Tuple

```
In [2]: t=(10,20,30)
```

```
In [3]: type(t)

Out[3]: tuple
```

```
In [4]: t[0]

Out[4]: 10
```

- Tuple first method count

```
In [6]: t.count(10)

Out[6]: 1
```

- Index method

```
In [7]: t[0:3]

Out[7]: (10, 20, 30)
```

```
In [8]: t[0:2]

Out[8]: (10, 20)
```

```
In [9]: t[0]

Out[9]: 10
```

```
In [10]: t[0:3:2]

Out[10]: (10, 30)
```

```
In [13]: c=list(t)
         print("c is :{0}".format(c)
         c=tuple(c)
         print("c is :{0}".format(c))

         c is :[10, 20, 30]
         c is :(10, 20, 30)
```

```
In [14]: t[0]=40

---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-14-c743a967fa4a> in <module>
----> 1 t[0]=40

TypeError: 'tuple' object does not support item assignment
```

In [16]:
```
c=list(t)
c[0]=40
c=tuple(c)
c
```

Out[16]:
```
(40, 20, 30)
```

In [17]:
```
f=(1,2,3)
if 1 in f:
    print("yes")
else:
    print("no")
```

```
yes
```

In [23]:
```
a=(1,2,3,4)
b=('a','k')
c=('g')
print(a+b+c)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-23-7a0662a3fe91> in <module>
      2 b=('a','k')
      3 c=('g')
----> 4 print(a+b+c)

TypeError: can only concatenate tuple (not "str") to tuple
```

In [27]:
```
a=(1,2,3,4)
b=('a','k')
c=('g','f')
d=(1)# tuple elements should be more that 1
print(a+b+c+d)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-27-3c1f470904e7> in <module>
      3 c=('g','f')
      4 d=(1)# tuple elements should be more that 1
----> 5 print(a+b+c+d)

TypeError: can only concatenate tuple (not "int") to tuple
```

- del method

In [28]:
```
del a
# To remove Entire Tupel
```

In [29]:
```
a
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-29-3f786850e387> in <module>
----> 1 a

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

In [35]:

```
# program to convert tuple to string
s=('p','e','d','s')
d="".join(s)
print(d)
```

```
peds
```

In [39]:

```
g="girls"
```

tasks

In [41]:

```
# python program to reverse the elements in a tuple
```

In [42]:

```
r=(1,2,3,4)
print(r[::-1])
```

```
(4, 3, 2, 1)
```

In [43]:

```
# python program to print elements in the tuple using loops
```

In [44]:

```
for i in range(0,len(r)):
    print(r[i])
```

```
1
2
3
4
```

SETS

In [48]:

```
p={1,2,3,4}
for i in p:
    print(i)
```

```
1
2
3
4
```

In [49]:

```
h={'f','re','asd'}
```

In [50]:

```
h
```

Out[50]:

```
{'asd', 'f', 're'}
```

In [51]:

```
print('f' in h)
```

```
True
```

In [52]:

```
print('r' in h)
```

```
False
```

```
In [53]: type(h)

Out[53]: set
```

SETs methods:

- add method

```
In [54]: h.add('keer')
```

```
In [55]: h

Out[55]: {'asd', 'f', 'keer', 're'}
```

- update method

```
In [56]: h.update(['naga','jaya'])
```

```
In [57]: h

Out[57]: {'asd', 'f', 'jaya', 'keer', 'naga', 're'}
```

- len method:To find the length of given set

```
In [58]: len(h)

Out[58]: 6
```

- remove method

```
In [60]: h.remove('asd')
```

```
In [61]: h

Out[61]: {'f', 'jaya', 'keer', 'naga', 're'}
```

- discard method

```
In [62]: h.discard("keer")
```

```
In [63]: h

Out[63]: {'f', 'jaya', 'naga', 're'}
```

- pop method

```
In [65]: h.pop()
Out[65]: 'naga'
```

```
In [66]: h
Out[66]: {'f', 'jaya', 're'}
```

```
In [68]: z={1,2,3,4}
```

```
In [69]: z.pop()
Out[69]: 1
```

```
In [70]: z.pop()
Out[70]: 2
```

- clear

```
In [71]: z.clear()
```

```
In [72]: z
Out[72]: set()
```

In [73]:
```
dir(z)
```

Out[73]:
```
['__and__',
 '__class__',
 '__contains__',
 '__delattr__',
 '__dir__',
 '__doc__',
 '__eq__',
 '__format__',
 '__ge__',
 '__getattribute__',
 '__gt__',
 '__hash__',
 '__iand__',
 '__init__',
 '__init_subclass__',
 '__ior__',
 '__isub__',
 '__iter__',
 '__ixor__',
 '__le__',
 '__len__',
 '__lt__',
 '__ne__',
 '__new__',
 '__or__',
 '__rand__',
 '__reduce__',
 '__reduce_ex__',
 '__repr__',
 '__ror__',
 '__rsub__',
 '__rxor__',
 '__setattr__',
 '__sizeof__',
 '__str__',
 '__sub__',
 '__subclasshook__',
 '__xor__',
 'add',
 'clear',
 'copy',
 'difference',
 'difference_update',
 'discard',
 'intersection',
 'intersection_update',
 'isdisjoint',
 'issubset',
 'issuperset',
 'pop',
 'remove',
 'symmetric_difference',
 'symmetric_difference_update',
 'union',
 'update']
```

In [74]:
```
x= {4,5,6}
del x
```

```
In [75]: x
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-75-6fcf9dfbd479> in <module>
----> 1 x

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

```
In [76]: p=[1,2]
         del p
```

```
In [78]: z={1:'der',2:'fr'}
```

```
In [79]: del z
```

- union:Combining Two Sets
- intersection:Print common elements in both the sets

```
In [89]: s1={1,2}
         s2={'g','k',1}
         s3=s1.union(s2)
         print(s3)
         s4=s1.intersection(s2)
         print(s4)

         {'k', 1, 2, 'g'}
         {1}
```

```
In [90]: a={1,2,1,1}
         print(a)

         {1, 2}
```

- difference

```
In [92]: s1={1,2,3,4}
         s2={4,5,6}
         s1.difference(s2)

Out[92]: {1, 2, 3}
```

```
In [93]: s2.difference(s1)

Out[93]: {5, 6}
```

```
In [95]: s1.difference_update(s2)
         s1

Out[95]: {1, 2, 3}
```

In [98]:
```
s={1,2,3}
v={1,2,3,4,4}
print(s.issubset(v))
print(v.issubset(s))
```

```
True
False
```

In [99]:
```
help(s1.symmetric_difference)
```

```
Help on built-in function symmetric_difference:

symmetric_difference(...) method of builtins.set instance
    Return the symmetric difference of two sets as a new set.

    (i.e. all elements that are in exactly one of the sets.)
```

- symmetric_difference

In [101]:
```
s.symmetric_difference(v)
```

Out[101]:
```
{4}
```

- isdisjoint

In [105]:
```
s1={1,2,3,4}
s2={6,7,8}
s1.isdisjoint(s2)
```

Out[105]:
```
True
```

In [108]:
```
s1.issuperset(s2)
```

Out[108]:
```
False
```

In [109]:
```
s1.issubset(s2)
```

Out[109]:
```
False
```

In [ ]:
```

```

In [122]:
```
s1={1,3,5,4}
s2={4,5,3,2}
#s1.intersection_update(s2)
#s1
```

In [133]:
```
s1.symmetric_difference_update(s2)
```

In [134]:
```
s1
```

Out[134]:
```
{1, 2}
```

In [135]:
```
s1.issuperset(s2)
```

Out[135]:
```
False
```

packages and Modules

- Package is collection of Modules
- A single python file containing functions
- Package-->Subpackage-->Module-->Functions

Module

In [140]:
```
def hari(name):
    print("hello"+name)
```

import modulenmae

modulename as our own name

Package

In [141]:
```
from math import floor as f1
f1(2343.565)
```

Out[141]:
```
2343
```

In [142]:
```
import random
def rand(n,lb,ub):
    for i in range(0,n):
        print(random.randint(lb,ub),end=" ")
```

In [143]:
```
rand(10,1,100)
```

```
15 27 58 84 33 64 27 100 12 45
```

In [145]:
```
from numerical import isPrime as p
p(3)
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
<ipython-input-145-3b1b7b73934b> in <module>
----> 1 from Numerical import isPrime as p
      2 p(3)

ModuleNotFoundError: No module named 'Numerical'
```

In [160]:
```
from math import sqrt as f
f(25)
```

Out[160]:
```
5.0
```

In [ ]:

In [ ]: