

Assignment – 1 for Data Warehousing and Data Mining 16CS651

Question

Download NSE data for a month (from Jan 1st-Jan 31st, 2019) for one of the indices.

- (i) Model the ‘opening’ value data with linear regression (i.e., estimate parameters) using
 - a. Gradient descent
 - b. Least squares approach and compare the resulting parametersThe estimation procedure is to be coded up using C (no library functions are allowed)
- (ii) Use the estimated parameters to predict the ‘opening’ value on Feb 1st, 2019 and Feb 5th, 2019
- (iii) [Bonus point] Use any other attribute and/ or any other model to improve your prediction accuracy. (You may use any language and library functions/ packages for this)

You will select the index corresponding to your serial number in the class roster:

- 1. Nifty 50 Index
- 2. Nifty Next 50 Index
- 3. Nifty 100 Index
- 4. Nifty 200 Index
- 5. Nifty 500 Index
- 6. Nifty Midcap 150 Index
- 7. Nifty Midcap 50 Index
- 8. Nifty Midcap 100 Index
- 9. Nifty Smallcap 250 Index
- 10. Nifty Smallcap 50 Index
- 11. Nifty Smallcap 100 Index
- 12. NIFTY LargeMidcap 250 Index
- 13. Nifty MidSmallcap 400 Index
- 14. India Vix Index
- 15. Nifty Auto Index
- 16. Nifty Bank Index
- 17. Nifty Financial Services Index
- 18. Nifty FMCG index
- 19. Nifty IT index
- 20. Nifty Media Index

21. Nifty Metal Index
22. Nifty Pharma Index
23. Nifty Private Bank Index
- 24. Nifty PSU Bank Index**
25. Nifty Realty Index
26. Nifty Commodities
27. Nifty India Consumption
28. Nifty CPSE
29. Nifty Energy
30. NIFTY100 ESG Index
31. NIFTY100 Enhanced ESG Index
32. NIFTY SME EMERGE Index
33. Nifty Commodities Index
34. Nifty CPSE Index
35. Nifty Corporate Group Indices
36. Nifty Energy Index
37. Nifty India Consumption Index
38. Nifty Infrastructure Index
39. Nifty MNC Index
40. Nifty PSE Index
41. Nifty Services Sector Index
42. Nifty100 Liquid 15 Index
43. Nifty Midcap Liquid 15 Index
44. Nifty Shariah 25 Index
45. Nifty50 Shariah
46. Nifty500 Shariah Index
47. Nifty Aditya Birla Group
48. Nifty Mahindra Group
49. Nifty Tata Group
50. Nifty Tata Group 25% Cap
51. Nifty 100 LIQ 15
52. Nifty Midcap Liquid 15
53. Nifty 500 Value 50
54. Nifty Alpha Low-Volatility 30
55. Nifty Quality Low-Volatility 30
56. Nifty Alpha Quality Low-Volatility 30
57. Nifty50 Equal Weight
58. Nifty100 Equal Weight
59. Nifty100 Low Volatility 30
60. Nifty50 USD
61. Nifty50 Dividend Points
62. Nifty50 Dividend Opportunities 50
63. Nifty Alpha 50
64. Nifty 50 Arbitrage
65. Nifty 50 Futures Index
66. Nifty 50 Futures TR Index

67. Nifty High Beta 50
68. Nifty Low Volatility 50
69. Nifty 100 Quality 30
70. Nifty50 Value 20
71. Nifty Growth Sectors 15
72. Nifty Composite G-Sec Index

Below is a sample of how you can retrieve the data at this link:

https://www.nseindia.com/products/content/equities/indices/historical_index_data.htm

Historical Index Data

Select the index you want:

Select Index:

Select a time period:

To

Historical Data for NIFTY 50						
For the period 01-12-2018 to 01-01-2019						
Date	Open	High	Low	Close	Shares Traded	Turnover (₹ Cr)
03-Dec-2018	10930.70	10941.20	10845.35	10883.75	422358631	18484.91
04-Dec-2018	10877.10	10890.95	10833.35	10869.50	332137359	15857.16
05-Dec-2018	10820.45	10821.05	10747.95	10782.90	322019985	15176.26
06-Dec-2018	10718.15	10722.65	10588.25	10601.15	328275196	16488.87
07-Dec-2018	10644.80	10704.55	10599.35	10693.70	335849636	18597.83

10-Dec-2018	10508.70	10558.85	10474.95	10488.45	393097292	16524.36
11-Dec-2018	10350.05	10567.15	10333.85	10549.15	438699334	20112.91
12-Dec-2018	10591.00	10752.20	10560.80	10737.60	371697496	17447.45
13-Dec-2018	10810.75	10838.60	10749.50	10791.55	387810061	17582.80
14-Dec-2018	10784.50	10815.75	10752.10	10805.45	350579275	14486.10
17-Dec-2018	10853.20	10900.35	10844.85	10888.35	306145514	12528.59
18-Dec-2018	10850.90	10915.40	10819.10	10908.70	294942271	13556.45
19-Dec-2018	10930.55	10985.15	10928.00	10967.30	321801803	17172.64
20-Dec-2018	10885.20	10962.55	10880.05	10951.70	328802751	14945.94
21-Dec-2018	10944.25	10963.65	10738.65	10754.00	389235107	18663.85
24-Dec-2018	10780.90	10782.30	10649.25	10663.50	230291344	10695.60
26-Dec-2018	10635.45	10747.50	10534.55	10729.85	271942701	12831.99
27-Dec-2018	10817.90	10834.20	10764.45	10779.80	470160392	19119.88
28-Dec-2018	10820.95	10893.60	10817.15	10859.90	253086507	12615.01
31-Dec-2018	10913.20	10923.55	10853.20	10862.55	186494657	10176.13
01-Jan-2019	10881.70	10923.60	10807.10	10910.10	159404542	8688.26