

ASSIGNMENT NO. 4

1 TITLE :

Use Business intelligence and analytics tools to recommend the combination of share purchases and sales for maximizing the profit.

2 MATHEMATICAL MODEL :

mathematical model is given as below,

$S = fs, e, X, Y, Fme, DD, NDD, Mem \text{ sharedg}$

Where,

s = Initial State

e = End State

X=input Datasets of share market.

Y=output Bar chart of frequency distribution of share market.

Fme=Algorithms used (Apriori)

for eg. `fnextdistance()`, `estimate()`, `pathFind()`

DD=Deterministic Data Share market data.

NDD=Non-Deterministic Data.

Mem-shared=memory shared by the applications.

3 THEORY :

Definition: It is a place where shares of public listed companies are traded. The primary market is where companies float shares to the general public in an initial public offering (IPO) to raise capital.

Description: Once new securities have been sold in the primary market, they are traded in the secondary market where one investor buys shares from another investor at the prevailing market price or at whatever price both the buyer and seller agree upon. The secondary market or the stock exchanges are regulated by the regulatory authority. In India, the secondary and primary markets are governed by the Security and Exchange Board of India (SEBI).

A stock exchange facilitates stock brokers to trade company stocks and other securities. A stock may be bought or sold only if it is listed on an exchange. Thus, it is the meeting place of the stock buyers and sellers. India's premier stock exchanges are the Bombay Stock Exchange and the National Stock Exchange.

Conclusion: Hence we have used business intelligence and analytics tools KNIME to recommend the combination of share purchases and sales for maximizing the profit.

- Input:
Training Data:

StockPastData.xlsx - LibreOffice Calc

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Sr. no	Month	Open Price	High Price	Low Price	Close Price	No. of Shares	No. of Trades	Total Turnover (Rs.)	Deliverable Quantity	% Del. Qty to Traded Qty	Spread High-Low	Spread Close-Open	class		
2	1	Jan-10	1698	1709	1401.15	1425.05	8451497	277151	1E+010	3800092	44.96	307.85	-272.95	Buy		
3	2	Feb-10	1425	1581.45	1371	1566.85	6570519	249773	1E+010	2214388	33.7	210.45	141.85	sell		
4	3	Mar-10	1585	1669.8	1541.25	1626.35	4004937	157827	6E+009	1578083	39.4	128.55	41.35	sell		
5	4	Apr-10	1635.25	1660.9	1550	1608.35	3562036	138175	6E+009	1254116	35.21	110.9	-26.9	buy		
6	5	May-10	1600	1680	1475.1	1628.6	6617594	253920	1E+010	2022276	30.56	204.9	28.6	sell		
7	6	Jun-10	1629.7	1843.75	1587	1804.55	5741781	214626	1E+010	2342270	40.79	256.75	174.85	sell		
8	7	Jul-10	1795	1949	1780.15	1797.1	4608597	196938	9E+009	1587965	34.46	168.85	2.1	sell		
9	8	Aug-10	1806	1887	1763.7	1812.45	3152577	147259	6E+009	985226	31.25	123.3	6.45	sell		
10	9	Sep-10	1820	2074.6	1685	2044.7	4099375	173992	8E+009	1596139	38.94	389.6	224.7	sell		
11	10	Oct-10	2044.7	2117	1928.8	2021.85	4271818	177502	9E+009	1649326	38.61	188.2	-22.85	buy		
12	11	Nov-10	2028	2212	1907.25	1949.85	3481912	154793	7E+009	1432830	41.15	304.75	-78.15	buy		
13	12	Dec-10	1950.05	2064	1918.7	1979.05	2943884	135409	6E+009	1041244	35.37	145.3	29	sell		
14	13	Jan-11	1990	1998.1	1555	1641.15	7856177	350361	1E+010	3008010	38.29	443.1	-348.85	buy		
15	14	Feb-11	1650	1723.7	1463.05	1528.05	7305209	375368	1E+010	2270278	31.08	260.65	-121.95	buy		
16	15	Mar-11	1545	1932.95	1503.05	1653.25	6775106	330537	1E+010	1897025	28	429.9	108.25	sell		
17	16	Apr-11	1666.5	1768.35	1592.9	1597.9	4606579	218976	8E+009	1110957	24.12	175.45	-68.6	buy		
18	17	May-11	1619	1668.9	1475	1644	8311549	406743	1E+010	1848284	22.24	193.9	25	sell		
19	18	Jun-11	1642.7	1836.95	1635	1822.65	4301218	212793	7E+009	1180032	27.43	201.95	179.95	sell		
20	19	Jul-11	1840	1867.85	1720	1725.95	3810304	179662	7E+009	1042195	27.35	147.85	-114.05	buy		
21	20	Aug-11	1736.3	1768	1518	1609.8	5599962	305000	9E+009	1327908	23.71	250	-126.5	buy		
22	21	Sep-11	1635	1719.9	1350	1358.2	7549618	389843	1E+010	2247671	29.77	369.9	-276.8	buy		
23	22	Oct-11	1347	1453.4	1268.4	1413.25	7608120	388131	1E+010	1998421	26.27	185	66.25	sell		
24	23	Nov-11	1397.15	1406.85	1175	1268.8	7471239	352718	1E+010	1979655	26.5	231.85	-128.35	buy		
25	24	Dec-11	1305	1334.9	971	995.1	1E+007	522573	1E+010	3466045	29.19	363.9	-309.9	buy		
26	25	Jan-12	1006.7	1388	991	1310.6	1E+007	486157	1E+010	1953877	19.09	397	303.9	sell		
27	26	Feb-12	1303	1529.8	1278.3	1308.1	1E+007	413017	1E+010	2779025	27.43	251.5	5.1	sell		

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StockPastData.xlsx - LibreOffice Calc

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
30	29	May-12	1230.1	1237	1111	1172.3	8976305	393944	1E+010	1419372	15.81	126	-57.8	buy		
31	30	Jun-12	1168	1400	1106.4	1397.35	9526714	406258	1E+010	1782683	18.71	293.6	229.35	sell		
32	31	Jul-12	1400	1441.85	1308	1369.65	5717001	240763	8E+009	978087	17.11	133.85	-30.35	buy		
33	32	Aug-12	1367.8	1481.2	1324.1	1341.4	4212217	174205	6E+009	1100535	26.13	157.1	-26.4	buy		
34	33	Sep-12	1354	1619	1310	1596.75	5182938	199430	8E+009	1590510	30.69	309	242.75	sell		
35	34	Oct-12	1592	1719.5	1581.5	1624.75	5264176	208690	9E+009	1361532	25.86	138	32.75	sell		
36	35	Nov-12	1630	1691.6	1537.2	1667.1	3277631	143882	5E+009	875531	26.71	154.4	37.1	sell		
37	36	Dec-12	1670	1699	1572.5	1605.85	2990506	115640	5E+009	940749	31.46	126.5	-64.15	buy		
38	37	Jan-13	1616	1661	1500	1542.9	4957679	215363	8E+009	1496304	30.18	161	-73.1	buy		
39	38	Feb-13	1546.05	1556.35	1352	1365.8	3390282	160526	5E+009	1009462	29.78	204.35	-180.25	buy		
40	39	Mar-13	1370	1531.3	1331	1364.9	4553463	198241	7E+009	1276794	28.04	200.3	-5.1	buy		
41	40	Apr-13	1370	1546.5	1313.2	1512.6	4106146	192447	6E+009	1108788	27	233.3	142.6	sell		
42	41	May-13	1506.6	1652.1	1400	1401.6	6033460	286209	9E+009	1676179	27.78	252.1	-105	buy		
43	42	Jun-13	1400	1464	1336.1	1404.15	4026259	234610	8E+009	1181045	29.33	127.9	4.15	sell		
44	43	Jul-13	1407	1453.65	834.25	846.45	7744657	431217	8E+009	2422238	31.28	619.4	-560.55	buy		
45	44	Aug-13	852.3	864.5	678.1	722.25	7755231	400784	6E+009	2427561	31.3	186.4	-130.05	buy		
46	45	Sep-13	730	898	687.6	788.6	7415821	360660	6E+009	2180886	29.41	210.4	58.6	sell		
47	46	Oct-13	790	984.65	777.1	972.55	7567819	388489	7E+009	1924532	25.43	207.55	182.55	sell		
48	47	Nov-13	972	1047	912.3	1043.35	4957938	244437	5E+009	1541294	31.09	134.7	71.35	sell		
49	48	Dec-13	1042.2	1152.4	1033.5	1069.9	5128858	259595	6E+009	1751181	34.14	118.9	27.7	sell		
50	49	Jan-14	1075	1079.7	951.6	985.4	5287708	302797	5E+009	1678705	31.75	128.1	-89.6	buy		
51	50	Feb-14	986.5	1113.95	962	1108.3	3052439	176759	3E+009	981351	32.15	151.95	121.8	sell		
52	51	Mar-14	1101.1	1301	1087	1272.65	5492328	246139	7E+009	2175546	39.61	214	171.55	sell		
53	52	Apr-14	1267.6	1387.85	1242.45	1295.55	3819745	248946	5E+009	1241029	32.49	145.4	27.95	sell		
54	53	May-14	1306.4	1622.7	1251.6	1548.9	6514068	461142	9E+009	2292413	35.19	371.1	242.5	sell		
55	54	Jun-14	1612.25	1774.7	1603	1701.6	4342463	357259	7E+009	1297407	29.88	171.7	89.35	sell		
56	55	Jul-14	1707.4	1763	1501	1504.1	5542318	454604	9E+009	2120402	38.26	262	-203.3	buy		
57	56	Aug-14	1490	1556	1439.2	1526.9	3815690	309465	6E+009	1334543	34.98	116.8	36.9	sell		
58	57	Sep-14	1535	1629.95	1435.35	1457.45	3936990	327663	6E+009	1285302	32.65	194.6	-77.55	buy		
59	58	Oct-14	1460	1659.95	1400	1654.85	3155993	245193	5E+009	1149315	36.42	259.95	194.85	sell		

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PageStyle_Monthly

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Transactional Data:

Share.xls - LibreOffice Calc

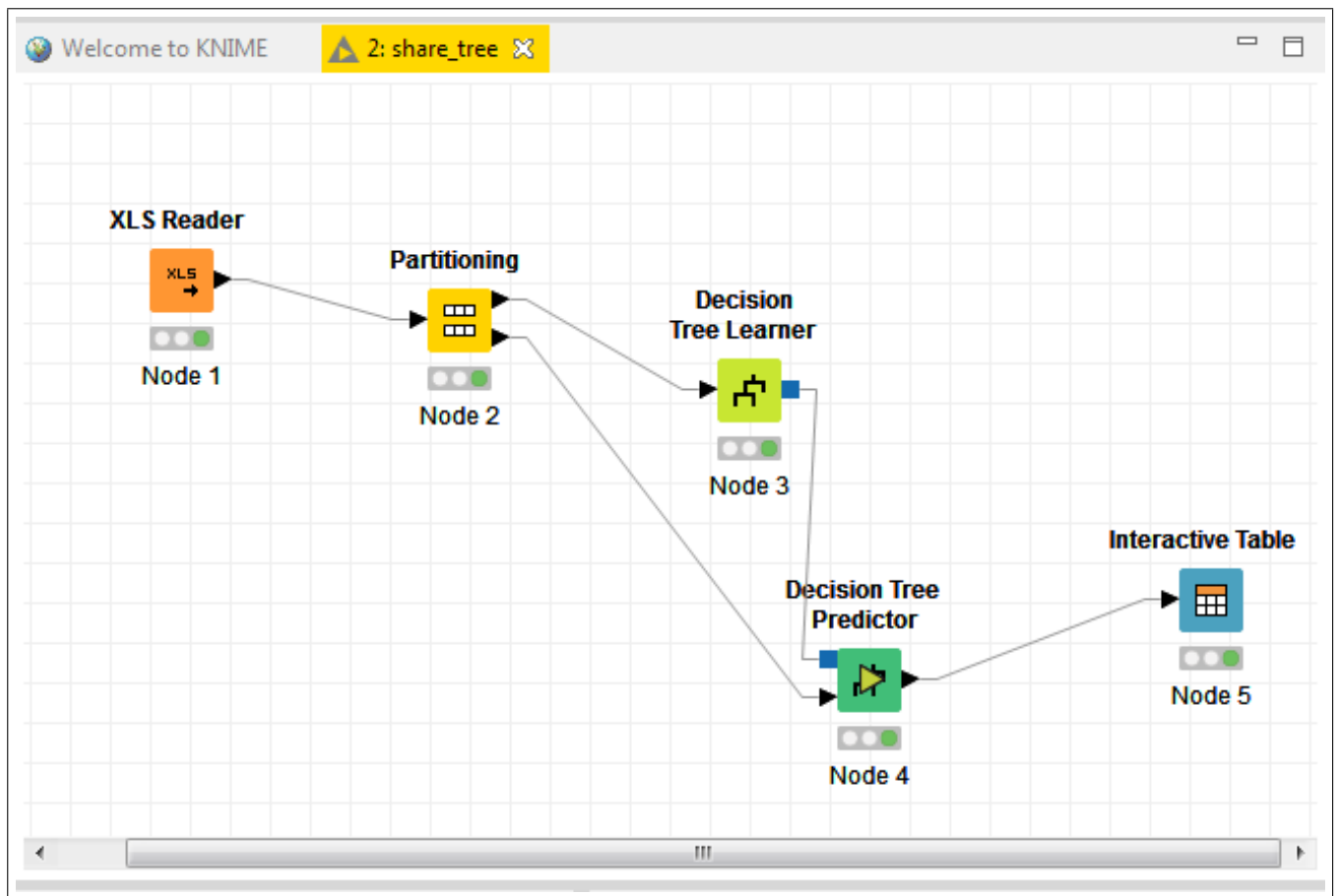
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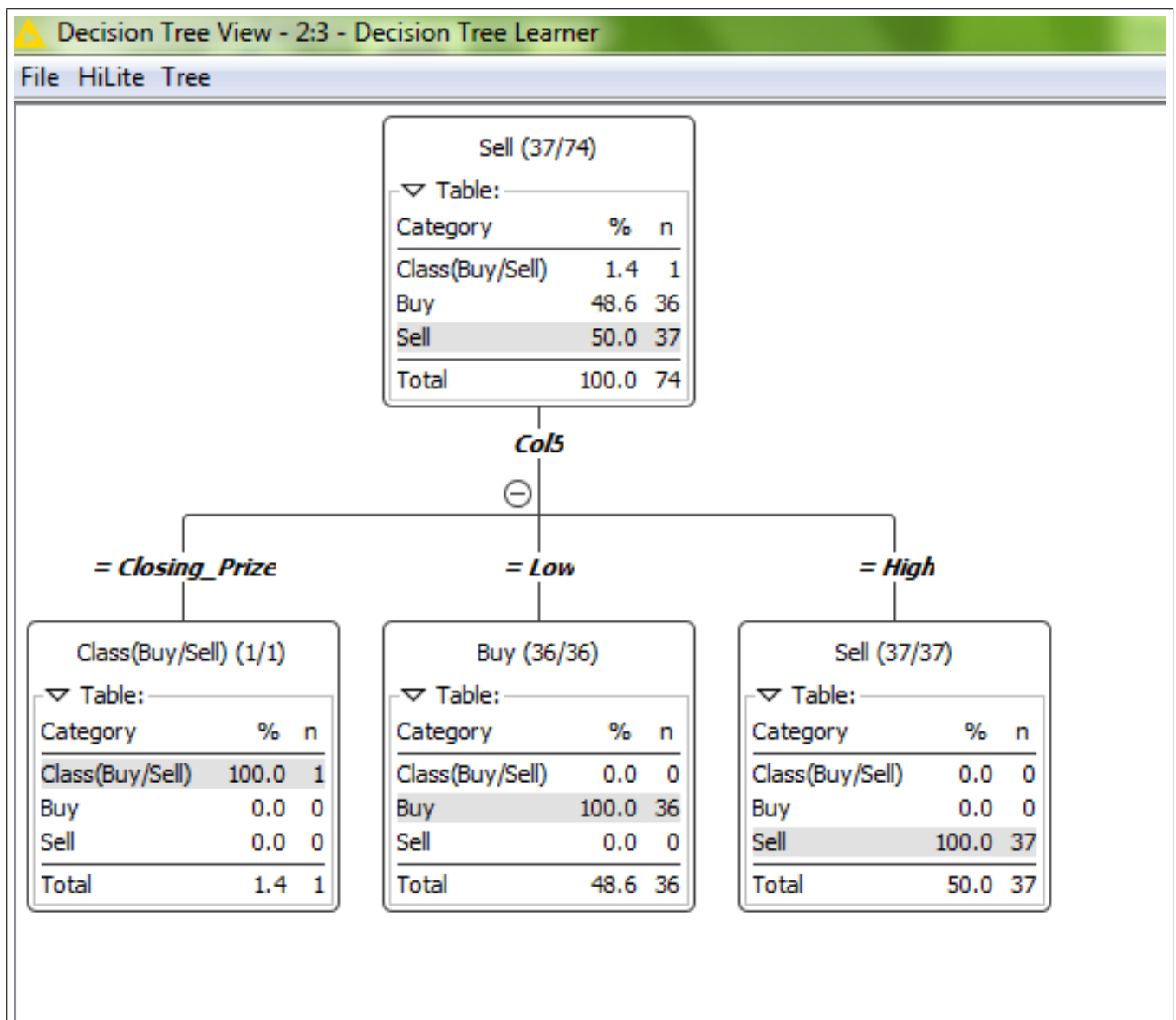
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78	TATA	77	c3 c4	Yes	High	Low	5		Buy									
79	TATA	78	c3 c4	Yes	High	Low	5		Buy									
80	TATA	79	c3 c4	No	Low	High	4		Sell									
81	ICICI	80	c1 c3	Yes	High	Low	5		Buy									
82	ICICI	81	c1 c3	Yes	High	Low	4		Buy									
83	ICICI	82	c1	Yes	High	Low	4		Buy									
84	ICICI	83	c1	Yes	High	Low	4		Buy									
85	ICICI	84	c1	Yes	High	Low	4		Buy									
86	ICICI	85	c2	No	Low	High	3		Sell									
87	ICICI	86	c3	No	Low	High	2		Sell									
88	ICICI	87	c3	No	Low	High	3		Sell									
89	ICICI	88	c3	No	Low	High	1		Sell									
90	ICICI	89	c2	No	Low	High	3		Sell									
91	SBI	90	c1 c2	Yes	High	Low	4		Buy									
92	SBI	91	c1 c2	Yes	High	Low	5		Buy									
93	SBI	92	c1 c2	No	Low	High	3		Sell									
94	SBI	93	c2 c3	No	Low	High	2		Sell									
95	SBI	94	c2 c3	No	Low	High	1		Sell									
96	SBI	95	c1	Yes	High	Low	4		Buy									
97	SBI	96	c1	Yes	High	Low	5		Buy									
98	SBI	97	c2 c3	No	Low	High	3		Sell									
99	SBI	98	c3 c4	Yes	High	Low	5		Buy									
100	Micromax	99	c3 c4	Yes	High	Low	5		Buy									
101	Micromax	100	c3 c4	Yes	High	Low	5		Buy									
102	Micromax	101	c3 c4	No	Low	High	4		Sell									
103	Micromax	102	c1 c3	Yes	High	Low	5		Buy									
104	Micromax	103	c1 c3	Yes	High	Low	4		Buy									
105	Micromax	104	c1	Yes	High	Low	4		Buy									
106	Micromax	105	c1	Yes	High	Low	4		Buy									
107																		
108																		
109																		
110																		
111																		

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- output

Table View - 2:5 - Interactive Table									
File Hilite Navigation View Output									
Row ID	S Col0	S Col1	S Col2	S Col3	S Col4	S Col5	S Col6	S Col7	S Predicti...
Row5	TCS	5.0	c3	No	Low	High	1.0	Sell	Sell
Row7	TCS	7.0	c1 c2	Yes	High	Low	4.0	Buy	Buy
Row10	Wipro	10.0	c2 c3	No	Low	High	2.0	Sell	Sell
Row12	Wipro	12.0	c1	Yes	High	Low	4.0	Buy	Buy
Row13	KPIT	13.0	c1	Yes	High	Low	5.0	Buy	Buy
Row17	KPIT	17.0	c3 c4	Yes	High	Low	5.0	Buy	Buy
Row18	KPIT	18.0	c3 c4	No	Low	High	4.0	Sell	Sell
Row20	Docomo	20.0	c1 c3	Yes	High	Low	4.0	Buy	Buy
Row22	Docomo	22.0	c2	No	Low	High	3.0	Sell	Sell
Row26	Docomo	26.0	c2	No	Low	High	3.0	Sell	Sell
Row33	Airtel	33.0	c1	Yes	High	Low	5.0	Buy	Buy
Row39	Facebook	39.0	c1 c3	Yes	High	Low	5.0	Buy	Buy
Row42	Facebook	42.0	c1	Yes	High	Low	4.0	Buy	Buy
Row50	Google	50.0	c1 c2	No	Low	High	3.0	Sell	Sell
Row59	Apple	59.0	c3 c4	No	Low	High	4.0	Sell	Sell
Row60	Apple	60.0	c1 c3	Yes	High	Low	5.0	Buy	Buy
Row61	Apple	61.0	c1 c3	Yes	High	Low	4.0	Buy	Buy
Row62	Apple	62.0	c1	Yes	High	Low	4.0	Buy	Buy
Row67	Apple	67.0	c2	No	Low	High	3.0	Sell	Sell
Row68	Apple	68.0	c1 c2	Yes	High	Low	4.0	Buy	Buy
Row69	Apple	69.0	c1 c2	Yes	High	Low	5.0	Buy	Buy
Row71	TATA	71.0	c2 c3	No	Low	High	2.0	Sell	Sell
Row76	TATA	76.0	c3 c4	Yes	High	Low	5.0	Buy	Buy
Row78	TATA	78.0	c3 c4	Yes	High	Low	5.0	Buy	Buy
Row80	ICICI	80.0	c1 c3	Yes	High	Low	5.0	Buy	Buy
Row81	ICICI	81.0	c1 c3	Yes	High	Low	4.0	Buy	Buy
Row83	ICICI	83.0	c1	Yes	High	Low	4.0	Buy	Buy
Row86	ICICI	86.0	c3	No	Low	High	2.0	Sell	Sell
Row89	ICICI	89.0	c2	No	Low	High	3.0	Sell	Sell
Row94	SBI	94.0	c2 c3	No	Low	High	1.0	Sell	Sell
Row97	SBI	97.0	c2 c3	No	Low	High	3.0	Sell	Sell
Row99	Micromax	99.0	c3 c4	Yes	High	Low	5.0	Buy	Buy





Roll No.	Name of Student	Date of Performance	Date of Submission	Sign.
309	Apurve Deshpande	9/2/2016	3/3/2016	