Pair Exercise: Tuples

HD Sheets, July 2024

For DSE5002

Sources

https://docs.python.org/3/tutorial/datastructures.html

a tuple is a sequence of values separated by commas, they do not need to be immutable

tuples are ordered and can be iterated, but they are immutable

In [1]:
```
a=1,2,"bob",3,"cathy"
```

In [2]:
```
a
```

Out[2]:
```
(1, 2, 'bob', 3, 'cathy')
```

In [3]:
```
# comprehension

[print(val) for val in a]
```

```
1
2
bob
3
cathy
```

Out[3]:
```
[None, None, None, None, None]
```

In [4]:
```
#indexing

a[1]
```

Out[4]:
```
2
```

In [5]:
```
#tuples are immutable, no changes allowed

a[1]=3
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[5], line 3
      1 #tuples are immutable, no changes allowed
----> 3 a[1]=3

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

In [ ]:
```
# we can combine tuples

b=a,3,4,5
```

```
b
```

Out[ ]: ((1, 2, 'bob', 3, 'cathy'), 3, 4, 5)

In [ ]:
```
#b is a tuple
# the first item in b is a tuple
b[0]
```

Out[ ]: (1, 2, 'bob', 3, 'cathy')

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

Out[ ]: 4

In [ ]:
```
#tuple unpacking

w,x,y,z=b

print(w)
print(x)
print(y)
print(z)
```

```
(1, 2, 'bob', 3, 'cathy')
3
4
5
```

Tuples are useful for storing constants, as a sequence of fixed values of known length, in a fixed order

Tuples are faster than lists, which is the only meaningful distinction I can find :)