

STOCK MARKET PREDICTOR

INTRODUCTION

- ▶ Our model is based on naive bayes theorem.
- ▶ We took all the stocks of Nifty50.
- ▶ In the model you can predict how there will be an increase and decrease in stock price.
- ▶ We can predict how much accurate we can predict of it's trend about going up and down.
- ▶ We can also check what's the standard deviation of a particular stock for a particular month.

METHODOLOGY

- ▶ We extracted datasheet from year 2000 of all the stocks of Nifty50.
- ▶ After extracting data we wrote code for naive bayes theorem.
- ▶ We calculated average of all parameters(open , close and volume) and standard deviation.
- ▶ We calculated probability of each outcome given from the available information($P(\text{outcome}/\text{information})$).
- ▶ We calculated the probability of every outcome and chose the highest value as prediction.
- ▶ We did the same for every row in the dataset.
- ▶ We matched the prediction with the given outcome in the data set to calculate the accuracy.
- ▶ We got the accuracy as shown in the next slide...

Correlation

	Open	High	Low	Close	Volume	Divi	stock split	mva	mstd	mv10a	mv3a	upperband	lowerband
open	1	0.99991305	0.99991469	0.99984267	-0.1290386	0.06309255	-0.0029985	0.9985457	0.82634259	0.9985457	0.99994325	0.99787478	0.99737257
high	0.99991305	1	0.99988072	0.99993327	-0.1288921	0.06338223	-0.0029174	0.9985271	0.82768627	0.9985271	0.99992724	0.99795264	0.99724477
low	0.99991469	0.99988072	1	0.9999225	-0.1291047	0.06317273	-0.0030337	0.99842443	0.82483814	0.99842443	0.99991552	0.99765396	0.99736429
close	0.99984267	0.99993327	0.9999225	1	-0.1289531	0.06330674	-0.0029992	0.99843801	0.82620614	0.99843801	0.99990169	0.99776381	0.99726881
volume	-0.1290386	-0.1288921	-0.1291047	-0.1289531	1	-0.006057	0.00556237	-0.1290618	-0.1054701	-0.1290618	-0.1290396	-0.1288804	-0.1290174
divi	0.06309255	0.06338223	0.06317273	0.06330674	-0.006057	1	0.00274996	0.06276087	0.04490212	0.06276087	0.06308247	0.06221947	0.06325257
stock split	-0.0029985	-0.0029174	-0.0030337	-0.0029992	0.00556237	0.00274996	1	-0.0032293	-0.0021852	-0.0032293	-0.0030891	-0.0031926	-0.0032647
mva	0.9985457	0.9985271	0.99842443	0.99843801	-0.1290618	0.06276087	-0.0032293	1	0.82572098	1	0.99866271	0.9991986	0.99897185
mstd	0.82634259	0.82768627	0.82483814	0.82620614	-0.1054701	0.04490212	-0.0021852	0.82572098	1	0.82572098	0.82626367	0.84763765	0.79929958
mv10a	0.9985457	0.9985271	0.99842443	0.99843801	-0.1290618	0.06276087	-0.0032293	1	0.82572098	1	0.99866271	0.9991986	0.99897185
mv3a	0.99994325	0.99992724	0.99991552	0.99990169	-0.1290396	0.06308247	-0.0030891	0.99866271	0.82626367	0.99866271	1	0.99797924	0.99750357
uppeer	0.99787478	0.99795264	0.99765396	0.99776381	-0.1288804	0.06221947	-0.0031926	0.9991986	0.84763765	0.9991986	0.99797924	1	0.99635665
lower	0.99737257	0.99724477	0.99736429	0.99726881	-0.1290174	0.06325257	-0.0032647	0.99897185	0.79929958	0.99897185	0.99750357	0.99635665	1

OUTPUT

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Accuracy of RELIANCE.NS: 0.6357894736842106
Accuracy of AXISBANK.NS: 0.6412280701754386
Accuracy of HDFC.NS: 0.6239113222486145
Accuracy of ITC.NS: 0.6223898929636779
Accuracy of NESTLEIND.NS: 0.6681266175592275
Accuracy of BAJAJ-AUTO.NS: 0.5891549574510192
Accuracy of GRASIM.NS: 0.6057425742574257
Accuracy of HDFCBANK.NS: 0.5732070839908819
Accuracy of POWERGRID.NS: 0.580010775862069
Accuracy of EICHERMOT.NS: 0.5408771929824562
Accuracy of HINDALCO.NS: 0.603541995440996
Accuracy of TITAN.NS: 0.6622830089426618
Accuracy of ULTRACEMCO.NS: 0.6177290836653386
Accuracy of SBILIFE.NS: 0.6025538707102953
Accuracy of TECHM.NS: 0.6313017306245298
Accuracy of ADANIPILOTS.NS: 0.6591403699673558
Accuracy of CIPLA.NS: 0.6702911259207296
Accuracy of ADANIENT.NS: 0.5039588281868567
Accuracy of M&M.NS: 0.6465532362743378
Accuracy of HDFCLIFE.NS: 0.6904176904176904
Accuracy of TATASTEEL.NS: 0.650008767315448
Accuracy of HCLTECH.NS: 0.6313694267515924
Accuracy of WIPRO.NS: 0.6156408907592495
Accuracy of KOTAKBANK.NS: 0.6159352043699379
Accuracy of BPCL.NS: 0.6228070175438597
Accuracy of INDUSINDBK.NS: 0.6489593657086224
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Accuracy of UPL.NS: 0.6321520490991883
Accuracy of BAJFINANCE.NS: 0.5322772277227723
Accuracy of SUNPHARMA.NS: 0.6186217780115728
Accuracy of DIVISLAB.NS: 0.6725518374050503
Accuracy of TATAMOTORS.NS: 0.6335262142731896
Accuracy of HINDUNILVR.NS: 0.5975802209363493
Accuracy of BHARTIARTL.NS: 0.6251485148514851
Accuracy of APOLLOHOSP.NS: 0.6768316831683169
Accuracy of MARUTI.NS: 0.6493940660259089
Accuracy of BRITANNIA.NS: 0.5363157894736842
Accuracy of TCS.NS: 0.6361282613025294
Accuracy of BAJAJFINSV.NS: 0.6226339908348276
Accuracy of ASIANPAINT.NS: 0.6114851485148515
Accuracy of HEROMOTOCO.NS: 0.623960396039604
Accuracy of ONGC.NS: 0.6436842105263157
Accuracy of LT.NS: 0.6522857708292104
Accuracy of NTPC.NS: 0.6422617706690696
Accuracy of DRREDDY.NS: 0.5152631578947369
Accuracy of TATACONSUM.NS: 0.6728070175438596
Accuracy of ICICIBANK.NS: 0.5952475247524752
Accuracy of JSWSTEEL.NS: 0.6443064182194617
Accuracy of INFY.NS: 0.5711029282833596
Accuracy of COALINDIA.NS: 0.6197087707416187
Accuracy of SBIN.NS: 0.6497105770917383
Average of all Accuracy: 0.620558297959714
Time taken: 22.478559017181396
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METHODOLOGY

- ▶ We also analysed ROI and Standard deviation.
- ▶ So, we split the dataset by company name and then further split it date-wise.
- ▶ Now we started getting ROI by using the “open” and “close” column for each month.
- ▶ Then after getting the ROI of a particular month, we calculate the average of all the ROI over the period from the year 2000.
- ▶ We repeat the above step for all 12 months.
- ▶ We also calculated the standard deviation of a particular month and took an average of all the standard deviations over the period from the year 2000 and also repeated it for all the other months.
- ▶ Now after getting the average Roi and standard deviation and accuracy we conclude, if we want to ensure a particular stock for that particular month.

Month: 1
Average ROI of RELIANCE.NS of Month 1: 0.026789484251029852
Average STDEV of RELIANCE.NS of Month 1: 0.12485067062476544
Month: 2
Average ROI of RELIANCE.NS of Month 2: 0.0020851339591696303
Average STDEV of RELIANCE.NS of Month 2: 0.06317633145676989
Month: 3
Average ROI of RELIANCE.NS of Month 3: 0.014753936413163079
Average STDEV of RELIANCE.NS of Month 3: 0.09850805367001385
Month: 4
Average ROI of RELIANCE.NS of Month 4: 0.04076955632221948
Average STDEV of RELIANCE.NS of Month 4: 0.10598719855957384
Month: 5
Average ROI of RELIANCE.NS of Month 5: 0.00989512828271465
Average STDEV of RELIANCE.NS of Month 5: 0.10037505752285153
Month: 6
Average ROI of RELIANCE.NS of Month 6: 0.015107104101429066
Average STDEV of RELIANCE.NS of Month 6: 0.08488486909346117
Month: 7
Average ROI of RELIANCE.NS of Month 7: 0.02040217307046041
Average STDEV of RELIANCE.NS of Month 7: 0.0987643549487902
Month: 8
Average ROI of RELIANCE.NS of Month 8: 0.014824917972263133
Average STDEV of RELIANCE.NS of Month 8: 0.06587596825508378
Month: 9
Average ROI of RELIANCE.NS of Month 9: 0.028958979634918263
Average STDEV of RELIANCE.NS of Month 9: 0.07624242058011627
Month: 10
Average ROI of RELIANCE.NS of Month 10: 0.013843949403765678
Average STDEV of RELIANCE.NS of Month 10: 0.11663479767914398
Month: 11
Average ROI of RELIANCE.NS of Month 11: -0.0023972703966148963
Average STDEV of RELIANCE.NS of Month 11: 0.08302316257383517
Month: 12
Average ROI of RELIANCE.NS of Month 12: 0.021738459705509017
Average STDEV of RELIANCE.NS of Month 12: 0.06618836751510625

RELIANCE

Month: 1
Average ROI of HDFC.NS of Month 1: -0.001318886207473521
Average STDEV of HDFC.NS of Month 1: 0.0720045947843706
Month: 2
Average ROI of HDFC.NS of Month 2: -0.031361256201266716
Average STDEV of HDFC.NS of Month 2: 0.05228200160064624
Month: 3
Average ROI of HDFC.NS of Month 3: 0.00427953727427127
Average STDEV of HDFC.NS of Month 3: 0.0935607907525454
Month: 4
Average ROI of HDFC.NS of Month 4: 0.030390519707506076
Average STDEV of HDFC.NS of Month 4: 0.0774357740823318
Month: 5
Average ROI of HDFC.NS of Month 5: 0.023362600136454796
Average STDEV of HDFC.NS of Month 5: 0.09201901671756758
Month: 6
Average ROI of HDFC.NS of Month 6: 0.014460453793593692
Average STDEV of HDFC.NS of Month 6: 0.08455584722532022
Month: 7
Average ROI of HDFC.NS of Month 7: 0.05004887361244306
Average STDEV of HDFC.NS of Month 7: 0.06224342256441213
Month: 8
Average ROI of HDFC.NS of Month 8: 0.016612099916315633
Average STDEV of HDFC.NS of Month 8: 0.06993511425110296
Month: 9
Average ROI of HDFC.NS of Month 9: 0.032000145841640466
Average STDEV of HDFC.NS of Month 9: 0.09897101682351095
Month: 10
Average ROI of HDFC.NS of Month 10: 0.013386542616948743
Average STDEV of HDFC.NS of Month 10: 0.07160904836947594
Month: 11
Average ROI of HDFC.NS of Month 11: 0.03329601601302638
Average STDEV of HDFC.NS of Month 11: 0.10503869929081773
Month: 12
Average ROI of HDFC.NS of Month 12: 0.04714374434832129
Average STDEV of HDFC.NS of Month 12: 0.13000298029888982

HDFC BANK

Month: 1
Average ROI of ITC.NS of Month 1: 0.0059580231882496795
Average STDEV of ITC.NS of Month 1: 0.04191823882425513
Month: 2
Average ROI of ITC.NS of Month 2: 0.004310393592079517
Average STDEV of ITC.NS of Month 2: 0.06082237413984579
Month: 3
Average ROI of ITC.NS of Month 3: 0.026559820639704426
Average STDEV of ITC.NS of Month 3: 0.08255009994203157
Month: 4
Average ROI of ITC.NS of Month 4: 0.01474545130728525
Average STDEV of ITC.NS of Month 4: 0.07279023977752502
Month: 5
Average ROI of ITC.NS of Month 5: 0.015441057889170929
Average STDEV of ITC.NS of Month 5: 0.0988246287516949
Month: 6
Average ROI of ITC.NS of Month 6: 0.01601383179607395
Average STDEV of ITC.NS of Month 6: 0.0688487629128131
Month: 7
Average ROI of ITC.NS of Month 7: 0.040362805575309864
Average STDEV of ITC.NS of Month 7: 0.10008006063466564
Month: 8
Average ROI of ITC.NS of Month 8: 0.013416916826850001
Average STDEV of ITC.NS of Month 8: 0.068801325806031
Month: 9
Average ROI of ITC.NS of Month 9: 0.0016860713327963633
Average STDEV of ITC.NS of Month 9: 0.09047486180082612
Month: 10
Average ROI of ITC.NS of Month 10: -0.006064008183271299
Average STDEV of ITC.NS of Month 10: 0.07679754405560037
Month: 11
Average ROI of ITC.NS of Month 11: 0.024023088547850437
Average STDEV of ITC.NS of Month 11: 0.0664342451261029
Month: 12
Average ROI of ITC.NS of Month 12: 0.016335407235544053
Average STDEV of ITC.NS of Month 12: 0.05035051116297231

ITC

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the left and right sides of the frame, creating a modern, dynamic feel. The central area is a plain, light grayish-white.

Thank You!