

```
In [ ]: import pandas as pd
import numpy as np
```

```
In [ ]: #Objection Creation
s = pd.Series([1,2,3,4,np.nan,4,3,2])
s
```

```
Out[ ]: 0    1.0
1    2.0
2    3.0
3    4.0
4    NaN
5    4.0
6    3.0
7    2.0
dtype: float64
```

```
In [ ]: dates = pd.date_range('20130101',periods=6)
dates
```

```
Out[ ]: DatetimeIndex(['2013-01-01', '2013-01-02', '2013-01-03', '2013-01-04',
                        '2013-01-05', '2013-01-06'],
                        dtype='datetime64[ns]', freq='D')
```

```
In [ ]: df = pd.DataFrame(np.random.randn(6, 4), index=dates, columns=list("ABCD"))
df
```

```
Out[ ]:
```

	A	B	C	D
2013-01-01	-0.546371	1.401334	-0.027032	-0.030835
2013-01-02	-0.142514	0.382621	0.072281	-0.135842
2013-01-03	-0.927302	1.369514	-1.155230	-0.191267
2013-01-04	-0.720212	-0.004568	0.792073	2.179632
2013-01-05	0.199713	1.378364	-0.683522	0.839294
2013-01-06	0.621242	0.195484	-0.164767	-0.165131

```
In [ ]: np.random.randn(6,4)
```

```
Out[ ]: array([[ -0.0110371 ,  2.76784685,  0.66577754, -1.97940542],
 [ 2.23965366, -2.25655448,  0.7961772 ,  0.78336064],
 [-0.15956289,  3.29406013,  0.29770014,  0.27755289],
 [ 0.13818758, -0.63299988, -1.73358564,  0.96436665],
 [ 0.4299855 , -0.9013547 ,  1.07836099, -0.90622422],
 [-2.30370848, -0.38384397, -0.48370251,  0.82156625]])
```

```
In [ ]: df2 = pd.DataFrame(
{
    "A":1.0,
    "B":pd.Timestamp('20220202'),
    "C":pd.Series(1,index=list(range(4)), dtype='float32'),
    "D":np.array([3,3,3,3], dtype='int32'),
    "E":pd.Categorical(['test', 'train','test', 'train']),
    "F":'foo'
})
```

```
)  
  
df2
```

```
Out[ ]:   A      B  C  D  E  F  
0  1.0  2022-02-02  1.0  3  test  foo  
1  1.0  2022-02-02  1.0  3  train  foo  
2  1.0  2022-02-02  1.0  3  test  foo  
3  1.0  2022-02-02  1.0  3  train  foo
```

```
In [ ]: df2.dtypes
```

```
Out[ ]: A      float64  
B      datetime64[ns]  
C      float32  
D      int32  
E      category  
F      object  
dtype: object
```

```
In [ ]: df2.head(2)
```

```
Out[ ]:   A      B  C  D  E  F  
0  1.0  2022-02-02  1.0  3  test  foo  
1  1.0  2022-02-02  1.0  3  train  foo
```

```
In [ ]: df2.tail(2)
```

```
Out[ ]:   A      B  C  D  E  F  
2  1.0  2022-02-02  1.0  3  test  foo  
3  1.0  2022-02-02  1.0  3  train  foo
```

```
In [ ]: df2.index
```

```
Out[ ]: Int64Index([0, 1, 2, 3], dtype='int64')
```

```
In [ ]: convert_datafrom_to_array = df2.to_numpy()  
convert_datafrom_to_array
```

```
Out[ ]: array([[1.0, Timestamp('2022-02-02 00:00:00'), 1.0, 3, 'test', 'foo'],  
               [1.0, Timestamp('2022-02-02 00:00:00'), 1.0, 3, 'train', 'foo'],  
               [1.0, Timestamp('2022-02-02 00:00:00'), 1.0, 3, 'test', 'foo'],  
               [1.0, Timestamp('2022-02-02 00:00:00'), 1.0, 3, 'train', 'foo']],  
          dtype=object)
```

```
In [ ]: df2.describe()
```

Out[]:

	A	C	D
count	4.0	4.0	4.0
mean	1.0	1.0	3.0
std	0.0	0.0	0.0
min	1.0	1.0	3.0
25%	1.0	1.0	3.0
50%	1.0	1.0	3.0
75%	1.0	1.0	3.0
max	1.0	1.0	3.0

In []:

df2.T

Out[]:

	0	1	2	3
A	1.0	1.0	1.0	1.0
B	2022-02-02 00:00:00	2022-02-02 00:00:00	2022-02-02 00:00:00	2022-02-02 00:00:00
C	1.0	1.0	1.0	1.0
D	3	3	3	3
E	test	train	test	train
F	foo	foo	foo	foo

In []: