

e-7

March 11, 2025

```
[1]: import numpy as np
      from numpy import ma
      from PIL import Image
      from IPython.display import display
```

```
[2]: a = ma.masked_array([1, 2, 3])
```

```
[3]: b = np.array(a) # subok has default value (false)

      print(type(b))
      print(type(a))
```

```
<class 'numpy.ndarray'>
```

```
<class 'numpy.ma.MaskedArray'>
```

```
[4]: c = np.array(a, subok=True) # if true, so used from base class

      print(type(c))
      print(type(a))
```

```
<class 'numpy.ma.MaskedArray'>
```

```
<class 'numpy.ma.MaskedArray'>
```

```
[5]: c = np.array([1, 2, 3])
      d = np.array(c) # copy have default value (True)
      e = np.array(c, copy=False) # so anychange wass occured in e, c changed too

      d[0] = 15

      print(c)
      print('-----')
      print(d)

      print('*****')

      e[0] = 17

      print(c)
```

```
print('-----')
print(e)
```

```
[1 2 3]
-----
[15 2 3]
*****
[17 2 3]
-----
[17 2 3]
```

```
[6]: display(Image.open('array_order.png'))
```

**order : {'K', 'A', 'C', 'F'}, optional**

Specify the memory layout of the array. If object is not an array, the newly created array will be in C order (row major) unless 'F' is specified, in which case it will be in Fortran order (column major). If object is an array the following holds.

order	no copy	copy=True
'K'	unchanged	F & C order preserved, otherwise most similar order
'A'	unchanged	F order if input is F and not C, otherwise C order
'C'	C order	C order
'F'	F order	F order

```
[7]: display(Image.open('array_order_2.png'))
```

Memory Layout		Format																		
<table><tr><td>1</td><td>2</td><td>3</td></tr><tr><td>4</td><td>5</td><td>6</td></tr><tr><td>7</td><td>8</td><td>9</td></tr></table>	1	2	3	4	5	6	7	8	9	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr></table>	1	2	3	4	5	6	7	8	9	row-major
1	2	3																		
4	5	6																		
7	8	9																		
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1	4	7	2	5	8	3	6	9												

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