```
import pandas as pd
from matplotlib import dates as mpl_date
import matplotlib.pyplot as plt


df = pd.read_csv("Disk.csv")


df.drop(columns=df.columns[0], axis=1, inplace=True)


df.describe()
```

| | Time_Elapsed | Disk_Precentage |
|---|---|---|
| **count** | 256901.000000 | 256901.000000 |
| **mean** | 12961.518333 | 58.784063 |
| **std** | 7481.963909 | 8.134465 |
| **min** | 0.000093 | 34.800000 |
| **25%** | 6483.000504 | 53.800000 |
| **50%** | 12960.399657 | 59.600000 |
| **75%** | 19441.463483 | 65.600000 |
| **max** | 25921.242811 | 70.600000 |

```
dfH = []
dfm = []
dfs = []
for index, row in df.iterrows():
    timestamp = row['Time']
    H,m,s = timestamp.split(':')
    dfH.append(H)
    dfm.append(m)
    dfs.append(s)

df['H'] = dfH
df['m'] = dfm
df['s'] = dfs

print(type(df))
df.head()
```

```
<class 'pandas.core.frame.DataFrame'>
```

| | Time | Time_Elapsed | Disk_Precentage | H | m | s |
|---|---|---|---|---|---|---|
| **0** | 04:18:35 | 0.000093 | 34.8 | 04 | 18 | 35 |
| **1** | 04:18:35 | 0.100363 | 34.8 | 04 | 18 | 35 |
| **2** | 04:18:35 | 0.201091 | 34.8 | 04 | 18 | 35 |
| **3** | 04:18:35 | 0.301506 | 34.8 | 04 | 18 | 35 |
| **4** | 04:18:36 | 0.402026 | 34.8 | 04 | 18 | 36 |

```
Time = []
for index, row in df.iterrows():
    Time.append(row['H']+':'+row['m']+':'+row['s'])

newDF = pd.DataFrame()
newDF['Time'] = Time
newDF['Disk_Precentage'] = df['Disk_Precentage']
newDF['Time'] = pd.to_datetime(newDF['Time'])
newDF
```

```
<ipython-input-7-be1d9999c7ad>:8: UserWarning: Could not infer format, so each eleme
  newDF['Time'] = pd.to_datetime(newDF['Time'])
```

| | Time | Disk_Precentage |
|---|---|---|
| 0 | 2024-06-22 04:18:35 | 34.8 |
| 1 | 2024-06-22 04:18:35 | 34.8 |
| 2 | 2024-06-22 04:18:35 | 34.8 |
| 3 | 2024-06-22 04:18:35 | 34.8 |
| 4 | 2024-06-22 04:18:36 | 34.8 |
| ... | ... | ... |
| 256896 | 2024-06-22 11:30:36 | 70.6 |
| 256897 | 2024-06-22 11:30:36 | 70.6 |
| 256898 | 2024-06-22 11:30:36 | 70.6 |
| 256899 | 2024-06-22 11:30:36 | 70.6 |
| 256900 | 2024-06-22 11:30:36 | 70.6 |

256901 rows × 2 columns

```
!pip install pandasql
```

```
Collecting pandasql
  Downloading pandasql-0.7.3.tar.gz (26 kB)
  Preparing metadata (setup.py) ... done
Requirement already satisfied: numpy in /usr/local/lib/python3.10/dist-packages (from pandasql) (1.25.2)
Requirement already satisfied: pandas in /usr/local/lib/python3.10/dist-packages (from pandasql) (2.0.3)
Requirement already satisfied: sqlalchemy in /usr/local/lib/python3.10/dist-packages (from pandasql) (2.0.30)
Requirement already satisfied: python-dateutil>=2.8.2 in /usr/local/lib/python3.10/dist-packages (from pandas->pandasql) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas->pandasql) (2023.4)
Requirement already satisfied: tzdata>=2022.1 in /usr/local/lib/python3.10/dist-packages (from pandas->pandasql) (2024.1)
Requirement already satisfied: typing-extensions>=4.6.0 in /usr/local/lib/python3.10/dist-packages (from sqlalchemy->pandasql) (4.1
Requirement already satisfied: greenlet!=0.4.17 in /usr/local/lib/python3.10/dist-packages (from sqlalchemy->pandasql) (3.0.3)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.8.2->pandas->pandasql)
Building wheels for collected packages: pandasql
  Building wheel for pandasql (setup.py) ... done
  Created wheel for pandasql: filename=pandasql-0.7.3-py3-none-any.whl size=26771 sha256=d5965191722a6c047390d8e554609cb40af4c9ed3b
  Stored in directory: /root/.cache/pip/wheels/e9/bc/3a/8434bdcccf5779e72894a9b24fecbdcaf97940607eaf4bcdf9
Successfully built pandasql
Installing collected packages: pandasql
Successfully installed pandasql-0.7.3
```

```
from pandasql import sqldf
sql = lambda q: sqldf(q, globals())
newDF = sqldf("SELECT * FROM newDF WHERE Time BETWEEN '2024-06-22 04:18:35' AND '2024-06-22 04:19:35'")
newDF
```

| | Time | Disk_Precentage |
|---|---|---|
| 0 | 2024-06-22 04:18:35.000000 | 34.8 |
| 1 | 2024-06-22 04:18:35.000000 | 34.8 |
| 2 | 2024-06-22 04:18:35.000000 | 34.8 |
| 3 | 2024-06-22 04:18:35.000000 | 34.8 |
| 4 | 2024-06-22 04:18:36.000000 | 34.8 |
| ... | ... | ... |
| 582 | 2024-06-22 04:19:34.000000 | 35.1 |
| 583 | 2024-06-22 04:19:34.000000 | 35.1 |
| 584 | 2024-06-22 04:19:34.000000 | 35.1 |
| 585 | 2024-06-22 04:19:34.000000 | 35.1 |
| 586 | 2024-06-22 04:19:34.000000 | 35.1 |

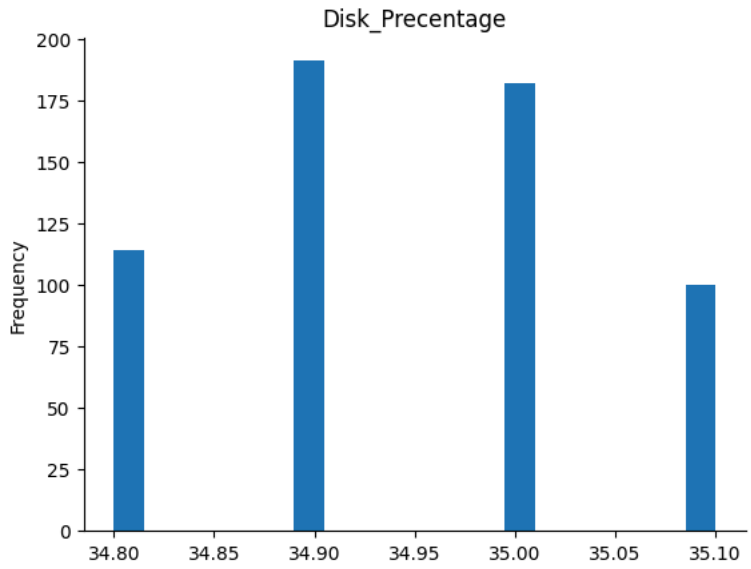
587 rows × 2 columns

Langkah berikutnya: Buat kode dengan newDF | Lihat plot yang direkomendasikan

## Disk_Precentage

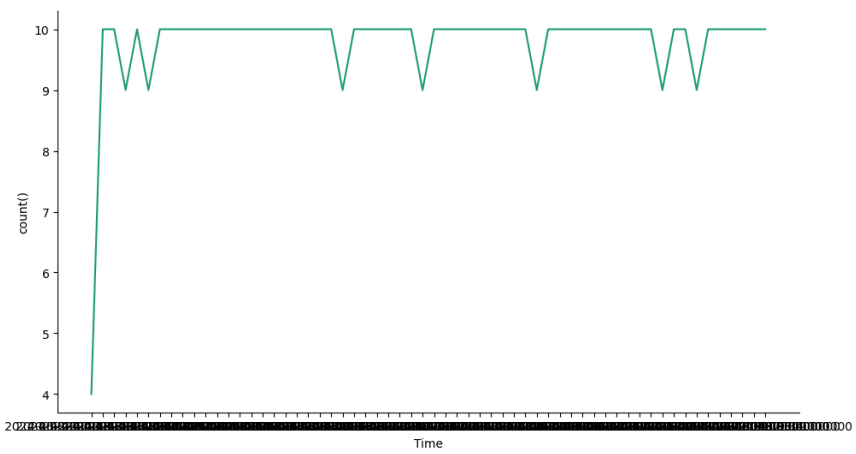
```
# @title Disk_Precentage
```

```
from matplotlib import pyplot as plt
newDF['Disk_Precentage'].plot(kind='hist', bins=20, title='Disk_Precentage')
plt.gca().spines[['top', 'right',]].set_visible(False)
```



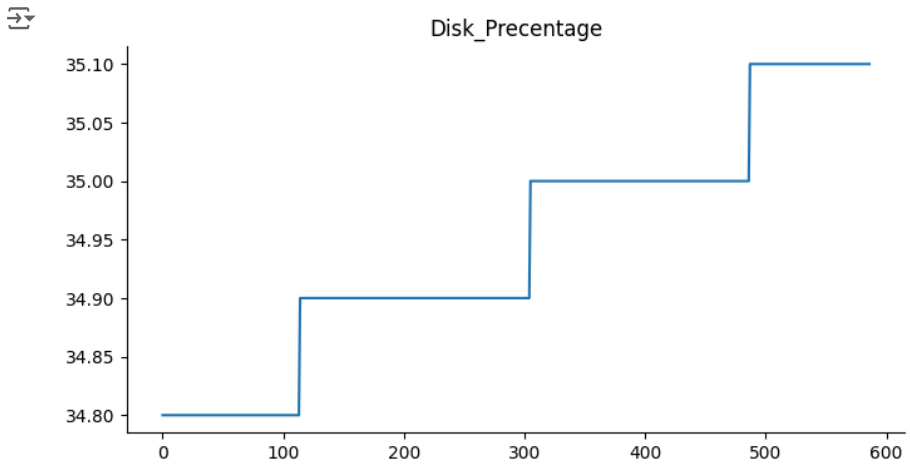

## Time vs count()

```
# @title Time vs count()

from matplotlib import pyplot as plt
import seaborn as sns
def _plot_series(series, series_name, series_index=0):
  palette = list(sns.palettes.mpl_palette('Dark2'))
  counted = (series['Time']
               .value_counts()
             .reset_index(name='counts')
             .rename({'index': 'Time'}, axis=1)
             .sort_values('Time', ascending=True))
  xs = counted['Time']
  ys = counted['counts']
  plt.plot(xs, ys, label=series_name, color=palette[series_index % len(palette)])

fig, ax = plt.subplots(figsize=(10, 5.2), layout='constrained')
df_sorted = newDF.sort_values('Time', ascending=True)
_plot_series(df_sorted, '')
sns.despine(fig=fig, ax=ax)
plt.xlabel('Time')
_ = plt.ylabel('count()')
```



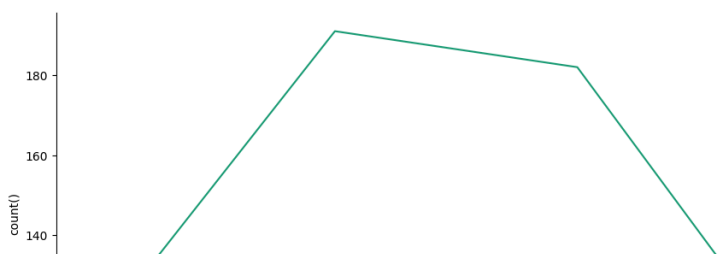
## Disk_Precentage

```
# @title Disk_Precentage

from matplotlib import pyplot as plt
newDF['Disk_Precentage'].plot(kind='line', figsize=(8, 4), title='Disk_Precentage')
plt.gca().spines[['top', 'right']].set_visible(False)
```




## Disk_Precentage vs count()

```
# @title Disk_Precentage vs count()

from matplotlib import pyplot as plt
import seaborn as sns
def _plot_series(series, series_name, series_index=0):
  palette = list(sns.palettes.mpl_palette('Dark2'))
  counted = (series['Disk_Precentage']
               .value_counts()
             .reset_index(name='counts')
             .rename({'index': 'Disk_Precentage'}, axis=1)
             .sort_values('Disk_Precentage', ascending=True))
  xs = counted['Disk_Precentage']
  ys = counted['counts']
  plt.plot(xs, ys, label=series_name, color=palette[series_index % len(palette)])

fig, ax = plt.subplots(figsize=(10, 5.2), layout='constrained')
df_sorted = newDF.sort_values('Disk_Precentage', ascending=True)
_plot_series(df_sorted, '')
sns.despine(fig=fig, ax=ax)
plt.xlabel('Disk_Precentage')
_ = plt.ylabel('count()')
```


180
160
140
count()