

# How can I shift a column in Pandas?

Authored by  
**stats writer**

July 2, 2024

## RECOMMENDED CITATION

stats writer (2024). *How can I shift a column in Pandas?*. PSYCHOLOGICAL SCALES.  
Retrieved from <https://scales.arabpsychology.com/?p=165695>

Pandas is a popular data analysis library in Python that provides powerful tools for manipulating and organizing data. One common task in data analysis is shifting a column, which involves rearranging the order of values in a specific column of a dataset. This can be easily achieved in Pandas using the "shift()" function, which allows for shifting the values in a column up or down by a specified number of rows. This function is particularly useful for tasks such as time series analysis or creating lagged variables. By utilizing the shift() function, users can easily restructure their data and perform various data analysis tasks efficiently in Pandas.

## Shift a Column in Pandas (With Examples)

You can use the shift() function to shift the values of a column up or down in a pandas DataFrame:

```
#shift values down by 1
```

```
df = df.shift(1)
```

```
#shift values up by 1
```

```
df = df.shift(-1)
```

The following examples show how to use this function in practice with the following pandas DataFrame:

```
import pandas as pd
```

```
#create DataFrame
```

```
df = pd.DataFrame({'product': ,  
'sales': })
```

```
#view DataFrame
```

```
df
```

```
product sales
```

```
0 A 4
```

```
1 B 7
```

```
2 C 8
```

```
3 D 12
```

```
4 E 15
```

```
5 F 19
```

Example 1: Shift One Column Up or Down

The following code shows how to shift all of the values of the 'product' column down by 1:

```
#shift all 'product' values down by 1
```

```
df = df.shift(1)
```

```
#view updated DataFrame
```

```
df
```

```
product sales
```

```
0 NaN 4
```

```
1 A 7
```

```
2 B 8
```

**3 C 12**

**4 D 15**

**5 E 19**

Notice that each value in the 'product' column has been shifted down by 1 and the first value in the column has been replaced with NaN.

Also notice that the last value in the product column ('F') has been removed from the DataFrame entirely.

To keep the 'F' value in the DataFrame, we need to first add an empty row to the bottom of the DataFrame and then perform the shift:

```
import numpy as np

#add empty row to bottom of DataFrame
df.loc =

#shift all 'product' values down by 1
df = df.shift(1)

#view updated DataFrame
df
```

**product sales**

**0 NaN 4.0**

**1 A 7.0**

**2 B 8.0**

**3 C 12.0**

**4 D 15.0**

**5 E 19.0**

**6 F NaN**

**Notice that the 'F' value is retained as the last value in the 'product' column.**

**Example 2: Shift Multiple Columns Up or Down**

**The following code shows how to shift all of the values of the 'product' and 'sales' columns up by 2:**

```
#shift all 'product' and 'sales' values up by 2
```

```
df] = df].shift(-2)
```

```
#view updated DataFrame
```

```
df
```

**product sales**

**0 C 8.0**

**1 D 12.0**

**2 E 15.0**

**3 F 19.0**

**4 NaN NaN**

**5 NaN NaN**

**Notice that each value in the 'product' and 'sales' column has been shifted up by 2 and the bottom two values in each column have been replaced with NaN.**

**Note: You can find the complete documentation for the `shift()` function .**

**Additional Resources**

**The following tutorials explain how to perform other common operations in pandas:**