

Enumerate: Indexes & Values

A useful function if you need to handle indexes and values in a sequence

Inge3016 in times of crisis

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Enumerate Function Example

Allows to handle the values in a sequence while at the same time enumerate them (enlistar, contar)

```
import numpy as np
xx=np.array([5,3,1,4,7,2,9,6,0,8])
for item in enumerate(xx):
    print(item)
```

counter

value

(0, 5)

(1, 3)

(2, 1)

(3, 4)

(4, 7)

(5, 2)

(6, 9)

(7, 6)

(8, 0)

(9, 8)

tuple

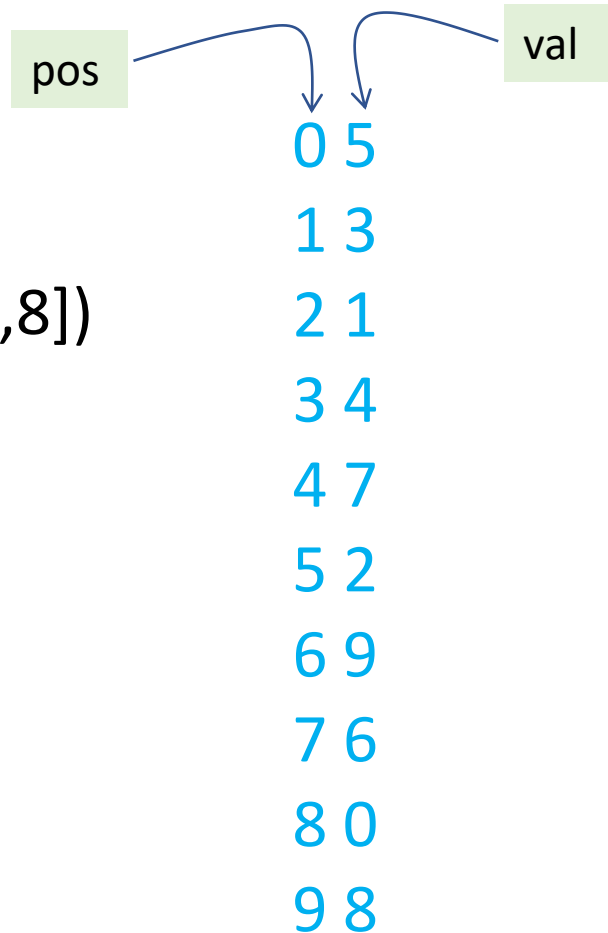
Tuple with (counter, value)

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```
import numpy as np
xx=np.array([5,3,1,4,7,2,9,6,0,8])

# Unpack the tuple
for pos,val in enumerate(xx):
    print(pos,val)
```



0	5
1	3
2	1
3	4
4	7
5	2
6	9
7	6
8	0
9	8

Aunque UD siga viendo los elementos uno al lado del otro, ahora son independientes porque no existe el parenthesis que los hace unirse para conformar la tupla

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Allows to handle the values in a sequence while at the same time enumerate them (enlistar, contar)

```
import numpy as np
xx=np.array([5,3,1,4,7,2,9,6,0,8])
```

```
# Unpack the tuple
for pos,val in enumerate(xx,2):
    print(pos,val)
```

Enumerate accepts a second argument which allows to start counting at any initial number; notice that counting happens one-by-one. Omitting this argument defaults to zero

pos	val
2	5
3	3
4	1
5	4
6	7
7	2
8	9
9	6
10	0
11	8

Aunque UD siga viendo los elementos uno al lado del otro, ahora son independientes porque no existe el parenthesis que los hace unirse para conformar la tupla

Example Problem

Modified the code to find the **maximum** value in an array and its **position**. Use the **enumerate** function. The **max** and **sort** function are not allowed.

- Output should be:

max= 9

position= 6

The above position is obtained if you start counting at zero.

Code:

```
xx=np.array([5,3,1,4,7,2,9,6,0,8])  
mx=xx[0] # Claim first is maximum
```

```
for pos,item in enumerate(xx):
```

```
    if item>mx:
```

```
        mx=item
```

```
print("max=",mx)
```

```
print("position=",px)
```