In [5]:
```
#importing libraries

import pandas as pd
import numpy as np
```

In [6]:
```
# Object Creation
s = pd.Series([1,3,np.nan,5,7,9])
s
```

Out[6]:
```
0    1.0
1    3.0
2    NaN
3    5.0
4    7.0
5    9.0
dtype: float64
```

In [67]:
```
dates2 = pd.date_range("20220101", periods=6)
dates2
```

Out[67]:
```
DatetimeIndex(['2022-01-01', '2022-01-02', '2022-01-03', '2022-01-04',
               '2022-01-05', '2022-01-06'],
              dtype='datetime64[ns]', freq='D')
```

In [68]:
```
dates = pd.date_range("20220101", periods=20)
dates
```

Out[68]:
```
DatetimeIndex(['2022-01-01', '2022-01-02', '2022-01-03', '2022-01-04',
               '2022-01-05', '2022-01-06', '2022-01-07', '2022-01-08',
               '2022-01-09', '2022-01-10', '2022-01-11', '2022-01-12',
               '2022-01-13', '2022-01-14', '2022-01-15', '2022-01-16',
               '2022-01-17', '2022-01-18', '2022-01-19', '2022-01-20'],
              dtype='datetime64[ns]', freq='D')
```

In [95]:
```
df = pd.DataFrame(np.random.randn(20,4), index=dates, columns=list("RNDM"))
df
```

Out[95]:

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-03	0.304646	1.155465	-0.239556	0.414983
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306
2022-01-05	0.049985	-0.111792	0.208935	-1.171818
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-10	0.959261	0.358350	1.238837	0.527731

	R	N	D	M
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-16	-0.334696	-1.811295	2.802079	0.463880
2022-01-17	-0.350392	-0.963314	0.035420	1.689252
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360
2022-01-20	-1.688586	0.626544	0.464087	1.342960

In [96]:
```
df2 = pd.DataFrame(
    {
        "A": 1.0,
        "B": pd.Timestamp("20220111"),
        "C": pd.Series(1, index=list(range(4)), dtype="float32"),
        "D": np.array([3] * 4, dtype="int32"),
        "E": pd.Categorical(["girl", "woman", "girl", "woman"]),
        "F":  "females",
    }
)
df2
```

Out[96]:

	A	B	C	D	E	F
0	1.0	2022-01-11	1.0	3	girl	females
1	1.0	2022-01-11	1.0	3	woman	females
2	1.0	2022-01-11	1.0	3	girl	females
3	1.0	2022-01-11	1.0	3	woman	females

In [97]:
```
df2.dtypes
```

Out[97]:
```
A           float64
B    datetime64[ns]
C           float32
D             int32
E          category
F            object
dtype: object
```

In [98]:
```
df.head(2)
```

Out[98]:

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942

In [99]:
```
df.tail(2)
```

Out[99]:

	R	N	D	M
2022-01-19	-0.321055	-0.492929	-0.856755	0.31236
2022-01-20	-1.688586	0.626544	0.464087	1.34296

In [100…
```
df2.index
```

Out[100…
```
Int64Index([0, 1, 2, 3], dtype='int64')
```

In [101…
```
df.to_numpy()
```

Out[101…
```
array([[-0.39885287,  0.88295158,  1.51978996, -0.05153389],
       [-0.0709778 ,  0.09174798,  0.2162364 ,  0.03294197],
       [ 0.30464578,  1.1554648 , -0.23955571,  0.41498325],
       [-0.0722377 , -0.2301876 , -1.65428566, -0.07030617],
       [ 0.04998481, -0.11179211,  0.20893467, -1.17181816],
       [-1.01196172,  0.70883826,  0.5279746 ,  0.30738071],
       [-0.08838817, -0.16824506, -0.57584488, -0.67692829],
       [-1.38283598, -0.26216014,  0.55324433, -0.44581968],
       [-1.26999901,  0.84301035, -0.0842153 , -1.05635739],
       [ 0.9592612 ,  0.35835008,  1.23883682,  0.52773076],
       [-1.25251619, -0.25730549,  0.0988566 , -1.68883021],
       [-2.3100246 ,  1.83879149,  0.38480176,  1.60207333],
       [ 0.23660742,  1.20353324, -0.30031599, -0.90834583],
       [-0.8552212 , -1.56355716, -1.09205098, -2.10998085],
       [ 0.70596799,  1.21108654, -0.02453781,  0.06892327],
       [-0.33469641, -1.81129503,  2.80207887,  0.46388021],
       [-0.35039178, -0.96331379,  0.03542001,  1.68925223],
       [-1.11275242,  0.12293705, -0.0261683 , -0.6268811 ],
       [-0.32105457, -0.49292868, -0.85675514,  0.31236026],
       [-1.68858605,  0.62654413,  0.46408671,  1.34295969]])
```

In [102…
```
df2.to_numpy()
```

Out[102…
```
array([[1.0, Timestamp('2022-01-11 00:00:00'), 1.0, 3, 'girl', 'females'],
       [1.0, Timestamp('2022-01-11 00:00:00'), 1.0, 3, 'woman',
        'females'],
       [1.0, Timestamp('2022-01-11 00:00:00'), 1.0, 3, 'girl', 'females'],
       [1.0, Timestamp('2022-01-11 00:00:00'), 1.0, 3, 'woman',
        'females']], dtype=object)
```

In [103…
```
df.describe()
```

Out[103…

	R	N	D	M
count	20.000000	20.000000	20.000000	20.000000
mean	-0.513201	0.159124	0.159827	-0.102216
std	0.830109	0.939974	0.956578	1.014486
min	-2.310025	-1.811295	-1.654286	-2.109981

	R	N	D	M
25%	-1.147693	-0.258519	-0.254746	-0.734783
50%	-0.342544	0.107343	0.067138	-0.009296
75%	-0.040737	0.852996	0.480059	0.427207
max	0.959261	1.838791	2.802079	1.689252

In [104…

```
df.T
```

Out[104…

	2022-01-01	2022-01-02	2022-01-03	2022-01-04	2022-01-05	2022-01-06	2022-01-07	2022-01-08	2022-01-09	2022-01-10	2022-
R	-0.398853	-0.070978	0.304646	-0.072238	0.049985	-1.011962	-0.088388	-1.382836	-1.269999	0.959261	-1.252
N	0.882952	0.091748	1.155465	-0.230188	-0.111792	0.708838	-0.168245	-0.262160	0.843010	0.358350	-0.257
D	1.519790	0.216236	-0.239556	-1.654286	0.208935	0.527975	-0.575845	0.553244	-0.084215	1.238837	0.098
M	-0.051534	0.032942	0.414983	-0.070306	-1.171818	0.307381	-0.676928	-0.445820	-1.056357	0.527731	-1.688

In [105…

```
df.sort_index()
```

Out[105…

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-03	0.304646	1.155465	-0.239556	0.414983
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306
2022-01-05	0.049985	-0.111792	0.208935	-1.171818
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-16	-0.334696	-1.811295	2.802079	0.463880
2022-01-17	-0.350392	-0.963314	0.035420	1.689252
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360

	R	N	D	M
2022-01-20	-1.688586	0.626544	0.464087	1.342960

In [106…
```
df.sort_index(axis=1)
```

Out[106…

	D	M	N	R
2022-01-01	1.519790	-0.051534	0.882952	-0.398853
2022-01-02	0.216236	0.032942	0.091748	-0.070978
2022-01-03	-0.239556	0.414983	1.155465	0.304646
2022-01-04	-1.654286	-0.070306	-0.230188	-0.072238
2022-01-05	0.208935	-1.171818	-0.111792	0.049985
2022-01-06	0.527975	0.307381	0.708838	-1.011962
2022-01-07	-0.575845	-0.676928	-0.168245	-0.088388
2022-01-08	0.553244	-0.445820	-0.262160	-1.382836
2022-01-09	-0.084215	-1.056357	0.843010	-1.269999
2022-01-10	1.238837	0.527731	0.358350	0.959261
2022-01-11	0.098857	-1.688830	-0.257305	-1.252516
2022-01-12	0.384802	1.602073	1.838791	-2.310025
2022-01-13	-0.300316	-0.908346	1.203533	0.236607
2022-01-14	-1.092051	-2.109981	-1.563557	-0.855221
2022-01-15	-0.024538	0.068923	1.211087	0.705968
2022-01-16	2.802079	0.463880	-1.811295	-0.334696
2022-01-17	0.035420	1.689252	-0.963314	-0.350392
2022-01-18	-0.026168	-0.626881	0.122937	-1.112752
2022-01-19	-0.856755	0.312360	-0.492929	-0.321055
2022-01-20	0.464087	1.342960	0.626544	-1.688586

In [107…
```
df.sort_index(axis=1,ascending= False)
```

Out[107…

	R	N	M	D
2022-01-01	-0.398853	0.882952	-0.051534	1.519790
2022-01-02	-0.070978	0.091748	0.032942	0.216236
2022-01-03	0.304646	1.155465	0.414983	-0.239556
2022-01-04	-0.072238	-0.230188	-0.070306	-1.654286
2022-01-05	0.049985	-0.111792	-1.171818	0.208935
2022-01-06	-1.011962	0.708838	0.307381	0.527975
2022-01-07	-0.088388	-0.168245	-0.676928	-0.575845

	R	N	M	D
2022-01-08	-1.382836	-0.262160	-0.445820	0.553244
2022-01-09	-1.269999	0.843010	-1.056357	-0.084215
2022-01-10	0.959261	0.358350	0.527731	1.238837
2022-01-11	-1.252516	-0.257305	-1.688830	0.098857
2022-01-12	-2.310025	1.838791	1.602073	0.384802
2022-01-13	0.236607	1.203533	-0.908346	-0.300316
2022-01-14	-0.855221	-1.563557	-2.109981	-1.092051
2022-01-15	0.705968	1.211087	0.068923	-0.024538
2022-01-16	-0.334696	-1.811295	0.463880	2.802079
2022-01-17	-0.350392	-0.963314	1.689252	0.035420
2022-01-18	-1.112752	0.122937	-0.626881	-0.026168
2022-01-19	-0.321055	-0.492929	0.312360	-0.856755
2022-01-20	-1.688586	0.626544	1.342960	0.464087

In [108…

```
df.sort_index(axis=1,ascending= True)
```

Out[108…

	D	M	N	R
2022-01-01	1.519790	-0.051534	0.882952	-0.398853
2022-01-02	0.216236	0.032942	0.091748	-0.070978
2022-01-03	-0.239556	0.414983	1.155465	0.304646
2022-01-04	-1.654286	-0.070306	-0.230188	-0.072238
2022-01-05	0.208935	-1.171818	-0.111792	0.049985
2022-01-06	0.527975	0.307381	0.708838	-1.011962
2022-01-07	-0.575845	-0.676928	-0.168245	-0.088388
2022-01-08	0.553244	-0.445820	-0.262160	-1.382836
2022-01-09	-0.084215	-1.056357	0.843010	-1.269999
2022-01-10	1.238837	0.527731	0.358350	0.959261
2022-01-11	0.098857	-1.688830	-0.257305	-1.252516
2022-01-12	0.384802	1.602073	1.838791	-2.310025
2022-01-13	-0.300316	-0.908346	1.203533	0.236607
2022-01-14	-1.092051	-2.109981	-1.563557	-0.855221
2022-01-15	-0.024538	0.068923	1.211087	0.705968
2022-01-16	2.802079	0.463880	-1.811295	-0.334696
2022-01-17	0.035420	1.689252	-0.963314	-0.350392
2022-01-18	-0.026168	-0.626881	0.122937	-1.112752

	D	M	N	R
2022-01-19	-0.856755	0.312360	-0.492929	-0.321055
2022-01-20	0.464087	1.342960	0.626544	-1.688586

In [109…
```
df.sort_values("D",ascending= True)
```

Out[109…

	R	N	D	M
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-03	0.304646	1.155465	-0.239556	0.414983
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-17	-0.350392	-0.963314	0.035420	1.689252
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830
2022-01-05	0.049985	-0.111792	0.208935	-1.171818
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-20	-1.688586	0.626544	0.464087	1.342960
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-16	-0.334696	-1.811295	2.802079	0.463880

In [110…
```
df.sort_values("D",ascending= False)
```

Out[110…

	R	N	D	M
2022-01-16	-0.334696	-1.811295	2.802079	0.463880
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-20	-1.688586	0.626544	0.464087	1.342960

	R	N	D	M
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-05	0.049985	-0.111792	0.208935	-1.171818
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830
2022-01-17	-0.350392	-0.963314	0.035420	1.689252
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-03	0.304646	1.155465	-0.239556	0.414983
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306

In [111…

```
df["N"]
```

Out[111…

```
2022-01-01    0.882952
2022-01-02    0.091748
2022-01-03    1.155465
2022-01-04   -0.230188
2022-01-05   -0.111792
2022-01-06    0.708838
2022-01-07   -0.168245
2022-01-08   -0.262160
2022-01-09    0.843010
2022-01-10    0.358350
2022-01-11   -0.257305
2022-01-12    1.838791
2022-01-13    1.203533
2022-01-14   -1.563557
2022-01-15    1.211087
2022-01-16   -1.811295
2022-01-17   -0.963314
2022-01-18    0.122937
2022-01-19   -0.492929
2022-01-20    0.626544
Freq: D, Name: N, dtype: float64
```

In [112…

```
#row wise selection
df[0:2]
```

Out[112…

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942

In [113…
```
#lable wise selection

df.loc[dates[2]]
```

Out[113…
```
R    0.304646
N    1.155465
D   -0.239556
M    0.414983
Name: 2022-01-03 00:00:00, dtype: float64
```

In [114…
```
df.loc[:,["R","D"]]
```

Out[114…

	R	D
2022-01-01	-0.398853	1.519790
2022-01-02	-0.070978	0.216236
2022-01-03	0.304646	-0.239556
2022-01-04	-0.072238	-1.654286
2022-01-05	0.049985	0.208935
2022-01-06	-1.011962	0.527975
2022-01-07	-0.088388	-0.575845
2022-01-08	-1.382836	0.553244
2022-01-09	-1.269999	-0.084215
2022-01-10	0.959261	1.238837
2022-01-11	-1.252516	0.098857
2022-01-12	-2.310025	0.384802
2022-01-13	0.236607	-0.300316
2022-01-14	-0.855221	-1.092051
2022-01-15	0.705968	-0.024538
2022-01-16	-0.334696	2.802079
2022-01-17	-0.350392	0.035420
2022-01-18	-1.112752	-0.026168
2022-01-19	-0.321055	-0.856755
2022-01-20	-1.688586	0.464087

In [115…
```
df.loc["2022-01-02":"2022-01-05",["R","D"]]
```

Out[115…

	R	D
2022-01-02	-0.070978	0.216236
2022-01-03	0.304646	-0.239556
2022-01-04	-0.072238	-1.654286
2022-01-05	0.049985	0.208935

In [116…
```
df.at[dates[0],"R"]
```

Out[116…
```
-0.3988528744252423
```

In [117…
```
df.at[dates[12],"R"]
```

Out[117…
```
0.23660742022222536
```

In [120…
```
df.iloc[2:9,1:3]
```

Out[120…

	N	D
2022-01-03	1.155465	-0.239556
2022-01-04	-0.230188	-1.654286
2022-01-05	-0.111792	0.208935
2022-01-06	0.708838	0.527975
2022-01-07	-0.168245	-0.575845
2022-01-08	-0.262160	0.553244
2022-01-09	0.843010	-0.084215

In [121…
```
df[df["N"] > 0]
```

Out[121…

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-03	0.304646	1.155465	-0.239556	0.414983
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-20	-1.688586	0.626544	0.464087	1.342960

In [122…
```
df[df["D"] > 1]
```

Out[122…

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534

	R	N	D	M
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-16	-0.334696	-1.811295	2.802079	0.463880

This is the assignment ask in the video

In [125…

```
df[df[["D","R"]] < 1]
```

Out[125…

	R	N	D	M
2022-01-01	-0.398853	NaN	NaN	NaN
2022-01-02	-0.070978	NaN	0.216236	NaN
2022-01-03	0.304646	NaN	-0.239556	NaN
2022-01-04	-0.072238	NaN	-1.654286	NaN
2022-01-05	0.049985	NaN	0.208935	NaN
2022-01-06	-1.011962	NaN	0.527975	NaN
2022-01-07	-0.088388	NaN	-0.575845	NaN
2022-01-08	-1.382836	NaN	0.553244	NaN
2022-01-09	-1.269999	NaN	-0.084215	NaN
2022-01-10	0.959261	NaN	NaN	NaN
2022-01-11	-1.252516	NaN	0.098857	NaN
2022-01-12	-2.310025	NaN	0.384802	NaN
2022-01-13	0.236607	NaN	-0.300316	NaN
2022-01-14	-0.855221	NaN	-1.092051	NaN
2022-01-15	0.705968	NaN	-0.024538	NaN
2022-01-16	-0.334696	NaN	NaN	NaN
2022-01-17	-0.350392	NaN	0.035420	NaN
2022-01-18	-1.112752	NaN	-0.026168	NaN
2022-01-19	-0.321055	NaN	-0.856755	NaN
2022-01-20	-1.688586	NaN	0.464087	NaN

In [126…

```
df2 = df.copy()
df2
```

Out[126…

	R	N	D	M
2022-01-01	-0.398853	0.882952	1.519790	-0.051534
2022-01-02	-0.070978	0.091748	0.216236	0.032942
2022-01-03	0.304646	1.155465	-0.239556	0.414983

	R	N	D	M
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306
2022-01-05	0.049985	-0.111792	0.208935	-1.171818
2022-01-06	-1.011962	0.708838	0.527975	0.307381
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357
2022-01-10	0.959261	0.358350	1.238837	0.527731
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830
2022-01-12	-2.310025	1.838791	0.384802	1.602073
2022-01-13	0.236607	1.203533	-0.300316	-0.908346
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981
2022-01-15	0.705968	1.211087	-0.024538	0.068923
2022-01-16	-0.334696	-1.811295	2.802079	0.463880
2022-01-17	-0.350392	-0.963314	0.035420	1.689252
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360
2022-01-20	-1.688586	0.626544	0.464087	1.342960

In [128…

```
df2["New_Coulmn"] = ["one","two","three","four","one","two","three","four","one","two","three","fo
df2
```

Out[128…

	R	N	D	M	New_Coulmn
2022-01-01	-0.398853	0.882952	1.519790	-0.051534	one
2022-01-02	-0.070978	0.091748	0.216236	0.032942	two
2022-01-03	0.304646	1.155465	-0.239556	0.414983	three
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306	four
2022-01-05	0.049985	-0.111792	0.208935	-1.171818	one
2022-01-06	-1.011962	0.708838	0.527975	0.307381	two
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928	three
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820	four
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357	one
2022-01-10	0.959261	0.358350	1.238837	0.527731	two
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830	three
2022-01-12	-2.310025	1.838791	0.384802	1.602073	four
2022-01-13	0.236607	1.203533	-0.300316	-0.908346	one
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981	two

	R	N	D	M	New_Coulmn
2022-01-15	0.705968	1.211087	-0.024538	0.068923	three
2022-01-16	-0.334696	-1.811295	2.802079	0.463880	four
2022-01-17	-0.350392	-0.963314	0.035420	1.689252	one
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881	two
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360	three
2022-01-20	-1.688586	0.626544	0.464087	1.342960	four

In [129…
```
df2[df2["D"] > 1.2]
```

Out[129…

	R	N	D	M	New_Coulmn
2022-01-01	-0.398853	0.882952	1.519790	-0.051534	one
2022-01-10	0.959261	0.358350	1.238837	0.527731	two
2022-01-16	-0.334696	-1.811295	2.802079	0.463880	four

In [132…
```
df2["new"] = df2["R"]+1
```

In [133…
```
df2
```

Out[133…

	R	N	D	M	New_Coulmn	mean	new
2022-01-01	-0.398853	0.882952	1.519790	-0.051534	one	0.601147	0.601147
2022-01-02	-0.070978	0.091748	0.216236	0.032942	two	0.929022	0.929022
2022-01-03	0.304646	1.155465	-0.239556	0.414983	three	1.304646	1.304646
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306	four	0.927762	0.927762
2022-01-05	0.049985	-0.111792	0.208935	-1.171818	one	1.049985	1.049985
2022-01-06	-1.011962	0.708838	0.527975	0.307381	two	-0.011962	-0.011962
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928	three	0.911612	0.911612
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820	four	-0.382836	-0.382836
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357	one	-0.269999	-0.269999
2022-01-10	0.959261	0.358350	1.238837	0.527731	two	1.959261	1.959261
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830	three	-0.252516	-0.252516
2022-01-12	-2.310025	1.838791	0.384802	1.602073	four	-1.310025	-1.310025
2022-01-13	0.236607	1.203533	-0.300316	-0.908346	one	1.236607	1.236607
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981	two	0.144779	0.144779
2022-01-15	0.705968	1.211087	-0.024538	0.068923	three	1.705968	1.705968
2022-01-16	-0.334696	-1.811295	2.802079	0.463880	four	0.665304	0.665304
2022-01-17	-0.350392	-0.963314	0.035420	1.689252	one	0.649608	0.649608

	R	N	D	M	New_Coulmn	mean	new
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881	two	-0.112752	-0.112752
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360	three	0.678945	0.678945
2022-01-20	-1.688586	0.626544	0.464087	1.342960	four	-0.688586	-0.688586

Assignmnet given in video all integer column ko add kr ka ak new column banana

In [142…

```
#by column wise
df2["Add all columns in to one"] = df2[["R","N","D","M"]].sum(axis=1)
```

In [143…

```
df2
```

Out[143…

	R	N	D	M	New_Coulmn	mean	new	Add all columns in to one
2022-01-01	-0.398853	0.882952	1.519790	-0.051534	one	0.601147	0.601147	1.952355
2022-01-02	-0.070978	0.091748	0.216236	0.032942	two	0.929022	0.929022	0.269949
2022-01-03	0.304646	1.155465	-0.239556	0.414983	three	1.304646	1.304646	1.635538
2022-01-04	-0.072238	-0.230188	-1.654286	-0.070306	four	0.927762	0.927762	-2.027017
2022-01-05	0.049985	-0.111792	0.208935	-1.171818	one	1.049985	1.049985	-1.024691
2022-01-06	-1.011962	0.708838	0.527975	0.307381	two	-0.011962	-0.011962	0.532232
2022-01-07	-0.088388	-0.168245	-0.575845	-0.676928	three	0.911612	0.911612	-1.509406
2022-01-08	-1.382836	-0.262160	0.553244	-0.445820	four	-0.382836	-0.382836	-1.537571
2022-01-09	-1.269999	0.843010	-0.084215	-1.056357	one	-0.269999	-0.269999	-1.567561
2022-01-10	0.959261	0.358350	1.238837	0.527731	two	1.959261	1.959261	3.084179
2022-01-11	-1.252516	-0.257305	0.098857	-1.688830	three	-0.252516	-0.252516	-3.099795
2022-01-12	-2.310025	1.838791	0.384802	1.602073	four	-1.310025	-1.310025	1.515642
2022-01-13	0.236607	1.203533	-0.300316	-0.908346	one	1.236607	1.236607	0.231479
2022-01-14	-0.855221	-1.563557	-1.092051	-2.109981	two	0.144779	0.144779	-5.620810

	R	N	D	M	New_Coulmn	mean	new	Add all columns in to one
2022-01-15	0.705968	1.211087	-0.024538	0.068923	three	1.705968	1.705968	1.961440
2022-01-16	-0.334696	-1.811295	2.802079	0.463880	four	0.665304	0.665304	1.119968
2022-01-17	-0.350392	-0.963314	0.035420	1.689252	one	0.649608	0.649608	0.410967
2022-01-18	-1.112752	0.122937	-0.026168	-0.626881	two	-0.112752	-0.112752	-1.642865
2022-01-19	-0.321055	-0.492929	-0.856755	0.312360	three	0.678945	0.678945	-1.358378
2022-01-20	-1.688586	0.626544	0.464087	1.342960	four	-0.688586	-0.688586	0.745004

In [ ]: