Numpy Splitting Array

Splitting is reverse operation of joining.
Joining merges multiple arrays into one and
Splitting breaks one array into multiple.
We use array_split() for splitting arrays,
we pass it the array we want to split
and the number of splits.

e.g.→

```
import numpy as np
arr = np.array([1,2,3,4,5,6])
newarr = np.array_split(arr,3)
print(newarr)
```

Output

```
[array([1,2]), array([3,4]), array([5,6])]
```

```
import numpy as np
arr = np.array([1,2,3,4,5,6])
newarr = np.array_split(arr,4)
print(newarr)
```

Output

```
[array([1,2]), array([3,4]), array([5]),
 array([6])]
```

Split Into Arrays

Access the splitted arrays:

```
import numpy as np
arr = np.array([1,2,3,4,5,6])
newarr = np.array_split(arr,3)
print(newarr[0])
print(newarr[1])
print(newarr[2])
```

Output

```
[1 2]
[3 4]
[5 6]
```

Splitting 2-D Arrays

Split the 2-D array into three 2-D array

```
import numpy as np
arr = np.array([[1,2],[3,4],[5,6],[7,8],
                [9,10],[11,12]])
newarr = np.array_split(arr,3)
print(newarr)
```

Output

```
[array([[1,2],
        [3,4]]), array([[5,6],
        [7,8]]), array([[9,10],
        [11,12]])]
```

Split the 2-D array into three 2-D array.

```
import numpy as np
arr = np.array([[1,2,3],[4,5,6],[7,8,9],
                [10,11,12],[13,14,15],
                [16,17,18]])
newarr = np.array_split(arr,3)
print(newarr)
```

Split the 2-D array into three 2-D arrays along rows

```
import numpy as np
arr = np.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12
                [13,14,15],[16,17,18]])
newarr = np.array_split(arr,3,axis=1)
print(newarr)
```

Output

```
[array([[1],[4],[7],[10],[13],[16]]),
 array([[2],[5],[8],[11],[14],[17]]),
 array([[3],[6],[9],[12],[15],[18]])]
```

Use the hsplit() method to split the 2-D array into three 2-D arrays along rows.

```
import numpy as np
arr = np.array([[1,2,3],[4,5,6],[7,8,9],
                [10,11,12],[13,14,15],[16,17,18]])
newarr = np.hsplit(arr,3)
print(newarr)
```

(*) Similar alternative to vstack() and dstack() are available as vsplit() and dsplit().