rsk-nbcm

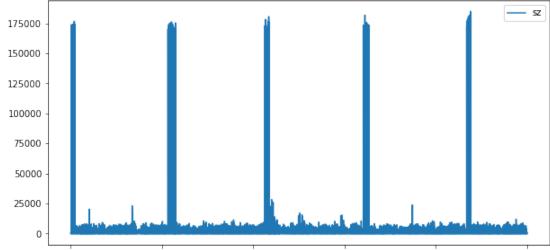
May 12, 2021

```
[1]: import pandas as pd
     import numpy as np
    data = pd.read_csv("h100000.csv", names=["time", "io", "type", "sz", "height"])
[2]:
[3]:
     data
[3]:
                                    time io
                                                                   height
                                                        type
                                                               sz
     0
            2021-05-12T17:03:38.692351Z
                                                      STATUS
                                                               82
                                                                       -1
     1
            2021-05-12T17:03:38.699747Z
                                           Ι
                                              STATUS MESSAGE
                                                                       -1
                                                               89
     2
            2021-05-12T17:03:38.701878Z
                                           0
                                                      STATUS
                                                               82
                                                                       -1
     3
            2021-05-12T17:03:38.704212Z
                                              STATUS MESSAGE
                                           0
                                                               89
                                                                       -1
     4
            2021-05-12T17:03:39.090670Z
                                                      STATUS
                                                               82
                                                                       -1
            2021-05-12T18:20:57.942337Z
     99995
                                                        PING
                                                                       -1
                                                                1
     99996
            2021-05-12T18:20:57.942417Z
                                                        PONG
                                                                1
                                                                       -1
     99997
            2021-05-12T18:20:58.064457Z
                                           0
                                                        PING
                                                                1
                                                                       -1
            2021-05-12T18:20:58.250691Z
                                                                1
     99998
                                                        PONG
                                                                       -1
     99999
            2021-05-12T18:21:00.314981Z
                                                        PING
                                                                       -1
     [100000 rows x 5 columns]
[4]: data.describe()
[4]:
                        sz
                                  height
            100000.000000
                            1.000000e+05
     count
     mean
               648.728870
                            8.270616e+03
     std
              5617.249267
                            1.230288e+05
    min
                 1.000000 -1.000000e+00
     25%
                 1.000000 -1.000000e+00
     50%
                42.000000 -1.000000e+00
     75%
                89.000000 -1.000000e+00
            185006.000000 1.838191e+06
     max
[5]: pd.pivot_table(data, values=["sz"], index=["type"], columns=["io"], aggfunc=np.
      ⇒sum)
```

```
io
                                                Ι
                                                           0
     type
     BLOCK_HASH_REQUEST_MESSAGE
                                                     1386.0
                                              {\tt NaN}
     BLOCK HASH RESPONSE MESSAGE
                                           4576.0
                                                         NaN
     BLOCK_HEADERS_REQUEST_MESSAGE
                                                     4573.0
                                              {\tt NaN}
     BLOCK HEADERS RESPONSE MESSAGE
                                       17377839.0
                                                         NaN
     BLOCK_MESSAGE
                                        2595739.0
                                                         NaN
     BODY_REQUEST_MESSAGE
                                                   739462.0
                                              {\tt NaN}
     BODY_RESPONSE_MESSAGE
                                       39069686.0
                                                     3030.0
     DISCONNECT
                                           4940.0
                                                         NaN
     GET_BLOCK_MESSAGE
                                             38.0
                                                     15504.0
     NEW_BLOCK_HASHES
                                         166797.0
                                                         NaN
     PING
                                          10035.0
                                                    10034.0
     PONG
                                          10025.0
                                                    10035.0
     SKELETON_REQUEST_MESSAGE
                                              NaN
                                                       638.0
     SKELETON_RESPONSE_MESSAGE
                                          40988.0
                                                         NaN
                                                   202622.0
     STATUS
                                         202786.0
     STATUS_MESSAGE
                                                   326452.0
                                         266201.0
     TRANSACTIONS
                                        3809501.0
                                                         NaN
[6]: pd.pivot table(data, values=["sz"], index=["type"], aggfunc=np.sum)
[6]:
                                             sz
     type
     BLOCK_HASH_REQUEST_MESSAGE
                                           1386
     BLOCK_HASH_RESPONSE_MESSAGE
                                           4576
     BLOCK_HEADERS_REQUEST_MESSAGE
                                           4573
     BLOCK HEADERS RESPONSE MESSAGE
                                       17377839
     BLOCK MESSAGE
                                        2595739
     BODY REQUEST MESSAGE
                                         739462
     BODY_RESPONSE_MESSAGE
                                       39072716
     DISCONNECT
                                           4940
     GET_BLOCK_MESSAGE
                                          15542
     NEW_BLOCK_HASHES
                                         166797
     PING
                                          20069
     PONG
                                          20060
     SKELETON_REQUEST_MESSAGE
                                            638
     SKELETON_RESPONSE_MESSAGE
                                          40988
     STATUS
                                         405408
     STATUS_MESSAGE
                                         592653
     TRANSACTIONS
                                        3809501
[7]: data.plot(x="time", y="sz", figsize=(10,5))
[7]: <AxesSubplot:xlabel='time'>
```

SZ

[5]:



2021-05-12T17:03:380629205-172T17:19:5205270006272T17:34:3804280695122T17:50:0@06281805722T18:05:57.835623Z