

E23CSEU0055 - Assignment 1 - CSET369(P)

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Batch - EB02

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Notebook: [time-series-sem5-main/jul28/one.ipynb at main · GuptajiRocks/time-series-sem5](#)
[-main](#)

Part 1

1.

```
1 Installing collected packages: pywavelets, cloudpickle, stumpy, tsfresh
2 Successfully installed cloudpickle-3.1.1 pywavelets-1.8.0 stumpy-1.13.0 tsfresh-0.21.0
```
2.

```
1 Installing collected packages: autots
2 Successfully installed autots-0.6.21
```
3.

```
1 Successfully installed PyYAML-6.0.2 adagio-0.2.6 aiohappyeyeballs-2.6.1 aiohttp-3.12.14
aiosignal-1.4.0 appdirs-1.4.4
2 coreforecast-0.0.16 darts-0.36.0 frozenlist-1.7.0 fs-2.4.16 fugue-0.9.1 holidays-0.77
lightning-utilities-0.15.0 multidict-6.6.3 narwhals-2.0.0 nfoursid-1.0.2 propcache-0.3.2
3 pyod-2.0.5 pytorch-lightning-2.5.2
4 shap-0.48.0 slicer-0.0.8 statsforecast-2.0.2 tensorboardX-2.6.4 torchmetrics-1.8.0 triad-0.9.8
utilsforecast-0.2.12 xarray-2025.7.1 xgboost-3.0.2 yar1-1.20.1
```
4.

```
1 Installing collected packages: stanio, importlib_resources, cmdstanpy, prophet
2 Successfully installed cmdstanpy-1.2.5 importlib_resources-6.5.2 prophet-1.1.7 stanio-0.5.1
```

Part 2:

1.

```
1 df_air = pd.read_csv("datasets\\AirPassengers.csv")
2 print(df_air)
3
4 #Output
5 Month  #Passengers
6 0    1949-01      112
7 1    1949-02      118
8 2    1949-03      132
9 3    1949-04      129
10 4    1949-05      121
11 ..      ...      ...
12 139  1960-08      606
13 140  1960-09      508
14 141  1960-10      461
```

```

15 142 1960-11      390
16 143 1960-12      432
17
18 [144 rows x 2 columns]

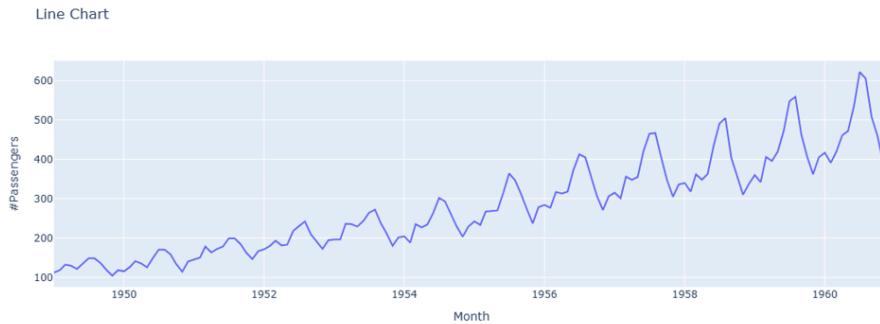
```

2. Line Chart

```

a. 1 linec = px.line(df_air, x="Month", y="#Passengers", title="Line Chart")
    2 linec.show()

```



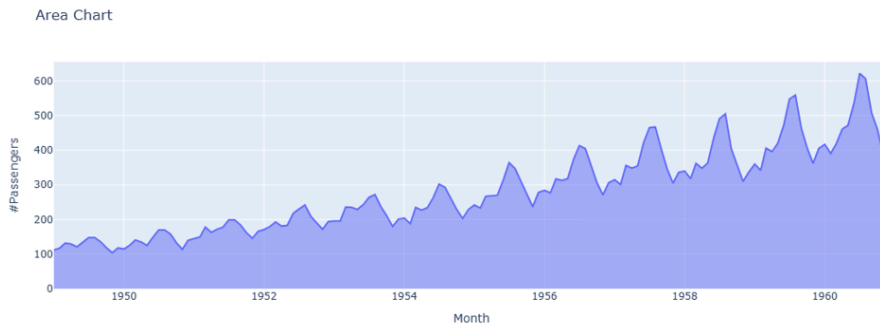
b.

3. Line Chart

```

a. 1 areac = px.area(df_air, x="Month", y="#Passengers", title="Area Chart")
    2 areac.show()

```



4. Write program for plotting multivariate data (Previous day's close price, Previous day's close price, Highest price in day, Lowest price in day) in stock Market Data.

```

a. 1 df = pd.read_csv('datasets\\TCS.csv')
    2
    3 selected_columns = ['Prev Close', 'High', 'Low']
    4 df_selected = df[selected_columns]
    5
    6 sns.pairplot(df_selected)
    7 plt.suptitle("Pair Plot of Previous Day's Close, Day's High, and Day's Low Prices", y=1.02)
    8
    9 plt.figure(figsize=(14, 7))
   10 plt.plot(df['Date'], df['Prev Close'], label="Previous Day's Close")
   11 plt.plot(df['Date'], df['High'], label="Day's High")

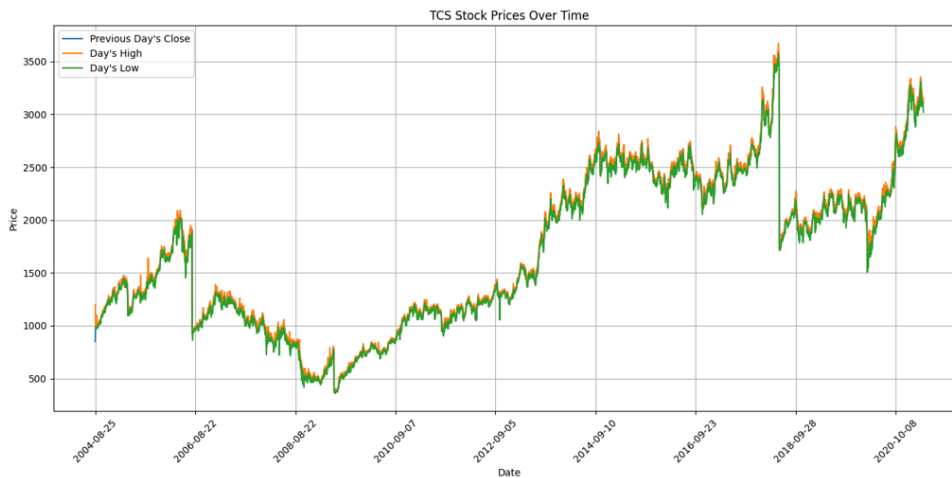
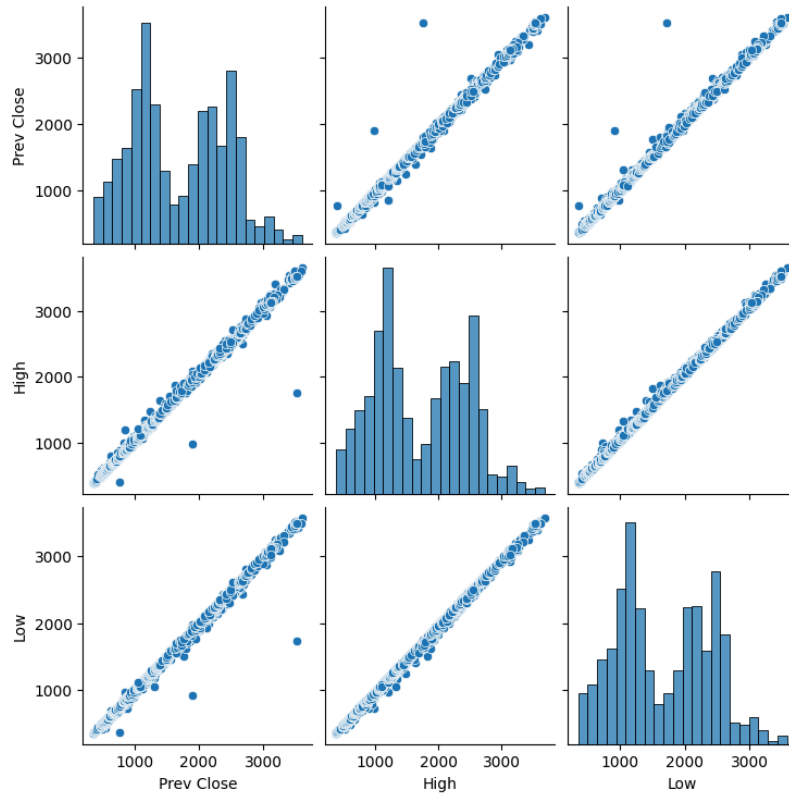
```

```

12 plt.plot(df['Date'], df['Low'], label="Day's Low")
13 plt.xlabel("Date")
14 plt.ylabel("Price")
15 plt.title("TCS Stock Prices Over Time")
16 plt.legend()
17 plt.grid(True)
18 plt.xticks(rotation=45)
19 ax = plt.gca()
20 ax.xaxis.set_major_locator(plt.MaxNLocator(10))
21 plt.tight_layout()

```

b. Pair Plot of Previous Day's Close, Day's High, and Day's Low Prices



c.