^ b
```

Out[106]:

```
1
```

In [107]:

```
a = 3
b = 2
a >> b
```

Out[107]:

```
0
```

In [108]:

```
~a
```

Out[108]:

```
-4
```

In [109]:

```
~b
```

Out[109]:

```
-3
```

In [110]:

```
a = 3
print(~a)
```

```
-4
```

In [111]:

```
a << b
```

Out[111]:

```
12
```

In [112]:

```
print(0.1*3 == 0.3)
print(0.1*5 == 0.5)
print(0.1*7 == 0.7)
print(0.1*9 == 0.9)
```

```
False
True
False
True
```

In [114]:

```
a = float(input("enter a value"))
b = 3
print(a*b)
```

```
enter a value0.1
0.30000000000000004
```

In [ ]:

```

```