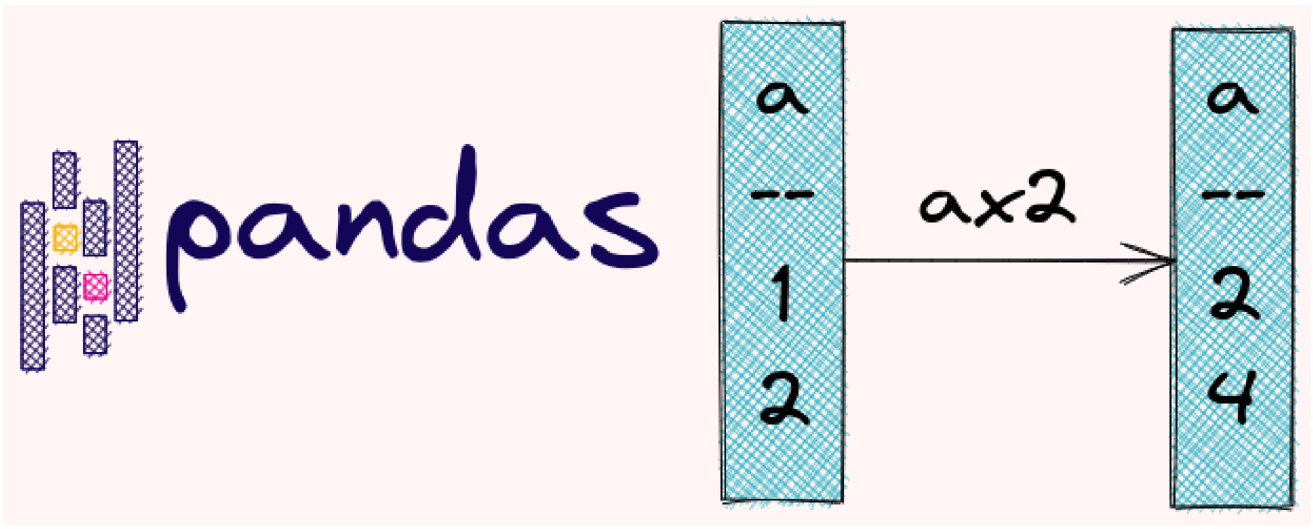
Efficient Python Tricks and Tools for Data Scientists - By Khuyen Tran

Change Values in a pandas DataFrame

GitHub View on GitHub Book View Book

This section shows some methods to change values of columns in a pandas DataFrame.



pandas.DataFrame.pipe: Increase the Readability of your Code when Applying Multiple Functions to a DataFrame

If you want to increase the readability of your code when applying multiple functions to a DataFrame, use `pands.DataFrame.pipe` method.

```
from textblob import TextBlob
import pandas as pd

def remove_white_space(df: pd.DataFrame):
    df['text'] = df['text'].apply(lambda row: 
row.strip())
    return df

def get_sentiment(df: pd.DataFrame):
    df['sentiment'] = df['text'].apply(lambda 
row:
                                       
 TextBlob(row).sentiment[0])
    return df

df = pd.DataFrame({'text': ["It is a beautiful 
day today  ",
                              "  This movie is
terrible"]})

df = (df.pipe(remove_white_space)
    .pipe(get_sentiment)
)

df
```

	text	sentiment
0	It is a beautiful day today	0.85
1	This movie is terrible	-1.00

Apply a Function to a Column of a DataFrame

If you want to apply only one function to a column of a DataFrame, use `apply`.

```
import pandas as pd

df = pd.DataFrame({"col1": [1, 2], "col2": [3,
4]})
df
```

	col1	col2
0	1	3
1	2	4

```
df["col1"] = df["col1"].apply(lambda row: row
* 2)
df
```

	col1	col2
0	2	3
1	4	4

Assign Values to Multiple New Columns

If you want to assign values to multiple new columns, instead of assigning them separately, you can do everything in one line of code with `df.assign`.

In the code below, I first created `col3` then use `col3` to create `col4`. Everything is in one line of code.

```python
import pandas as pd

df = pd.DataFrame({"col1": [1, 2], "col2": [3, 4]})

df = df.assign(col3=lambda x: x.col1 * 100 + x.col2).assign(
    col4=lambda x: x.col2 * x.col3
)
df
```

	col1	**col2**	**col3**	**col4**
0	1	3	103	309
1	2	4	204	816

pandas.Series.map: Change Values of a Pandas Series Using a Dictionary

If you want to change values of a pandas Series using a dictionary, use `pd.Series.map`.

```python
import pandas as pd

s = pd.Series(["a", "b", "c"])

s.map({"a": 1, "b": 2, "c": 3})
```

```
0    1
1    2
2    3
dtype: int64
```

pandas.DataFrame.explode: Transform Each Element in an Iterable to a Row

When working with `pandas DataFrame`, if you want to transform each element in an iterable to a row, use `explode`.

```
import pandas as pd

df = pd.DataFrame({"a": [[1, 2], [4, 5]], "b":
[11, 13]})
df
```

	a	b
0	[1, 2]	11
1	[4, 5]	13

```
df.explode("a")
```

	a	b
0	1	11
0	2	11
1	4	13
1	5	13

Split a String into Multiple Rows

Sometimes, you might have a column whose values are strings representing different items such as `"1, 2"`.

```
import pandas as pd

df = pd.DataFrame({"a": ["1,2", "4,5"], "b":
[11, 13]})
df
```

	a	b
0	1,2	11
1	4,5	13

To turn each string into a list, use `Series.str.split()`:

```
# Split by comma
df.a = df.a.str.split(",")
df
```

	a	b
0	[1, 2]	11
1	[4, 5]	13

Now you can split elements in the list into multiple rows using `explode`.

```
df.explode('a')
```

	a	b
0	1	11
0	2	11
1	4	13
1	5	13

Forward Fill in pandas: Use the Previous Value to Fill the Current Missing Value

If you want to use the previous value in a column or a row to fill the current missing value in a pandas DataFrame, use `df.fillna(method='ffill')`. `ffill` stands for forward fill.

```
import numpy as np
import pandas as pd

df = pd.DataFrame({"a": [1, np.nan, 3], "b":
[4, 5, np.nan], "c": [1, 2, 3]})
df
```

	a	b	c
0	1.0	4.0	1
1	NaN	5.0	2
2	3.0	NaN	3

```
df = df.fillna(method="ffill")
df
```

	a	b	c
0	1.0	4.0	1
1	1.0	5.0	2
2	3.0	5.0	3