typecasting, string slicing, string indexing, operators, data structure

```
In [2]:  1+1 #addition
```

```
Out[2]:  2
```

```
In [3]:  1-1 #substraction
```

```
Out[3]:  0
```

```
In [4]:  2*5 #multiplication
```

```
Out[4]:  10
```

```
In [5]:  9/3 #floatdivision
```

```
Out[5]:  3.0
```

```
In [6]:  15//5 #floor division
```

```
Out[6]:  3
```

```
In [7]:  3+(4*5)-2 #bodmas
```

```
Out[7]:  21
```

```
In [8]:  2*2*2*2*2 #exponential
```

```
Out[8]:  32
```

```
In [15]:  10%2 #modulous
```

```
Out[15]:  0
```

```
In [16]:  a,b,c,d,e=10,3.14,'nit',2+3j,True
          print(a)
          print(b)
          print(c)
          print(d)
          print(e)
```

```
10
3.14
nit
(2+3j)
True
```

```
In [17]:  print(type(a))
          print(type(b))
          print(type(c))
          print(type(d))
          print(type(e))
          <class 'int'>
          <class 'float'>
          <class 'str'>
          <class 'complex'>
          <class 'bool'>

In [18]:  'data science'

Out[18]:  'data science'

In [19]:  print('data science')

          data science

In [20]:  print('data','science')

          data science

In [21]:  'nit'+'nit'

Out[21]:  'nitnit'

In [25]:  3*'nit'

Out[25]:  'nitnitnit'

In [26]:  a=5
          a

Out[26]:  5

In [27]:  a+5

Out[27]:  10

In [29]:  b=2
          b

Out[29]:  2

In [35]:  a+b

Out[35]:  7

In [36]:  _+b

Out[36]:  9

In [38]:  _=5
          b=4
          result=_+b
          result

Out[38]:  9

In [40]:  name='sankar'
          name
```

```
Out[40]:  'sankar'
```

```
In [41]:  name=name+'sankar'
          len(name)
```

```
Out[41]:  12
```

```
In [43]:  name[2]
```

```
Out[43]:  'n'
```

```
In [44]:  name[:2]
```

```
Out[44]:  'sa'
```

```
In [45]:  name[2:3:2]
```

```
Out[45]:  'n'
```

```
In [46]:  name[14]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[46], line 1
----> 1 name[14]

IndexError: string index out of range
```

List

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

```
In [49]:  num=[10,20,30]
          num
```

```
Out[49]:  [10, 20, 30]
```

```
In [50]:  num[2]
```

```
Out[50]:  30
```

```
In [4]:  num2=['hii',23,35.8,True,]
         num2
```

```
Out[4]:  ['hii', 23, 35.8, True]
```

```
In [10]:  num=[10,20,30]
          num
```

```
Out[10]:  [10, 20, 30]
```

```
In [11]:  num.pop()
```

```
Out[11]:  30
```

```
In [12]: num
```

```
Out[12]: [10, 20]
```

```
In [13]: num.append(30)
         num.append(40)
         num
```

```
Out[13]: [10, 20, 30, 40]
```

```
In [14]: num.insert(0,1)
```

```
In [15]: num
```

```
Out[15]: [1, 10, 20, 30, 40]
```

```
In [16]: del num[2:]
```

```
In [17]: num
```

```
Out[17]: [1, 10]
```

```
In [18]: num.extend([15,20,25])
         num
```

```
Out[18]: [1, 10, 15, 20, 25]
```

```
In [19]: num2=[1,2,3,4,5,6]
         num2
```

```
Out[19]: [1, 2, 3, 4, 5, 6]
```

```
In [20]: min(num2)
```

```
Out[20]: 1
```

```
In [25]: max(num2)
```

```
Out[25]: 6
```

```
In [23]: sum(num2)
```

```
Out[23]: 21
```

```
In [27]: num2.sort(reverse=True)
```

```
In [28]: num2
```

```
Out[28]: [6, 5, 4, 3, 2, 1]
```

```
In [30]: l=[1,2,3]
         l
```

```
Out[30]: [1, 2, 3]
```

```
In [31]: l[0]
         l
```

```
Out[31]: [1, 2, 3]
```

```
In [32]: l[0]
```

```
Out[32]: 1
```

Tuple

```
In [33]: t=(15,25,36)
         t
```

```
Out[33]: (15, 25, 36)
```

```
In [34]: t[0]
```

```
Out[34]: 15
```

```
In [35]: t[10]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[35], line 1
----> 1 t[10]

IndexError: tuple index out of range
```

```
In [36]: t[1]
```

```
Out[36]: 25
```

```
In [38]: t2=(1,'test', True)
         t2
```

```
Out[38]: (1, 'test', True)
```

```
In [39]: t2.pop()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[39], line 1
----> 1 t2.pop()

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

```
In [40]: t2.count()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[40], line 1
----> 1 t2.count()

TypeError: tuple.count() takes exactly one argument (0 given)
```

```
In [42]: a=t.count
         a
```

```
Out[42]: <function tuple.count(value, /)>
```

```
In [43]: a
```

```
Out[43]: <function tuple.count(value, /)>
```

```
In [44]: len(t)
```

```
Out[44]: 3
```

set

```
In [45]: s={}
         s
```

```
Out[45]: {}
```

```
In [46]: s1={1,25,6.8,2.25}
         s1
```

```
Out[46]: {1, 2.25, 6.8, 25}
```

```
In [ ]:
```