In [32]:
```python
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
%pip install -q seaborn
import seaborn as sns
dt=pd.read_csv('Minor_Project_Data_set_(Stock_Price_Prediction)[1](Stock Price dataset).csv')
dt[['Open']]
```

Out[32]:

	Open
0	262.000000
1	247.699997
2	266.579987
3	267.079987
4	253.850006
...	...
1004	401.970001
1005	432.959991
1006	448.250000
1007	421.440002
1008	407.309998

1009 rows × 1 columns

In [33]:
```python
dt
```

Out[33]:

	Date	Open	High	Low	Close	Adj Close	Volume
0	2018-02-05	262.000000	267.899994	250.029999	254.259995	254.259995	11896100
1	2018-02-06	247.699997	266.700012	245.000000	265.720001	265.720001	12595800
2	2018-02-07	266.579987	272.450012	264.329987	264.559998	264.559998	8981500
3	2018-02-08	267.079987	267.619995	250.000000	250.100006	250.100006	9306700
4	2018-02-09	253.850006	255.800003	236.110001	249.470001	249.470001	16906900
...	...	...	...	...	...	...	...
1004	2022-01-31	401.970001	427.700012	398.200012	427.140015	427.140015	20047500
1005	2022-02-01	432.959991	458.480011	425.540009	457.130005	457.130005	22542300
1006	2022-02-02	448.250000	451.980011	426.480011	429.480011	429.480011	14346000
1007	2022-02-03	421.440002	429.260010	404.279999	405.600006	405.600006	9905200
1008	2022-02-04	407.309998	412.769989	396.640015	410.170013	410.170013	7782400

1009 rows × 7 columns

In [34]:
```python
dt.loc[[3]]
```

Out[34]:

	Date	Open	High	Low	Close	Adj Close	Volume
3	2018-02-08	267.079987	267.619995	250.0	250.100006	250.100006	9306700

In [35]:
```python
dt.loc[[3],'Open']
```

Out[35]:
```
3    267.079987
Name: Open, dtype: float64
```

In [36]:
```python
dt[dt['Adj Close'].isna()]
```

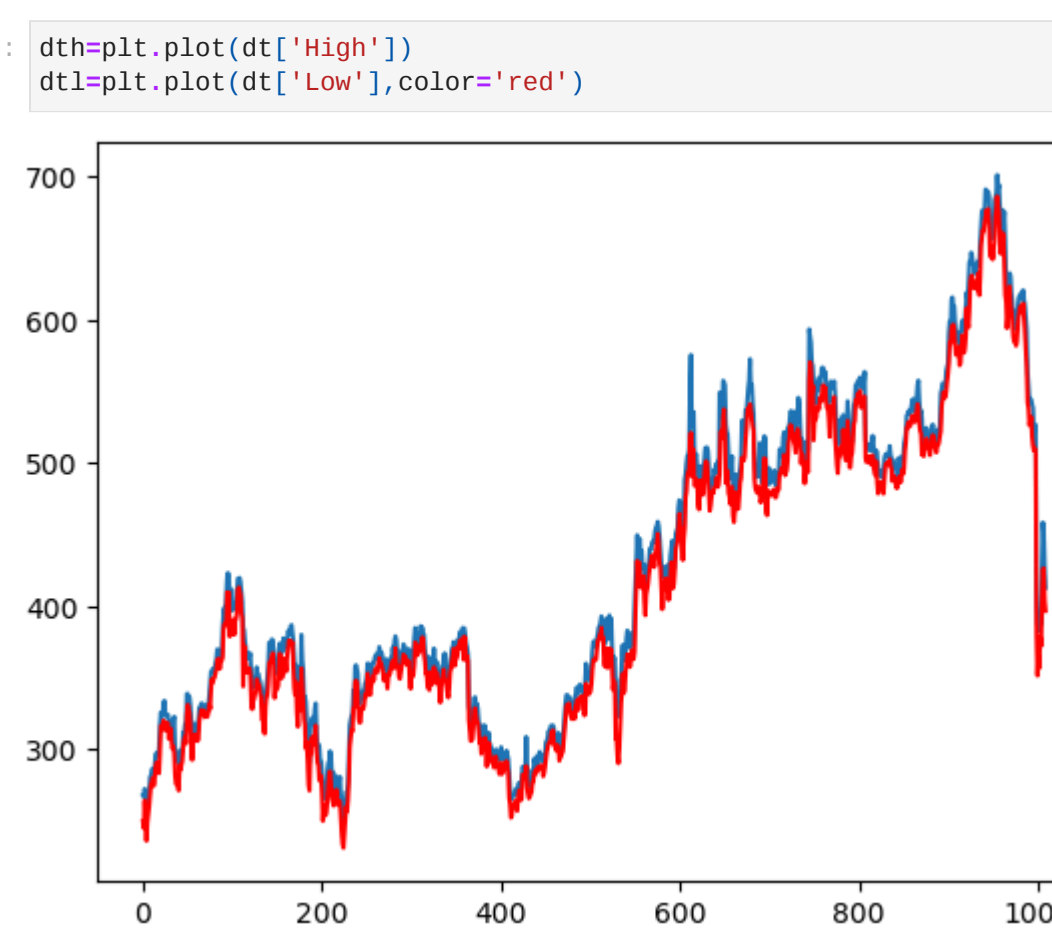
Out[36]:

Date	Open	High	Low	Close	Adj Close	Volume

In [37]:
```python
dt.iloc[1,:]
```

Out[37]:
```
Date          2018-02-06
Open          247.699997
High          266.700012
Low                245.0
Close         265.720001
Adj Close     265.720001
Volume          12595800
Name: 1, dtype: object
```

In [38]:
```python
dth=plt.plot(dt['High'])
dtl=plt.plot(dt['Low'],color='red')
```



In [39]:
```python
dt.groupby(['High']).count()
```

Out[39]:

High	Date	Open	Low	Close	Adj Close	Volume
250.649994	1	1	1	1	1	1
254.500000	1	1	1	1	1	1
255.589996	1	1	1	1	1	1
255.800003	1	1	1	1	1	1
259.149994	1	1	1	1	1	1
...	...	...	...	...	...	...
689.969971	1	1	1	1	1	1
690.969971	1	1	1	1	1	1
691.739990	1	1	1	1	1	1
694.159973	1	1	1	1	1	1
700.989990	1	1	1	1	1	1

983 rows × 6 columns

In [40]:
```python
dt['Volume'].mean()
```

Out[40]: 7570685.03468781

In [41]:
```python
dt['High'].mean()
```

Out[41]: 425.3207030802775

In [42]:
```python
%matplotlib inline
dt3=dt.plot(x='Date',y='Close',kind='line')
dt3
```

Out[42]: <AxesSubplot:xlabel='Date'>

In [43]:
```python
dt['result']= dt['Open']-dt['Close']
dt
```

Out[43]:

	Date	Open	High	Low	Close	Adj Close	Volume	result
0	2018-02-05	262.000000	267.899994	250.029999	254.259995	254.259995	11896100	7.740005
1	2018-02-06	247.699997	266.700012	245.000000	265.720001	265.720001	12595800	-18.020004
2	2018-02-07	266.579987	272.450012	264.329987	264.559998	264.559998	8981500	2.019989
3	2018-02-08	267.079987	267.619995	250.000000	250.100006	250.100006	9306700	16.979981
4	2018-02-09	253.850006	255.800003	236.110001	249.470001	249.470001	16906900	4.380005
...	...	...	...	...	...	...	...	...
1004	2022-01-31	401.970001	427.700012	398.200012	427.140015	427.140015	20047500	-25.170014
1005	2022-02-01	432.959991	458.480011	425.540009	457.130005	457.130005	22542300	-24.170014
1006	2022-02-02	448.250000	451.980011	426.480011	429.480011	429.480011	14346000	18.769989
1007	2022-02-03	421.440002	429.260010	404.279999	405.600006	405.600006	9905200	15.839996
1008	2022-02-04	407.309998	412.769989	396.640015	410.170013	410.170013	7782400	-2.860015

1009 rows × 8 columns

In [44]:
```python
dt['qty']=dt['Volume']/dt['Close']
dt
```

Out[44]:

	Date	Open	High	Low	Close	Adj Close	Volume	result	qty
0	2018-02-05	262.000000	267.899994	250.029999	254.259995	254.259995	11896100	7.740005	46787.147935
1	2018-02-06	247.699997	266.700012	245.000000	265.720001	265.720001	12595800	-18.020004	47402.528799
2	2018-02-07	266.579987	272.450012	264.329987	264.559998	264.559998	8981500	2.019989	33948.820940
3	2018-02-08	267.079987	267.619995	250.000000	250.100006	250.100006	9306700	16.979981	37211.914341
4	2018-02-09	253.850006	255.800003	236.110001	249.470001	249.470001	16906900	4.380005	67771.274832
...	...	...	...	...	...	...	...	...	...
1004	2022-01-31	401.970001	427.700012	398.200012	427.140015	427.140015	20047500	-25.170014	46934.258782
1005	2022-02-01	432.959991	458.480011	425.540009	457.130005	457.130005	22542300	-24.170014	49312.667629
1006	2022-02-02	448.250000	451.980011	426.480011	429.480011	429.480011	14346000	18.769989	33403.184392
1007	2022-02-03	421.440002	429.260010	404.279999	405.600006	405.600006	9905200	15.839996	24421.104175
1008	2022-02-04	407.309998	412.769989	396.640015	410.170013	410.170013	7782400	-2.860015	18973.595712

1009 rows × 9 columns

In [45]:
```python
dt.drop(['qty'],axis=1,inplace=True)
dt
```

Out[45]:

	Date	Open	High	Low	Close	Adj Close	Volume	result
0	2018-02-05	262.000000	267.899994	250.029999	254.259995	254.259995	11896100	7.740005
1	2018-02-06	247.699997	266.700012	245.000000	265.720001	265.720001	12595800	-18.020004
2	2018-02-07	266.579987	272.450012	264.329987	264.559998	264.559998	8981500	2.019989
3	2018-02-08	267.079987	267.619995	250.000000	250.100006	250.100006	9306700	16.979981
4	2018-02-09	253.850006	255.800003	236.110001	249.470001	249.470001	16906900	4.380005
...	...	...	...	...	...	...	...	...
1004	2022-01-31	401.970001	427.700012	398.200012	427.140015	427.140015	20047500	-25.170014
1005	2022-02-01	432.959991	458.480011	425.540009	457.130005	457.130005	22542300	-24.170014
1006	2022-02-02	448.250000	451.980011	426.480011	429.480011	429.480011	14346000	18.769989
1007	2022-02-03	421.440002	429.260010	404.279999	405.600006	405.600006	9905200	15.839996
1008	2022-02-04	407.309998	412.769989	396.640015	410.170013	410.170013	7782400	-2.860015

1009 rows × 8 columns

In [46]:
```python
dt['Date']=pd.to_datetime(dt['Date'])
dt['year']=dt['Date'].dt.year
dt['month']=dt['Date'].dt.month
dt['day']=dt['Date'].dt.day
dt.drop(['Date'],axis=1,inplace=True)
dt.head()
```

Out[46]:

	Open	High	Low	Close	Adj Close	Volume	result	year	month	day
0	262.000000	267.899994	250.029999	254.259995	254.259995	11896100	7.740005	2018	2	5
1	247.699997	266.700012	245.000000	265.720001	265.720001	12595800	-18.020004	2018	2	6
2	266.579987	272.450012	264.329987	264.559998	264.559998	8981500	2.019989	2018	2	7
3	267.079987	267.619995	250.000000	250.100006	250.100006	9306700	16.979981	2018	2	8
4	253.850006	255.800003	236.110001	249.470001	249.470001	16906900	4.380005	2018	2	9

In [56]:
```python
x=dt.iloc[:,:3]
x
y=dt['Close']
y
```

Out[56]:
```
0       254.259995
1       265.720001
2       264.559998
3       250.100006
4       249.470001
           ...
1004    427.140015
1005    457.130005
1006    429.480011
1007    405.600006
1008    410.170013
Name: Close, Length: 1009, dtype: float64
```

In [63]:
```python
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.2)
from sklearn.linear_model import LinearRegression
model=LinearRegression()
model.fit(x_train,y_train)
model.predict(x_train)
```

Out[63]:
```
array([367.84993357, 340.21245489, 492.08382317, 367.15706022,
       294.28634239, 345.28441839, 266.2448006 , 489.13707376,
       292.86920281, 500.74336551, 545.88343494, 314.31373494,
       362.21221374, 398.67917916, 309.92575586, 375.85828512,
       316.58275954, 362.66087507, 503.71342752, 492.93938679,
       508.66631513, 507.44480954, 352.91687929, 271.64096905,
       551.0228036 , 583.91312203, 446.90111762, 681.63293927,
       470.09187075, 609.31633469, 481.3261063 , 525.70888012,
       350.01148841, 487.02371676, 374.00476272, 310.16849504,
       627.33325186, 290.19431548, 484.3881172 , 368.62232624,
       269.41113948, 307.33500333, 662.70578098, 365.66946248,
       479.24647525, 352.94794266, 508.28132281, 635.96533144,
       255.89619406, 395.03007254, 339.32759337, 365.14730799,
       280.14853452, 332.6638556 , 292.81002305, 298.66858184,
       295.98482077, 422.20527872, 508.8981036 , 513.39028707,
       365.3598194 , 494.02123123, 656.27667096, 572.30570974,
       447.32638461, 517.4228622 , 288.0578547 , 500.03404069,
       359.64289236, 284.25944197, 364.63410004, 298.69216718,
       356.06885289, 487.85259536, 280.89967918, 412.2113881 ,
       265.79371593, 410.97084114, 303.7222893 , 529.60819814,
       514.84288529, 337.67551046, 297.73489979, 519.67555044,
       357.99503737, 279.59981097, 608.63716842, 420.41980284,
       274.04226166, 328.37580789, 263.01359828, 310.33779533,
       417.81979318, 342.1319356 , 523.4576739 , 495.10965223,
       371.68906166, 547.90707271, 555.36494431, 309.62363242,
       302.54714389, 425.02360316, 509.16352106, 273.26422389,
       366.72654363, 569.16981248, 296.53447634, 345.52158442,
       358.88927581, 332.85323662, 492.51709932, 269.13085641,
       382.76283647, 366.07818221, 273.58440738, 539.37497806,
       368.68287575, 529.86726016, 322.81772354, 379.92102565,
       392.51043121, 293.81623154, 351.6988264 , 521.19531602,
       270.80883822, 359.93603815, 356.90339512, 341.11179554,
       277.71899949, 340.97601279, 494.35430744, 284.6964724 ,
       575.45286819, 357.64936795, 366.35647831, 510.47851857,
       498.81492279, 314.8113486 , 290.39992482, 579.07205731,
       499.81321084, 387.84479244, 555.24915266, 620.18736736,
       329.11906772, 375.59131485, 378.10159825, 306.88089981,
       480.70208689, 331.90405786, 352.46167463, 473.65048918,
       347.76744282, 352.71773673, 285.23975091, 414.297342  ,
       385.17908885, 500.15178481, 531.43383379, 332.73304728,
       358.7977551 , 364.47934321, 337.94256816, 383.02093398,
       255.17493422, 514.34595587, 286.74561949, 360.60151631,
       490.10801905, 513.17500372, 315.67273662, 338.08706554,
       275.70453321, 596.16707413, 502.1434245 , 518.85279065,
       370.93309434, 322.23164889, 286.75790922, 502.69667842,
       294.80536949, 330.64279008, 360.97040036, 357.1818885 ,
       557.21502335, 501.96875994, 345.33205812, 628.45270684,
       484.80330725, 334.48057427, 260.32304631, 314.82737468,
       330.00113947, 259.06969691, 543.57880553, 390.37345992,
       367.17642001, 328.89864119, 558.42996263, 309.46790338,
       376.11134293, 510.50702914, 324.2278435 , 365.90875222,
       408.47077406, 492.43425271, 525.80662063, 502.77512733,
       354.88156876, 277.24086606, 357.32062504, 310.01412472,
       285.74387155, 364.6111626 , 416.73370525, 483.99057739,
       365.22142394, 289.00151519, 322.36675331, 321.48956315,
       341.04675364, 318.39301586, 521.77252806, 362.49611613,
       394.16361157, 490.75401516, 492.68307   , 412.35602614,
       530.02724364, 501.74438584, 306.52982887, 532.85889174,
       512.17270443, 365.75345603, 669.07726975, 302.79688433,
       443.09626182, 343.74356336, 488.55472667, 506.91796122,
       318.36174509, 341.79172944, 290.84444181, 632.7648379 ,
       686.74272615, 396.0672746 , 381.4081469 , 372.39071832,
       450.30112369, 375.37600805, 505.19903759, 372.73874536,
       530.00004257, 605.17263145, 601.67861142, 673.91317305,
       322.54418136, 489.15846725, 369.8251702 , 363.74437875,
       375.23097699, 439.42323942, 332.7312001 , 344.26705059,
       533.52037178, 357.00202382, 356.08040851, 506.32535247,
       330.81576927, 651.14609168, 278.24160119, 364.2214351 ,
       337.91857868, 383.438838  , 292.91664748, 537.04226596,
       301.43389883, 359.22883937, 307.74525339, 468.27629322,
       545.27716757, 378.85364166, 353.44625677, 375.66753324,
       502.17850982, 270.06231117, 550.43600377, 389.61073418,
       581.43874221, 365.08900816, 528.30877052, 362.28293719,
       558.61933978, 499.87990716, 559.9515347 , 534.27923091,
       542.82861457, 564.53991578, 442.81488531, 482.36579199,
       592.59064706, 540.67524061, 623.66398334, 434.71228859,
       268.58904737, 284.03736111, 533.01767114, 357.64977349,
       323.72176461, 524.98951545, 376.27183845, 297.3865272 ,
       539.00369413, 662.23191325, 254.32468152, 279.35978895,
       293.44064211, 484.206971  , 547.89909205, 247.13010577,
       338.95935117, 249.35668245, 625.82938374, 524.93225943,
       259.25267683, 514.82436311, 325.08738824, 306.19831992,
       501.77225169, 391.37137113, 290.87701208, 527.03386172,
       312.28110378, 285.77722375, 553.12201762, 379.51213356,
       508.84684475, 534.23946305, 546.69484903, 361.18055472,
       666.68767037, 552.83400617, 518.67224379, 313.49080281,
       481.84461095, 267.55005684, 616.71806843, 588.35683236,
       335.14885806, 268.70437003, 286.40339302, 345.42843152,
       440.26335937, 490.72002283, 439.23215198, 662.61601725,
       493.17625173, 331.43340749, 415.78642399, 543.52039573,
       360.06424825, 482.38949573, 334.31404835, 288.64859571,
       510.35217566, 609.97288908, 377.7424846 , 276.55953347,
       484.81168105, 506.67121205, 500.00141247, 283.97459397,
       521.16772569, 373.24875862, 351.9920589 , 515.50922235,
       341.20813324, 353.92504008, 346.7981402 , 358.29759222,
       610.96863375, 294.9587838 , 609.65648421, 334.116985  ,
       346.65734414, 486.10147955, 338.17209527, 664.73035593,
       331.97466963, 396.98263698, 483.20381225, 450.01817022,
       318.37260915, 360.39101919, 534.00480597, 324.46303802,
       489.25802298, 350.17743719, 585.58956814, 516.31069631,
       343.87627479, 340.88108232, 473.34431521, 423.14843443,
       316.08201657, 357.39983125, 531.41725052, 320.50810423,
       241.77314787, 542.66232273, 479.41977978, 611.88214214,
       384.30031958, 377.30175184, 435.20064463, 319.03495348,
       359.37565507, 441.46226933, 309.10742259, 510.83736398,
       325.62828487, 295.44427458, 519.23767326, 500.08006783,
       285.95205943, 330.64735509, 294.92372042, 634.27080081,
       310.66274996, 267.78650416, 511.75345987, 307.56965272,
       636.09882318, 492.5428631 , 353.00825149, 364.47806957,
       337.6680736 , 507.30226808, 521.32338499, 292.47165946,
       314.89675449, 363.81243868, 636.16765498, 291.59887957,
       319.14278257, 487.82222027, 606.61811956, 308.29228866,
       328.48176232, 290.95704696, 516.11152456, 506.19545064,
       510.68907539, 328.59375289, 493.41651392, 340.69409418,
       325.98364132, 564.91373156, 678.89767303, 508.03391997,
       356.78569702, 271.63271318, 352.69318293, 512.75425195,
       355.73733446, 585.4503718 , 460.04462536, 554.3435077 ,
       380.67685125, 372.29877036, 324.42887205, 467.05806597,
       425.64710176, 326.73302266, 274.79487211, 498.44040225,
       419.99545644, 613.18870375, 275.47321001, 590.33564038,
       524.0806002 , 532.11481922, 481.70910389, 291.22975581,
       524.00855825, 361.20625867, 300.67574909, 284.86843154,
       512.80805997, 369.71881527, 304.61555239, 325.06435357,
       338.49019267, 515.51033545, 312.24409434, 379.91757944,
       301.3231779 , 359.07546406, 287.26802807, 344.99259154,
       263.58185449, 423.14450111, 628.22358796, 424.43453059,
       346.53297383, 477.92795739, 332.65960659, 274.48610635,
       376.4251348 , 519.4569638 , 419.55388871, 550.4803808 ,
       265.28257444, 349.03362034, 316.26068837, 355.49474621,
       366.42285729, 433.97300134, 374.28914221, 502.08276242,
       518.58572535, 631.27256343, 492.22941826, 295.3269188 ,
       555.34486246, 543.13941296, 516.28121196, 476.40669391,
       583.47194149, 373.80949089, 300.31796212, 407.25473643,
       420.26112962, 346.8075595 , 330.26955156, 538.98292741,
       313.88914074, 536.35236187, 602.74694458, 352.15012182,
       291.51874272, 649.09324565, 314.26788313, 379.13101868,
       465.59783401, 327.42475148, 530.14650236, 362.10098177,
       627.60191923, 260.47875132, 488.97996375, 585.33557134,
       512.73056471, 328.77640941, 317.3324217 , 307.68642049,
       527.06360544, 530.67531161, 357.61799527, 513.59853347,
       577.7221045 , 267.65226294, 392.84541537, 479.58207617,
       295.4879362 , 608.18804045, 294.79704644, 353.79787302,
       364.80664642, 353.80380291, 356.93599546, 277.20760241,
       323.71723597, 332.77449929, 357.4908235 , 331.42296933,
       293.67474597, 434.26926785, 366.7643909 , 542.67506678,
       392.01682334, 344.89101744, 667.95193898, 349.68807553,
       485.47527314, 328.89119839, 489.93143749, 318.91606121,
       295.25918622, 615.66517894, 276.03204946, 360.95414497,
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```

In [68]:
```python
dat={'Open':[262],'High':[267],'Low':[250]}
model.predict(pd.DataFrame(dat))
```

Out[68]:
```
array([257.00805845])
```

In [ ]: