

### Creating a Dataframe (copy)

```
df = pd.DataFrame() # Empty DataFrame
```

### Pandas DataFrame

#### Merge [...]

```
df = pd.merge(left=left_df,
              right=right_df, on='FIELD',
              validate='m:m')
```

#### Select Rows based on column value

```
df.loc[df['column_name'] ==
       some_value]
df[(df.field1 cond1) &
   (df.field2 cond2)]
```

#### Sort (by specified Field)

```
df.sort_values('FIELD')
```

#### Fill a column with value

```
df['A'] = 'foo'
```

#### Reset Index

```
df.reset_index(inplace=True)
```

#### Extract [month, date, hour, etc] from datetime column

```
df['NEW_FIELD'] = df['dt_FIELD'].dt.<value>
value=month, date, hour
```

#### Set Index

```
df.set_index(keys, drop=True,
             append=False, inplace=False,
             verify_integrity=False)
```

#### Documentation:

<http://pandas.pydata.org/pandas-docs/stable/>

[...]

### pandas Functions

len(df) Number of rows in DataFrame

df.dtypes Data type of each column

df.columns DataFrame column list of names str

df.count() Number of values in each column

df.sum() Sum of values in each column

df.min() Minimum value in each column

df.max() Maximum value in each column

df.mean() Mean value in each column

Replace df with df["Column Name"] or an equivalent variable to use these functions for a single column or set of selected values.

### Reading and writing data

#### Excel

```
df = pd.read_excel('file.xlsx',
                  sheet_name='sheet name')
[...]
df.to_excel('file.xlsx',
            sheet_name='sheet name' [...])
```

#### Excel multi sheets

```
with pd.ExcelWriter('path_to_file.xlsx') as writer:
    df1.to_excel(writer, sheet_name='Sheet1')
    df2.to_excel(writer, sheet_name='Sheet2')
```

#### pickle

```
df = pd.read_pickle('file.pickle')
[...]
df.to_pickle('file.pickle' [...])
```

#### csv

```
df = pd.read_csv('file.csv')
[...]
```

[...]

### Class Property Ddecorators

```
@property
def val(self):
    return self._val
@val.setter
def temperature(self, value):
    self._val = value
```

