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JupyterLab Python (Pyodide)

```
[2]: import numpy as np
a=np.array([[1,2,4],[5,8,7]])
print("Array created using passed list:\n",a)
```

Array created using passed list:

```
[[1 2 4]
 [5 8 7]]
```

```
[4]: import numpy as np
b=np.zeros((3,4))
print("\nAn array initialized with all zeroes:\n",b)
```

An array initialized with all zeroes:

```
[[0. 0. 0. 0.]
 [0. 0. 0. 0.]
 [0. 0. 0. 0.]]
```

```
[5]: import numpy as np
c=np.full((3,3),6)
print("\nAn array iniyialized with all 6s.\n",c)
```

An array iniyialized with all 6s.



An array iniyialized with all 6s.

```
[[6 6 6]
 [6 6 6]
 [6 6 6]]
```

```
[6]: import numpy as np
      d=np.random.random((2,2))
      print("\nA random array:\n",d)
```

A random array:

```
[[0.14737795 0.96076933]
 [0.33634231 0.79647876]]
```

```
[8]: import numpy as np
      e=np.arange(0,30,5)
      print("\n A sequential array with steps of 5:\n",e)
```

A sequential array with steps of 5:

```
[ 0  5 10 15 20 25]
```

```
[9]: import numpy as np
      arr=np.array([[1,2,3,4],[5,2,4,2],[1,2,0,1]])
      newarr=arr.reshape(4,3)
      print("\nOriginal array:\n" arr)
```



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JupyterLab Python (Pyodide)

```
print("\nOriginal array:\n",arr)
print("Reshaped array[4,3]:\n",newarr)
```

```
Original array:
[[1 2 3 4]
 [5 2 4 2]
 [1 2 0 1]]
Reshaped array[4,3]:
[[1 2 3]
 [4 5 2]
 [4 2 1]
 [2 0 1]]
```

```
[10]: import numpy as np
      flarr=arr.flatten()
      print("\nOriginal array:\n",arr)
      print("Flattened array:\n",flarr)
```

```
Original array:
[[1 2 3 4]
 [5 2 4 2]
 [1 2 0 1]]
Flattened array:
[1 2 3 4 5 2 4 2 1 2 0 1]
```



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JupyterLab Python (Pyodide)

```
[12]: print("\nNo. of dimensions:",arr.ndim)
```

```
No. of dimensions: 2
```

```
[13]: print("\nShape of array:",arr.shape)
```

```
Shape of array: (3, 4)
```

```
[14]: print("\nSize of array:",arr.size)
```

```
Size of array: 12
```

```
[15]: print("\nArray stores elements of type: ",arr.dtype)
```

```
Array stores elements of type: int32
```

```
[16]: newtype=arr.astype('f')
print("\nConverted array elements:\n",newtype)
print("Converted array type:",newtype.dtype)
```

```
Converted array elements:
```

```
[[1. 2. 3. 4.]
```

```
[5. 2. 4. 2.]
```



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JupyterLab Python (Pyodide)

```
[[5. 2. 4. 2.]
 [1. 2. 0. 1.]]
Converted array type: float32
```

```
[1]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
print(p[3:0:-1])

[[10 11 12]
 [ 7  8  9]
 [ 4  5  6]]
```

```
[2]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
print(p[2,0:2])

[7 8]
```

```
[5]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
print(p[2:,2:])

[[ 9]
 [12]
 [15]]
```

```
[6]: import numpy as np
```



```
[6]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
print(p[3:,3:])
```

```
[]
```

```
[7]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
print(p[:,1])
```

```
[ 2  5  8 11 14]
```

```
[8]: import numpy as np
p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
c=p.astype('f')
print(c)
```

```
[[ 1.  2.  3.]
 [ 4.  5.  6.]
 [ 7.  8.  9.]
 [10. 11. 12.]
 [13. 14. 15.]]
```

```
[9]: import numpy as np
pp=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
c=p.astype('i')
```



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JupyterLab Python (Pyodide)

```
[ 2  3  8 11 14]

[8]: import numpy as np
      p=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
      c=p.astype('f')
      print(c)
```

```
[[ 1.  2.  3.]
 [ 4.  5.  6.]
 [ 7.  8.  9.]
 [10. 11. 12.]
 [13. 14. 15.]]
```

```
[9]: import numpy as np
      pp=np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
      c=p.astype('i')
      print(c)
```

```
[[ 1  2  3]
 [ 4  5  6]
 [ 7  8  9]
 [10 11 12]
 [13 14 15]]
```

[]:

