WORK WITH PYTHON NUMBERS

In [1]:
```
5
```

Out[1]: 5

In [2]:
```
5+5
```

Out[2]: 10

In [3]:
```
-5-5
```

Out[3]: -10

In [4]:
```
5+6-7*3-7
```

Out[4]: -17

In [5]:
```
5+6-7*(3-7)
```

Out[5]: 39

In [6]:
```
_
```

Out[6]: 39

In [7]:
```
_+1
```

Out[7]: 40

In [8]:
```
_=4
```

In [9]:
```
_-4
```

Out[9]: 0

In [10]:
```
a=3
b=4
```

In [11]:
```
int.__add__(a,b)
```

Out[11]: 7

In [12]:
```
a=3
b=4
```

In [13]:
```
int.__sub__(a,b)
```

Out[13]: -1

In [14]:
```
c=suunitha
d=venu
```

```
int.__add__(c,d)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[14], line 1
----> 1 c=suunitha
      2 d=venu
      3 int.__add__(c,d)

NameError: name 'suunitha' is not defined
```

In [ ]:
```
str.__add__(c,d)
```

In [ ]:
```

```

works with text

In [ ]:
```
Naresh IT
```

In [ ]:
```
'Naresh IT'
```

In [ ]:
```
"Naresh IT"
```

In [ ]:
```
'''Naresh IT'''
```

In [ ]:
```
'Naresh
    Technology.
```

In [ ]:
```
"Naresh
   Technology"
```

In [ ]:
```
'''Naresh
    Technology'''
```

In [ ]:
```

```

In [ ]:
```

```

28th varibles

In [ ]:
```
v=10
v
```

In [ ]:
```
id(v)
```

In [ ]:
```

```

In [ ]:
```
nit=8
NIT
```

In [ ]:
```

```

In [ ]:
```
8=nit
```

In [ ]:
```

```

In [ ]:
```
8nit=10
```

In [ ]:
```

```

In [ ]:
```
nit8=20
nit8
```

In [ ]:
```

```

In [ ]:
```
nit$=50
nit$
```

In [ ]:
```

```

In [ ]:
```
nit_=78
nit_
```

In [ ]:
```

```

In [ ]:
```
import keyword
keyword.kwlist
```

In [ ]:
```

```

In [ ]:
```
def=50
def
```

In [ ]:
```

```

In [ ]:
```
DEF=60
DEF
```

In [ ]:
```

```

In [ ]:
```
3+4
```

In [ ]:
```
3=4
4=5
```

In [ ]:
```
3+4
4+5
```

In [ ]:
```

```

In [ ]:
```
3+4
4+5
5+6
```

In [ ]:

In [ ]:
```
print(3+4)
print(4+5)
print(5+6)
```

In [ ]:

In [ ]:

1st Python datatypes

In [ ]:
```
i=100
i
```

In [ ]:
```
type(i)
```

In [ ]:

In [ ]:

In [ ]:
```
j=200.56
j
```

In [ ]:
```
type(j)
```

In [ ]:

In [ ]:
```
f1=1e0
f1
```

In [ ]:
```
f2=1e1
f2
```

In [ ]:
```
f3=1e2
f3
```

In [ ]:
```
f4=2e3
f4
```

In [ ]:

In [ ]:
```
import keyword
keyword.kwlist
```

In [ ]:

In [ ]:
```
b = True
b
```

In [ ]:
```
b = True
b1 = False
```

```
b + b1
```

In [ ]:
```
print(b+b1)
print(b-b1)
print(b*b1)
```

In [ ]:
```
False /True
```

In [ ]:
```
c=False
c
```

In [ ]:
```
print(True)
```

In [ ]:

In [ ]:
```
False/True
```

In [ ]:
```
False//True
```

In [ ]:
```
True/False
```

In [ ]:

complex

In [ ]:
```
c=10+20j
c
```

In [ ]:
```
type(c)
```

In [ ]:

In [ ]:
```
c.real
```

In [ ]:
```
c.imag
```

In [ ]:
```
False+True
```

In [ ]:

In [ ]:
```
c1=10+20.3j
c1
```

In [ ]:
```
c2=30+53.8
c2
```

In [ ]:
```
c1+c2
```

In [ ]:

string

In [ ]:
```
name='sunitha'
name
```

In [ ]:
```
type(name)
```

In [ ]:
```

```

In [ ]:
```
name[1]
```

In [ ]:
```
name[0]
```

In [ ]:
```
name[-1:0]
```

In [ ]:
```
name[0:-1]
```

In [ ]:
```
name[1:-1]
```

In [ ]:
```
name[10]
```

In [ ]:
```
name[-10]
```

In [ ]:
```
name[:]
```

In [ ]:
```
name[2:]
```

In [ ]:
```
name[:-1]
```

In [ ]:
```
name[:5]
```

In [ ]:
```

```

In [ ]:
```
name
```

In [ ]:
```
name[1:-2:3]
```

In [ ]:
```

```

backward index

In [ ]:
```
name[-1]
```

In [ ]:
```
name[-2:]
```

In [ ]:
```
name[-2:0]
```

In [ ]:
```
name[-2:-1]
```

In [ ]:

In [ ]:
```
movie = '''Hero: Yash (as Rocky)
Heroine: Srinidhi Shetty
Villain: Garuda
Music: Ravi Basrur

Story in short:

Rocky, born in poverty, grows up to become a powerful gangster in Mumbai.
\He is sent to assassinate Garuda, the ruthless ruler of the Kolar Gold Fields.
The film ends with Rocky killing Garuda, setting the stage for Chapter 2.'''
```

In [ ]:
```
movie
```

In [ ]:

In [ ]:

2nd python typecasting

convert all datatypes to int except complelx and text string

In [ ]:
```
int(100.5)
```

In [ ]:
```
int(100.9)
```

In [ ]:

In [ ]:
```
int(True)
```

In [ ]:
```
int(False)
```

In [ ]:

In [ ]:
```
int(10+20j)
```

In [ ]:

In [ ]:
```
int("10")
```

In [ ]:
```
int("ten")
```

In [ ]:

cast other datatypes to float

In [ ]:
```
float(25)
```

In [ ]:
```
float(25,39)
```

In [ ]:

In [ ]:
```
float(10+20j)
```

In [ ]:

In [ ]:
```
float("10")
```

In [ ]:
```
float("ten")
```

In [ ]:

cast other datatypes to complex

In [ ]:
```
complex(10)
```

In [ ]:
```
complex(20,10)
```

In [ ]:
```
complex(20,10,5)
```

In [ ]:

In [ ]:
```
complex(2.9)
```

In [ ]:

In [ ]:
```
complex(2.0+37.8)
```

In [ ]:
```
complex(True,False)
```

In [ ]:
```
complex(False,True)
```

In [ ]:

In [ ]:
```
complex('10','20')
```

In [ ]:

In [ ]:
```
complex("10",20)
```

In [ ]:

In [ ]:
```
complex("10")
```

In [ ]:
```
complex(20,'10')
```

In [ ]:

In [ ]:
```
complex('ten')
```

In [ ]:

cast other datatypes to boolean

In [ ]:
```
bool()
```

In [ ]:
```
bool(10)
```

In [ ]:
```
bool(9.8)
```

In [ ]:
```
bool(0)
```

In [ ]:
```
bool(10+20j)
```

In [ ]:
```
bool("sunitha")
```

In [ ]:

In [ ]:
```
print(10) # 1 arg
print(10,20) # 2 arg
print('python') # string arg
print(10,20,'python') # 3 arg
```

In [ ]:

In [ ]:
```
num1=10
num2=20
add=num1+num2
print('The addition of', num1, 'and', num2, 'is:', add)
```

In [ ]:

In [ ]:
```
num1,num2, num3=10,20,30
add=num1+num2+num3
print('The addition of {} and {} and {} is {}'.format(num1,num2,num3,add))
```

In [ ]:
```
print(f'The addition of {num1} and{num2} and {num3} is {add}')
```

In [ ]:

In [ ]:
```
print('hello')
print('good morning')
```

In [ ]:

In [ ]:
```
print('hello',end='_')
print('good morning')
```

In [ ]:

In [ ]:
```
print('*')
print('**',end="")
print('****')
```

In [ ]:

In [ ]:
```
print('hello','hai','how are you',sep='--->')
```

In [ ]:
```
print('hello','hai','how are you',sep='$-$')
```

In [ ]:

3rd python datastructure

In [ ]:
```
l =[]
l
```

In [ ]:
```
type(l)
```

In [ ]:
```
len(l)
```

In [ ]:
```
l
```

In [ ]:
```
l.append(10)
l
```

In [ ]:

In [ ]:
```
l.append(20)
l.append(30)
l.append(40)
```

In [ ]:
```
l
```

In [ ]:
```
l2=l.copy()
l2
```

In [ ]:

In [ ]:
```
print(l)
print(l2)
```

In [ ]:

In [ ]:
```
l.append(20.3, 'hi', 20+10j, True)
```

In [ ]:

In [ ]:
```
l.append(20.3)
l.append('hi')
l.append(20+10j)
l.append(True)
```

In [ ]:
```
l
```

In [ ]:
```
 print(l)
print(l2)
```

In [ ]:
```

```

In [ ]:
```
l2.clear()
```

In [ ]:
```
l2
```

In [ ]:
```
del l2
```

In [ ]:
```
l2
```

In [ ]:
```
l
```

In [ ]:
```
l.count(10)
```

In [ ]:
```
l.count(20)
```

In [ ]:
```
l[:]
```

In [ ]:
```
l[1:]
```

In [ ]:
```
l[5:]
```

In [ ]:
```
l[:-3]
```

In [ ]:
```

```

In [ ]:
```
l[::-2]
```

In [ ]:
```
l.index('hi')
```

In [ ]:
```
l[8]
```

In [ ]:
```

```

In [ ]:
```
l
```

In [ ]:
```
l[::-2]
```

In [ ]:
```
l[::2]
```

In [ ]:
```

```

In [ ]:
```
l[3:14:7]
```

In [ ]:
```

```

9th list

In [6]:
```
l=[10,20,30,50,390,230]
l
```

Out[6]: [10, 20, 30, 50, 390, 230]

In [7]:
```
l2=['sunitha', 'venu', 'rushik','moksha']
l2
```

Out[7]: ['sunitha', 'venu', 'rushik', 'moksha']

In [ ]:
```

```

In [8]:
```
l.append(101)
```

In [9]:
```
l
```

Out[9]: [10, 20, 30, 50, 390, 230, 101]

In [10]:
```
l[1]
```

Out[10]: 20

In [11]:
```
l[2]=202
l
```

Out[11]: [10, 20, 202, 50, 390, 230, 101]

In [13]:
```
l2[-1]=1000
l2
```

Out[13]: ['sunitha', 'venu', 'rushik', 1000]

In [ ]:
```

```

In [14]:
```
l3=[]
l3
```

Out[14]: []

In [15]:
```
l3.extend(l2)
l3
```

Out[15]: ['sunitha', 'venu', 'rushik', 1000]

In [16]:
```
l2
```

Out[16]: ['sunitha', 'venu', 'rushik', 1000]

In [18]:
```
l3.extend(l)
l3
```

Out[18]: ['sunitha', 'venu', 'rushik', 1000, 10, 20, 202, 50, 390, 230, 101]

In [19]:
```
l1=[]
l1
```

Out[19]: []

In [ ]:

In [21]:
```
l1=l.copy()
```

In [22]:
```
l1
```

Out[22]: [10, 20, 202, 50, 390, 230, 101]

In [23]:
```
l1=l2.copy()
l1
```

Out[23]: ['sunitha', 'venu', 'rushik', 1000]

In [ ]:

In [24]:
```
print(l)
print(l2)
print(l3)
```

```
[10, 20, 202, 50, 390, 230, 101]
['sunitha', 'venu', 'rushik', 1000]
['sunitha', 'venu', 'rushik', 1000, 10, 20, 202, 50, 390, 230, 101]
```

In [25]:
```
print(l1)
```

```
['sunitha', 'venu', 'rushik', 1000]
```

In [ ]:

In [27]:
```
l1.index('sunitha')
```

Out[27]: 0

In [ ]:

In [29]:
```
l1.insert(2,'deepu')
```

In [30]:
```
l1
```

Out[30]: ['sunitha', 'venu', 'deepu', 'rushik', 1000]

In [31]:
```
l
```

Out[31]: [10, 20, 202, 50, 390, 230, 101]

In [32]:
```
l.insert(0,0)
```

In [33]:
```
l
```

Out[33]: [0, 10, 20, 202, 50, 390, 230, 101]

In [ ]:

In [36]:
```
for i in l:
 print(i)
```

```
0
10
20
202
50
390
230
101
```

In [ ]:

In [38]:
```
for i in enumerate(l):
 print(i)
```

```
(0, 0)
(1, 10)
(2, 20)
(3, 202)
(4, 50)
(5, 390)
(6, 230)
(7, 101)
```

In [ ]:

In [39]:
```
my_list = ['apple', 'banana', 'cherry']

# Using enumerate with default start (0)
for index, item in enumerate(my_list):
    print(f"Index: {index}, Item: {item}")

# Using enumerate with a custom start (1)
for index, item in enumerate(my_list, start=1):
    print(f"Position: {index}, Fruit: {item}")
```

```
Index: 0, Item: apple
Index: 1, Item: banana
Index: 2, Item: cherry
Position: 1, Fruit: apple
Position: 2, Fruit: banana
Position: 3, Fruit: cherry
```

In [ ]:

In [40]:
```
l
```

Out[40]: [0, 10, 20, 202, 50, 390, 230, 101]

In [41]:
```
l.pop()
```

Out[41]: 101

In [42]:
```
l
```

Out[42]: [0, 10, 20, 202, 50, 390, 230]

In [43]:
```
l.pop(1)
l
```

Out[43]: [0, 20, 202, 50, 390, 230]

In [ ]:

In [44]:
```
del[l[2]]
```

In [45]:
```
l
```

Out[45]: [0, 20, 50, 390, 230]

In [46]:
```
l.remove(390)
```

In [47]:
```
l
```

Out[47]: [0, 20, 50, 230]

In [48]:
```
l1
```

Out[48]: ['sunitha', 'venu', 'deepu', 'rushik', 1000]

In [49]:
```
l1.reverse()
```

In [50]:
```
l1
```

Out[50]: [1000, 'rushik', 'deepu', 'venu', 'sunitha']

In [51]:
```
l1[::-1]
l1
```

Out[51]: [1000, 'rushik', 'deepu', 'venu', 'sunitha']

In [52]:
```
l1.sort()
l1
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[52], line 1
----> 1 l1.sort()
      2 l1

TypeError: '<' not supported between instances of 'str' and 'int'
```

In [53]:
```
l1.remove(1000)
```

In [54]:
```
l1
```

Out[54]: ['rushik', 'deepu', 'venu', 'sunitha']

In [55]:
```
l1.sort()
l1
```

Out[55]: ['deepu', 'rushik', 'sunitha', 'venu']

In [ ]:

In [56]:
```
l2
```

Out[56]: ['sunitha', 'venu', 'rushik', 1000]

In [57]:
```
l3
```

Out[57]: ['sunitha', 'venu', 'rushik', 1000, 10, 20, 202, 50, 390, 230, 101]

In [58]:
```
l1
```

Out[58]: ['deepu', 'rushik', 'sunitha', 'venu']

In [59]:
```
l
```

Out[59]: [0, 20, 50, 230]

In [61]:
```
l4=['m','l', 'M','d']
l4
```

Out[61]: ['m', 'l', 'M', 'd']

In [62]:
```
l4.sort()
l4
```

Out[62]: ['M', 'd', 'l', 'm']

In [63]:
```
l5=[34,24,456,342]
l5
```

Out[63]: [34, 24, 456, 342]

In [64]:
```
l5.sort(reverse=True)
l5
```

Out[64]: [456, 342, 34, 24]

In [ ]:

In [65]:
```
l5
```

Out[65]: [456, 342, 34, 24]

In [66]:
```
200 in l5
```

Out[66]: False

In [ ]:

In [67]:
```
all(l5)
```

Out[67]: True

In [68]:
```
any(l5)
```

Out[68]: True

In [69]:
```
l5.append(0)
l5
```

Out[69]: [456, 342, 34, 24, 0]

In [70]:
```
all(l5)
```

Out[70]: False

In [71]:
```
any(l5)
```

Out[71]: True

In [72]:
```
l5.remove(0)
l5
```

Out[72]: [456, 342, 34, 24]

In [73]:
```
any(l5)
```

Out[73]: True

In [74]:
```
l5.clear()
l5
```

Out[74]: []

In [75]:
```
any(l5)
```

Out[75]: False

In [ ]:

Tuple

In [76]:
```
t=()
```

In [77]:
```
t
```

Out[77]: ()

In [78]:
```
type(t)
```

Out[78]: tuple

In [79]:
```
t=(10,20,30)
t
```

Out[79]: (10, 20, 30)

In [80]:
```
t.remove(30)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[80], line 1
----> 1 t.remove(30)

AttributeError: 'tuple' object has no attribute 'remove'
```

In [82]:
```
t.count(10)
```

Out[82]: 1

In [83]:
```
t.count(2)
```

Out[83]: 0

In [84]:
```
t[::]
```

Out[84]: (10, 20, 30)

In [86]:
```
t[:2]
```

Out[86]: (10, 20)

In [88]:
```
t.index(2)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[88], line 1
----> 1 t.index(2)

ValueError: tuple.index(x): x not in tuple
```

In [89]:
```
t
```

Out[89]: (10, 20, 30)

In [90]:
```
t.index(10)
```

Out[90]: 0

In [92]:
```
t.index(20)
```

Out[92]: 1

In [93]:
```
t.count(30)
```

Out[93]: 1

In [ ]:

In [94]:
```
for i in t:
    print(i)
```

```
10
20
30
```

In [97]:
```
for i in enumerate(t):
    print(i)
```

```
(0, 10)
(1, 20)
(2, 30)
```

In [ ]:

In [98]:
```
t1= ([1,2,3,], 3, True, 1+2j, 'hi')
t1
```

Out[98]:
```
([1, 2, 3], 3, True, (1+2j), 'hi')
```

In [ ]: