

# Pandas Series Cheat Sheet

```
In [1]: import pandas as pd
```

## Create

```
In [2]: pd.Series([1, 3, 2])
```

```
Out[2]: 0    1  
        1    3  
        2    2  
        dtype: int64
```

```
In [3]: ps = pd.Series([1, 3, 2], ['a', 'b', 'c'], name='PS', dtype=float)  
        ps
```

```
Out[3]: a    1.0  
        b    3.0  
        c    2.0  
        Name: PS, dtype: float64
```

```
In [4]: ps.values
```

```
Out[4]: array([1., 3., 2.])
```

```
In [5]: ps.index
```

```
Out[5]: Index(['a', 'b', 'c'], dtype='object')
```

## Accessing Elements

```
In [6]: ps['b']
```

```
Out[6]: 3.000
```

```
In [7]: ps[0]
```

```
Out[7]: 1.000
```

```
In [8]: ps['a':'b']
```

```
Out[8]: a    1.0  
        b    3.0  
        Name: PS, dtype: float64
```

## Comparison and Filtering

```
In [9]: ps
```

```
Out[9]: a    1.0  
       b    3.0  
       c    2.0  
       Name: PS, dtype: float64
```

```
In [10]: ps > 1
```

```
Out[10]: a    False  
       b     True  
       c     True  
       Name: PS, dtype: bool
```

```
In [11]: ps[ps > 1]
```

```
Out[11]: b    3.0  
       c    2.0  
       Name: PS, dtype: float64
```

```
In [12]: ps[(ps > 1) & (ps < 3)]
```

```
Out[12]: c    2.0  
       Name: PS, dtype: float64
```

```
In [13]: ps3 = pd.Series(['one', 'two', 'three'])  
       ps3[ps3.str.endswith('e')]
```

```
Out[13]: 0    one  
       2   three  
       dtype: object
```

## Sorting

```
In [14]: ps.sort_index()
```

```
Out[14]: a    1.0  
       b    3.0  
       c    2.0  
       Name: PS, dtype: float64
```

```
In [15]: ps.sort_values()  
       # NOTE: Indices 'follow' values through sorting
```

```
Out[15]: a    1.0  
       c    2.0  
       b    3.0  
       Name: PS, dtype: float64
```

```
In [16]: ps  
       # NOTE: sort_xxx() returns a copy (inplace=False by default)
```

```
Out[16]: a    1.0  
       b    3.0  
       c    2.0  
       Name: PS, dtype: float64
```

```
In [17]: ps.sort_index(ascending=False, inplace=True)  
       ps
```

```
Out[17]: c    2.0  
        b    3.0  
        a    1.0  
        Name: PS, dtype: float64
```

## Computation

```
In [18]: ps.sum()
```

```
Out[18]: 6.000
```

```
In [19]: ps.max()
```

```
Out[19]: 3.000
```

```
In [20]: ps.mean()
```

```
Out[20]: 2.000
```

```
In [21]: ps.std()
```

```
Out[21]: 1.000
```

## Vector Arithmetic

```
In [22]: ps * 2
```

```
Out[22]: c    4.0  
        b    6.0  
        a    2.0  
        Name: PS, dtype: float64
```

## Series on Series Operations

```
In [23]: ps1 = pd.Series([4, 5], ['a', 'c'])  
ps1
```

```
Out[23]: a    4  
        c    5  
        dtype: int64
```

```
In [24]: ps2 = ps + ps1  
ps2  
# NOTE: Elements are matched by Index!
```

```
Out[24]: a    5.0  
        b    NaN  
        c    7.0  
        dtype: float64
```

## Finding/Dropping/Filling Nulls(NaN)

```
In [25]: ps2.isnull()
```

```
Out[25]: a    False  
b     True  
c    False  
dtype: bool
```

```
In [26]: ps2.notnull()
```

```
Out[26]: a     True  
b    False  
c     True  
dtype: bool
```

```
In [27]: ps2.dropna()  
# NOTE: returns a copy (inplace=False by default)
```

```
Out[27]: a    5.0  
c    7.0  
dtype: float64
```

```
In [28]: ps2.fillna(0, inplace=True)  
ps2
```

```
Out[28]: a    5.0  
b    0.0  
c    7.0  
dtype: float64
```

## Substitution

```
In [29]: ps2
```

```
Out[29]: a    5.0  
b    0.0  
c    7.0  
dtype: float64
```

```
In [30]: ps2.replace(0, -1)
```

```
Out[30]: a    5.0  
b   -1.0  
c    7.0  
dtype: float64
```

```
In [31]: ps2.replace([5, 7], -2)
```

```
Out[31]: a   -2.0  
b    0.0  
c   -2.0  
dtype: float64
```

```
In [32]: ps2.replace({0: -1, 7: -2})  
# NOTE: Skips over missing keys
```

```
Out[32]: a    5.0  
b   -1.0  
c   -2.0  
dtype: float64
```

```
In [33]: ps2.map({0: -1, 7: -2})
```

```
# NOTE: Missing keys result in nulls
```

```
Out[33]: a      NaN  
b     -1.0  
c     -2.0  
dtype: float64
```

## Misc

```
In [34]: df_dates = pd.DataFrame({'Date': pd.date_range('1/1/2020', periods=5, freq='2D')  
df_dates['Day'] = df_dates['Date'].dt.day  
df_dates['DayOfWk'] = df_dates['Date'].dt.weekday  
df_dates
```

```
Out[34]:
```

	Date	Day	DayOfWk
0	2020-01-01	1	2
1	2020-01-03	3	4
2	2020-01-05	5	6
3	2020-01-07	7	1
4	2020-01-09	9	3

```
In [35]: df
```

```
Out[35]:
```

	ColA	ColB	ColC
X	1	2	3
Y	4	5	6
Z	7	8	9

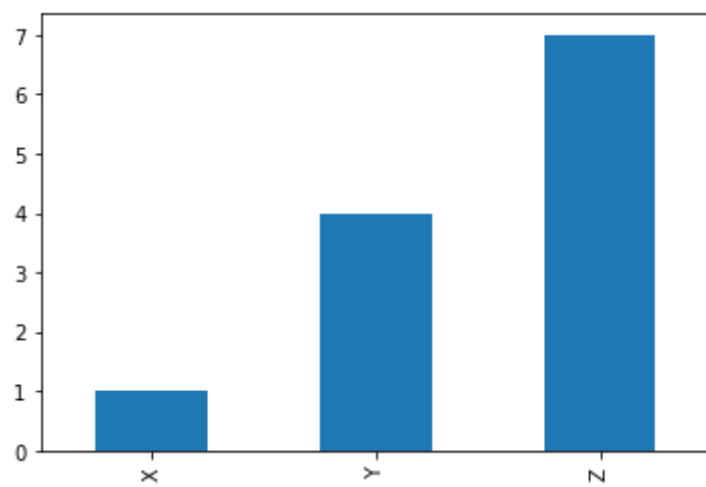
```
In [36]: df['ColA'].rolling(window=2).mean()
```

```
Out[36]: X      NaN  
Y      2.5  
Z      5.5  
Name: ColA, dtype: float64
```

```
In [37]: df['ColA'].cumsum()
```

```
Out[37]: X      1  
Y      5  
Z     12  
Name: ColA, dtype: int64
```

```
In [38]: df['ColA'].plot(kind='bar');
```



In [ ]: