

Reshaping in Numpy

This lesson explains how to reshape an array into various dimensions.

We'll cover the following

- Examples
 - Reshape to 12 rows and 1 column
- Reshape to 3 rows and 4 columns
- Reshape to 4 rows and 3 column
- Reshape to 6 rows and 2 columns
- Reshape to 2 rows and 6 column

As explained in the previous lesson, to create a basic NumPy array write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0])
```

```
0 0 0 0 0 0 0 0 0 0 0 1 0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0])
3 print(Z)
```

RUN

SAVE

RESET

↺

Output

0.837s

```
[0 0 0 0 0 0 0 0 0 0 0 1 0]
```

We can reshape the array in any dimension

The basic syntax for reshaping array is:

```
Z=np.array(1D_array).reshape(x_dimension,y_dimension)
```

Examples

The following examples shows how to reshape an array in different dimenions:-

Reshape to 12 rows and 1 column

To reshape array to 12 rows and 1 column write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(12,1)
```

```
0
0
0
0
0
0
0
0
0
0
0
1
0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(12,1)
3 print(Z)
```

RUN

SAVE

RESET

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Output

0.683s

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

Reshape to 3 rows and 4 columns

To reshape array to 3 rows and 4 columns write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(3,4)
```

```
0 0 0 0
0 0 0 0
0 0 1 0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(3,4)
3 print(Z)
```

RUN

SAVE

RESET

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Output

0.743s

```
[[0 0 0 0]
[0 0 0 0]
[0 0 1 0]]
```

Reshape to 4 rows and 3 column

To reshape array to 4 rows and 3 columns write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(4,3)
```

```
0 0 0
0 0 0
0 0 0
0 1 0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(4,3)
3 print(Z)
```

RUN

SAVE

RESET

↺

Output

0.686s

```
[[0 0 0]
[0 0 0]
[0 0 0]
[0 1 0]]
```

Reshape to 6 rows and 2 columns

To reshape array to 6 rows and 2 columns write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(6,2)
```

```
0 0
0 0
0 0
0 0
0 0
1 0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(6,2)
3 print(Z)
```

RUN

SAVE

RESET

↺

Output

0.772s

```
[[0 0]
[0 0]
[0 0]
[0 0]
[0 0]
[1 0]]
```

Reshape to 2 rows and 6 column

To reshape array to 2 rows and 6 columns write:

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(2,6)
```

```
0 0 0 0 0 0
0 0 0 0 1 0
```

```
1 import numpy as np
2 Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(2,6)
3 print(Z)
```

RUN

SAVE

RESET

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Output

0.761s

```
[[0 0 0 0 0 0]
[0 0 0 0 1 0]]
```

Solve this Quiz!

Q

Given an array `Z` .How would you reshape an array in 3 rows and 2 columns?

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0])
```

A)

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(3,2)
```

B)

```
Z = np.array([0,0,0,0,0,0,0,0,0,0,0,1,0]).reshape(2,2)
```

COMPLETED 0%

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