Tuple

- A tuple is a sequence of **immutable** Python objects.
- Tuples are **immutable which means you cannot update or change the values** of tuple elements.
- But we **can take portions of existing tuples to create new tuples.**
- **Can contain** elements of **different types.**
- An **ordered** group of **sequences** enclosed inside **braces** and **separated** by symbol comma(**,**)

Tuple declaration

- tup1 = (*'physics', 'chemistry', 1997, 2000)*
- tup2 = (2, 5, 6, 9, 8,3,0,4)
- tup3 = (*"a", "b", "c", "d")*
- tup1 = () **#Empty tuple**
- *'''To write a tuple containing a single value you have to* ***include a comma even though there is only one value'''***
- tup1 = (50,)
- tup3=tup2[1:5] #Slicing and assigning to new tuple
- print(tup3)

- Can take portions of existing tuples to create new tuples
- tup1 = (12, 34.56)
- tup2 = ('abc', 'xyz')
- # Can create a new tuple as follows
- tup3 = tup1 + tup2
- # Following action is not valid for tuples
- # tup1[0] = 100

Tuple Slicing

- t=(2,7,4,5,6,7,8,9,12)
- t1=t[3:6] #(5, 6, 7)
- t2=t[::2] #(2, 4, 6, 8, 12)
- t3=t[::-1] # reverse tuple is assigned to t3
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Deleting tuple object

- tup = ('physics', 'chemistry', 1997, 2000)
- del tup **# deletes entire tuple object**
- print (tup) **#NameError: name 'tup' is not defined**

Tuple functions

- **t=(2,7,4,5,6,7,8,9,12)**
- **print(t.count(7)) # number of occurrences of 7**
- **print(t.index(7)) #index of first occurrence 7 is 1**
- **print(t.index(7,2,7)) # index of 7 is 5 in the range of index 2 to 6**

- # Generate the same list of tuples via list comprehension
- pairs = [('key{0}'.format(x), 'value{0}'.format(x)) for x in range(1, 4)]