In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
from scipy import stats
import os
from sklearn.metrics import mean_squared_error,r2_score
import pandastable
from tkinter import *
from pandastable import Table, TableModel
import tkinter as tk
from tkinter import ttk
# import pickle
# import joblib
from sklearn.utils import shuffle
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
```

Data printing

In [28]:

```
datasets=os.listdir("C:\\Users\\kavin\\OneDrive\\Desktop\\datatata")
data=[]
c=input()
c=c.upper()
c=list(c)
for i in range(len(c)):
    if c[i]==' ':
        c[i]='_'
c=''.join(c)
d=c+"__EQ__INDICES__NSE__MINUTE.csv"
c=c+"__EQ__NSE__NSE__MINUTE.csv"
found=0
for i in datasets:
    if i==c:
        found=1
        break
    elif i==d:
        found=1
        c=d
        break

if found:
    path="C:\\Users\\kavin\\OneDrive\\Desktop\\datatata\\"+c
    dataset=pd.read_csv(path)
    dataset['timestamp']=dataset['timestamp'].astype('string')
    dataset[['Date','Time']] = dataset.timestamp.str.split(" ",expand=True,)
    if len(dataset)<200:
        print("Insufficient Data")
    else:
        dataset=dataset.dropna(how="any",subset=['open','high','volume','close'])
        dataset=dataset.drop_duplicates(keep='last')
        dataset['Date']=pd.to_datetime(dataset['Date'])
        print("We will predict stock price daywise")
        reqopen=dataset.groupby('Date')['open'].apply(list).apply(lambda x : x[0])
        reqclose=dataset.groupby('Date')['close'].apply(list).apply(lambda x : x[-1])
        reqhigh=dataset.groupby('Date')['high'].max()
        reqlow=dataset.groupby('Date')['low'].min()
        hropen=[]
        hrclose=[]
        hrhigh=[]
        hrlow=[]
        for k in range(len(reqopen)):
            hropen.append(reqopen[k])
            hrclose.append(reqclose[k])
            hrhigh.append(reqhigh[k])
            hrlow.append(reqlow[k])
        hrdata={'open':hropen,'high':hrhigh,'low':hrlow,'close':hrclose}
        HrData=pd.DataFrame(hrdata)
        dataset=HrData
else:
    print("Company not Present")
```

```
Reliance
We will predict stock price daywise
```

In [30]:

```
dataset.reset_index(drop=False, inplace=True)
dataset
```

Out[30]:

	level_0	index	open	high	low	close
0	0	0	541.63	545.00	536.20	543.50
1	1	1	544.90	548.50	540.55	544.50
2	2	2	546.00	546.50	532.15	533.58
3	3	3	536.00	539.95	534.50	538.50
4	4	4	537.50	542.50	536.55	536.98
...	...	...	...	...	...	...
826	826	826	1580.00	1615.00	1572.50	1574.50
827	827	827	1564.80	1568.35	1465.00	1486.00
828	828	828	1527.00	1527.00	1454.20	1492.50
829	829	829	1469.00	1496.00	1430.20	1436.90
830	830	830	1444.00	1466.60	1415.25	1453.40

831 rows × 6 columns

In [10]:

```
#Independent Variable and Dependent Variable
start=round((0.84)*len(dataset))
x1 = dataset.iloc[700:,1:4].values
y1 = dataset.iloc[700:, -1].values
start
```

Out[10]:

```
698
```

In [11]:

```
# Splitting the dataset into the Training set and Test set
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x1, y1, test_size = 0.2, random_state =
```

In [12]:

```
# # Fitting Multiple Linear Regression to the Training set on open
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(x_train, y_train)
```

Out[12]:

```
LinearRegression()
```

In [13]:

```
# Predicting the Test set results
y_pred = regressor.predict(x_test)
```

In [14]:

```
k=list(y_test-y_pred)
len(k)
```

Out[14]:

```
27
```

In [15]:

```
# accuracy metrics
from sklearn.metrics import mean_squared_error,r2_score
rmse = (np.sqrt(mean_squared_error(y_test, y_pred)))
r2score = r2_score(y_test, y_pred)
```

In [22]:

```


print(r2score)
```

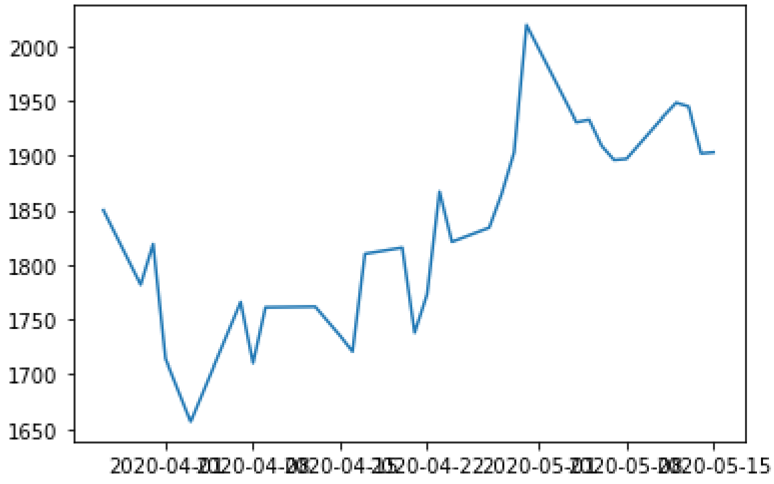
```
0.9362500358355776
```

In [16]:

```
#plt.plot(reqopen[800:])
plt.plot(reqclose[800:])
#plt.plot(reqhigh[800:])
#plt.plot(reqlow[800:])
```

Out[16]:

```
[<matplotlib.lines.Line2D at 0x15971df0>]
```



for close prediction

In [17]:

```
# Independent Variable and Dependent Variable
x2 = dataset.iloc[:,1:4].values
y2= dataset.iloc[:, 4].values
```

In [18]:

```
# Splitting the dataset into the Training set and Test set
x_train, x_test, y_train, y_test = train_test_split(x2, y2, test_size = 0.2, random_state =
```

In [19]:

```
# # Fitting Multiple Linear Regression to the Training set on close
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(x_train, y_train)
```

Out[19]:

```
LinearRegression()
```

In [20]:

```
# Predicting the Test set results
y_pred = regressor.predict(x_test)
```

In [21]:

```
y_test-y_pred
```

Out[21]:

```
array([ -5.37056822,  22.32072588,  -5.49036322,   6.87025901,
         6.55908732,   8.25936051,   5.70183191, -13.44392892,
       -11.92933503, -10.71629298,   3.28490459,   5.49899303,
         0.81630434,   1.2348054 ,   0.33646384,  -1.17319468,
        -0.82085478,  -4.6791002 ,  -3.05922764,  15.75937879,
        11.24121192,   5.87574668, -13.48921097,   7.13800852,
        -3.469555  ,  -4.29096144,  -0.13690944,  -7.91356166,
        -0.76902388,  -5.58939237,   2.52472044,   2.57782299,
         5.23398879,  -2.02143161,   2.55152   ,  -2.82698085,
        -4.13928792,  -6.15728558,   4.77920669,   1.28876559,
        -8.14405729,  -4.22493655,  -1.3024567 ,   0.3114298 ,
        -7.37728197,  -3.3315432 ,  11.43881414,   3.80920823,
        15.27426254,   0.95767247,   8.92144133,  -5.16172983,
         4.28723526,   1.59674177,  24.72510177,  -2.90191036,
        -9.02136179,   8.47366922,  11.96681398,  -2.48803179,
        14.26739077,   8.44201456,   7.10388013,  -1.08487572,
         0.33033863,  -0.76990178, -10.19050763,   4.29161365,
        -5.89759512,  -5.7219656 ,   8.11824706,   1.74839406,
        -1.15055475,   7.66522765,   3.6044027 ,  -6.62119968,
         2.57201224,   9.20303707,  -0.12002348,   5.71271377,
       -18.87773122,  -1.52812554,  -5.38017668,  -2.28599585,
        19.88827429,   0.16634778, -17.83066361, -20.07704197,
        -0.2320824 ,  13.46258916,  18.76381048,  19.77275695,
         0.11519108,  14.1729727 ,  -7.26137809,  11.93055679,
        -5.4279377 , -30.76380055,  -4.70455716,  -8.08087879,
        -4.13614219,  -9.89571013,   7.14808451,  12.72460035,
         4.65463323,   7.0773489 , -85.12299945, -31.38878851,
        -5.08436426,  -0.69765274,  -7.8509926 ,   4.34225253,
         6.48658839,  10.12249005,  23.19686288, -13.33545411,
        -2.64291449,   1.76716579,  22.8961447 ,   1.62284462,
       -20.28470259,  15.11978036,   2.28857992,  -0.91392038,
        -4.06393586,   9.99854955,  -5.45438193, -12.30040894,
         2.22622089, -19.91988605,   9.94112557,   8.8656903 ,
        11.34151979,  11.61176365,  23.67435292,   3.26012095,
         0.41782308,  -4.00408354, -12.90212264,  17.49373041,
         6.063944  ,   2.57191122, -35.90448251, -20.00636259,
         0.86285257,   5.07024909,  -4.69710974,   6.01458033,
        11.66021216,  -1.6687914 ,  10.59193488, -16.80746172,
         9.22469629,  -2.94496129,   8.3011331 ,   7.29636239,
       -10.07583992,   3.24442949,  -8.60518772, -17.19648926,
       -18.80121071,  20.42754114,   2.33771929,   4.74614486,
         5.29515882, -12.20846866,   6.9366503 ])
```

In [22]:

```
# accuracy metrics
from sklearn.metrics import mean_squared_error,r2_score
rmse = (np.sqrt(mean_squared_error(y_test, y_pred)))
r2score = r2_score(y_test, y_pred)
```

In [23]:

```
print(rmse)
print(r2score)
```

```
12.362467669874013
0.9989656455322679
```

In [24]:

```
import os
datasets=os.listdir("F:\PROGRAMMES\pythn\ML Project\HISTORICAL_DATA")
data=[]
c=input()
c=c.upper()
c=list(c)
for i in range(len(c)):
    if c[i]==' ':
        c[i]='_'
c=''.join(c)
d=c+"__EQ__INDICES__NSE__MINUTE.csv"
c=c+"__EQ__NSE__NSE__MINUTE.csv"
found=0
for i in datasets:
    if i==c:
        found=1
        break
    elif i==d:
        found=1
        c=d
        break

if found:
    path="F:\PROGRAMMES\pythn\ML Project\HISTORICAL_DATA\\"+c
    dataset=pd.read_csv(path)
    dataset=pd.DataFrame(dataset)
    dataset['timestamp']=dataset['timestamp'].astype('string')
    dataset[['Date','Time']] = dataset.timestamp.str.split(" ",expand=True,)
    if len(dataset)<200:
        print("Insufficient Data")
    else:
        dataset=dataset.dropna(how="any",subset=['open','high','volume','close'])
        dataset=dataset.drop_duplicates(keep='last')
        dataset['Date']=pd.to_datetime(dataset['Date'])
        dataset['Time']=dataset['Time'].apply(lambda i:i[:2])
dataset
```

```
---------------------------------------------------------------------------
PermissionError                           Traceback (most recent call last)
<ipython-input-24-1e6cc98ac50f> in <module>
      1 import os
----> 2 datasets=os.listdir("F:\PROGRAMMES\pythn\ML Project\HISTORICAL_DATA"
)
      3 data=[]
      4 c=input()
      5 c=c.upper()

PermissionError: [WinError 21] The device is not ready: 'F:\\PROGRAMMES\\pyt
hn\\ML Project\\HISTORICAL_DATA'
```

In [6]:

```
op=dataset['open']
op
```

Out[6]:

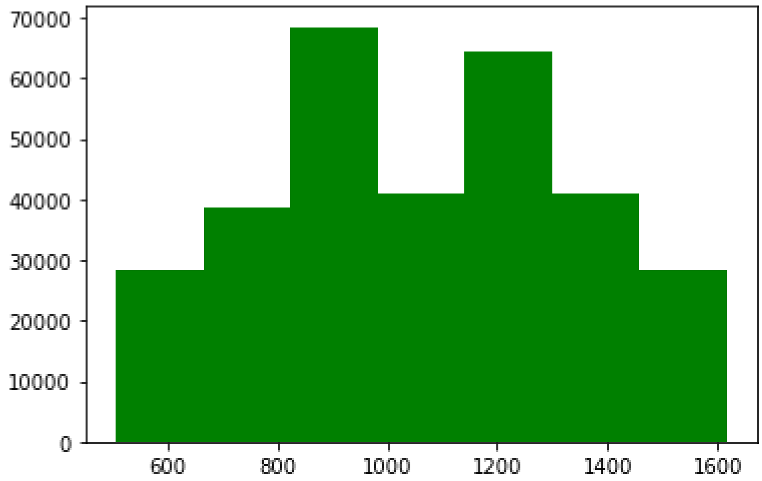
```
0          541.63
1          541.45
2          541.63
3          537.33
4          539.95
            ...
310481    1457.75
310482    1455.45
310483    1452.80
310484    1453.70
310485    1452.70
Name: open, Length: 310348, dtype: float64
```

In [12]:

```
plt.hist(op,bins=7,color='green')
```

Out[12]:

```
(array([28532., 38713., 68474., 40805., 64342., 41090., 28392.]),
 array([ 507.25      ,  665.63571429,  824.02142857,  982.40714286,
        1140.79285714, 1299.17857143, 1457.56428571, 1615.95      ]),
 <a list of 7 Patch objects>)
```

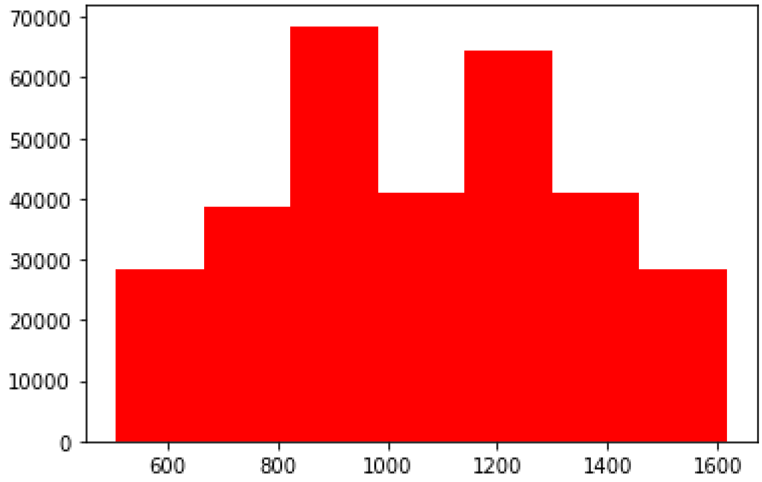


In [13]:

```
cl=dataset['close']
plt.hist(cl,bins=7,color='red')
```

Out[13]:

```
(array([28522., 38665., 68519., 40827., 64336., 41073., 28406.]),
 array([ 507.18      ,  665.58285714,  823.98571429,  982.38857143,
        1140.79142857, 1299.19428571, 1457.59714286, 1616.        ]),
 <a list of 7 Patch objects>)
```



GUI Of Project

In [ ]:

```
path=""
company=""
created_model=1
datasets=""
dataset=""
k=0

def set_path():
    global path
    path=x1.get()
    print(path)

def set_company():
    global company
    company=x2.get()
    company=company.upper()
    print(company)


def data_disp():
    global k
    k+=1
    load_model(k)



def load_model(a):
    global path,company,k,datasets,dataset
    datasets=os.listdir(path)
    data=[]
    c=company
    c=list(c)
    for i in range(len(c)):
        if c[i]==' ':
            c[i]='_'
    c=''.join(c)
    d=c+"__EQ__INDICES__NSE__MINUTE.csv"
    c=c+"__EQ__NSE__NSE__MINUTE.csv"
    found=0
    for i in datasets:
        if i==c:
            found=1
            break
        elif i==d:
            found=1
            c=d
            break
    if found:
        k+=1
        path=path+'\\'+c
        dataset=pd.read_csv(path)
        dataset['timestamp']=dataset['timestamp'].astype('string')
        dataset[['Date','Time']] = dataset.timestamp.str.split(" ",expand=True,)
        if len(dataset)<200:
            print("Insufficient Data")
        else:
            dataset=dataset.dropna(how="any",subset=['open','high','volume','close'])
            dataset=dataset.drop_duplicates(keep='last')
            dataset['Date']=pd.to_datetime(dataset['Date'])
            print("We will predict stock price daywise")
            reqopen=dataset.groupby('Date')['open'].apply(list).apply(lambda x : x[0])
            reqclose=dataset.groupby('Date')['close'].apply(list).apply(lambda x : x[-1])
            reqhigh=dataset.groupby('Date')['high'].max()
            reqlow=dataset.groupby('Date')['low'].min()
            hropen=[]
            hrclose=[]
            hrhigh=[]
            hrlow=[]
            for k in range(len(reqopen)):
                hropen.append(reqopen[k])
                hrclose.append(reqclose[k])
                hrhigh.append(reqhigh[k])
                hrlow.append(reqlow[k])
            hrdata={'open':hropen,'high':hrhigh,'low':hrlow,'close':hrclose}
            HrData=pd.DataFrame(hrdata)
            dataset=HrData
            dataset.reset_index(drop=False, inplace=True)
    else:
        print("Company not Present")
    print(a,k)
    if a!=0 and k>10:
        class TestApp(Frame):
            def __init__(self, parent=None):
                self.parent = parent
                Frame.__init__(self)
                self.main = self.master
                self.main.geometry('600x400+200+100')
                self.main.title('Data displaying')
                f = Frame(self.main)
                f.pack(fill=BOTH,expand=1)
                df = dataset
                self.table = pt = Table(f, dataframe=df,showtoolbar=True, showstatusbar=Tru
                pt.show()
                return

        app = TestApp()
        #launch the app
        app.mainloop()

    else:
        window=tk.Tk()
        window.geometry('500x200')
        label=tk.Label(window,text="We do not predict this company stocks value \n  Or \n W
        label.config(wraplength=150)
        tk.mainloop()

def disp_predict():
    global k
    print(k)
    if k!=0:
        x1 = dataset.iloc[700:,1:4].values
        y1 = dataset.iloc[700:,-1].values
        x_train, x_test, y_train, y_test = train_test_split(x1, y1, test_size = 0.2, random
        regressor = LinearRegression()
        regressor.fit(x_train, y_train)
        y_pred = regressor.predict(x_test)
        rmse = (np.sqrt(mean_squared_error(y_test, y_pred)))
        r2score = r2_score(y_test, y_pred)
        window=tk.Tk()
        window.geometry('400x300')
        label=tk.Label(window,text="The rmse value is : "+str(rmse),font=("Bold",10)).pack(
        label=tk.Label(window,text="The r2score value is : "+str(r2score),font=("Bold",10))
        label.config(wraplength=150)
        tk.mainloop()

    else:
        window=tk.Tk()
        window.geometry('500x200')
        label=tk.Label(window,text="We do not predict this company stocks value \n  Or \n W
        label.pack()
        label.config(wraplength=150)
        tk.mainloop()

window=tk.Tk()
window.title("Stock Price Predictor")
x1=tk.StringVar()
x2=tk.StringVar()

ttk.Label(window,text="Enter the path of dataset below :").pack() #grid(row=0,column=0)
ttk.Entry(window,textvariable=x1).pack() #grid(row=0,column=1,columnspan=1)
ttk.Button(window,text="Submit",command=lambda:set_path()).pack() #grid(row=0,column=2,colu

ttk.Label(window,text="Enter the Company Name below:").pack() #grid(row=1,column=0)
ttk.Entry(window,textvariable=x2).pack() #grid(row=1,column=1,columnspan=1)
ttk.Button(window,text="Submit",command=lambda : set_company()).pack() #grid(row=1,column=2

ttk.Button(window,text="Display data",command = lambda : data_disp()).pack() #grid(row=2,co

ttk.Button(window,text="Prediction Result",command = lambda : disp_predict()).pack() #grid(


tk.mainloop()
```

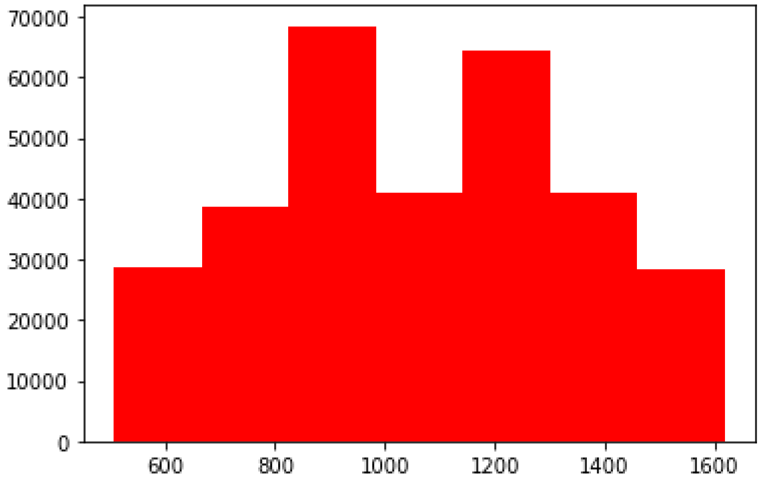
```
C:\Users\kavin\OneDrive\Desktop\datatata
RELIANCE
We will predict stock price daywise
1 830
830

Exception in Tkinter callback
Traceback (most recent call last):
  File "c:\users\kavin\appdata\local\programs\python\python38-32\lib\tkinter
\__init__.py", line 1883, in __call__
    return self.func(*args)
  File "<ipython-input-5-2eb8d3290c8f>", line 149, in <lambda>
    ttk.Button(window,text="Prediction Result",command = lambda : disp_predi
ct()).pack() #grid(row=3,column=1)
  File "<ipython-input-5-2eb8d3290c8f>", line 123, in disp_predict
    label.config(wraplength=150)
AttributeError: 'NoneType' object has no attribute 'config'
```

In [14]:

```
hi=dataset['high']
plt.hist(hi,bins=7,color='red')
```

Out[14]:

```
(array([28635., 38736., 68450., 40871., 64275., 41075., 28306.]),
 array([ 507.6       ,  666.16428571,  824.72857143,  983.29285714,
        1141.85714286, 1300.42142857, 1458.98571429, 1617.55      ]),
 <a list of 7 Patch objects>)
```



In [26]:

```
dataset
```

Out[26]:

	index	open	high	low	close
0	0	541.63	545.00	536.20	543.50
1	1	544.90	548.50	540.55	544.50
2	2	546.00	546.50	532.15	533.58
3	3	536.00	539.95	534.50	538.50
4	4	537.50	542.50	536.55	536.98
...	...	...	...	...	...
826	826	1580.00	1615.00	1572.50	1574.50
827	827	1564.80	1568.35	1465.00	1486.00
828	828	1527.00	1527.00	1454.20	1492.50
829	829	1469.00	1496.00	1430.20	1436.90
830	830	1444.00	1466.60	1415.25	1453.40

831 rows × 5 columns

In [ ]:

```

```