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

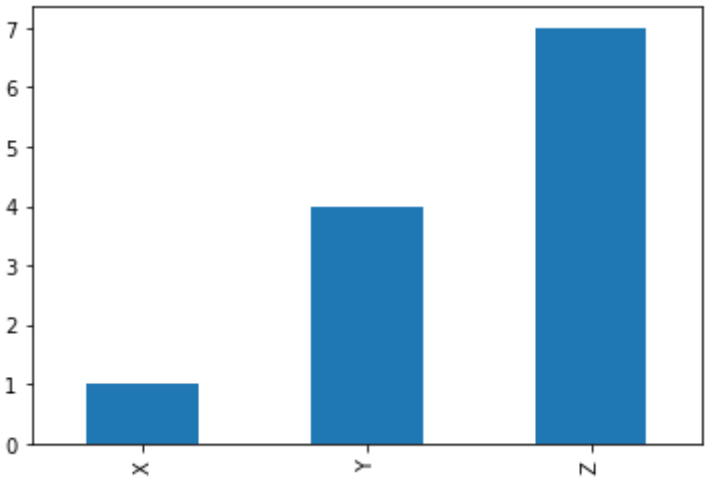
In [36]:
```
df['ColA'].rolling(window=2).mean()
```

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 [ ]: