

MachineLearning_Assignment_1

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1/30/2022

```
stockexchange <- read.csv("C:/Users/HP/Documents/csv file/National_Stock_Exchange_of_India_Ltd.csv")
stockexchange
```

##	Symbol	Open	High	Low	LTP	Chng	X..Chng
## 1	ADANIPTS	750	766	713.25	715	-47.45	-6.22
## 2	ASIANPAINT	3,101.00	3,167.35	3,091.00	3,138.00	-6.25	-0.20
## 3	AXISBANK	669	674.9	660.45	661	-18.90	-2.78
## 4	BAJAJ-AUTO	3,370.00	3,383.50	3,320.00	3,335.00	-56.70	-1.67
## 5	BAJAJFINSV	17,200.00	17,237.20	16,610.00	16,684.00	-684.85	-3.94
## 6	BAJFINANCE	7,021.00	7,047.90	6,775.00	6,780.00	-345.80	-4.85
## 7	BHARTIARTL	763	763	733.1	735.85	-29.30	-3.83
## 8	BPCL	397.15	397.2	375	377.4	-22.70	-5.67
## 9	BRITANNIA	3,560.00	3,635.10	3,533.95	3,566.60	-6.80	-0.19
## 10	CIPLA	892	976.05	890.65	965	65.05	7.23
## 11	COALINDIA	157.75	159.4	155.35	155.9	-2.65	-1.67
## 12	DIVISLAB	4,770.00	5,077.70	4,756.75	4,940.00	140.20	2.92
## 13	DRREDDY	4,580.00	4,820.00	4,576.15	4,750.00	158.40	3.45
## 14	EICHERMOT	2,495.00	2,506.10	2,421.50	2,440.75	-79.65	-3.16
## 15	GRASIM	1,757.30	1,757.85	1,679.00	1,685.80	-80.95	-4.58
## 16	HCLTECH	1,120.00	1,126.00	1,103.30	1,111.65	-13.15	-1.17
## 17	HDFC	2,820.35	2,856.00	2,723.00	2,745.00	-122.75	-4.28
## 18	HDFCBANK	1,500.00	1,506.70	1,485.00	1,489.50	-36.45	-2.39
## 19	HDFCLIFE	685	689	667.1	669.75	-19.05	-2.77
## 20	HEROMOTOCO	2,580.00	2,589.70	2,505.15	2,526.80	-67.90	-2.62
## 21	HINDALCO	441.8	442.7	414.7	417.7	-29.35	-6.57
## 22	HINDUNILVR	2,344.00	2,365.00	2,325.20	2,340.90	-8.15	-0.35
## 23	ICICIBANK	739	742.05	718.6	720.45	-30.60	-4.07
## 24	INDUSINDBK	951	956.95	898	899.95	-59.35	-6.19
## 25	INFY	1,702.55	1,718.35	1,684.00	1,689.55	-32.85	-1.91
## 26	IOC	125.6	125.6	120.5	121.15	-4.50	-3.58
## 27	ITC	228.9	230.05	223.1	223.6	-7.70	-3.33
## 28	JSWSTEEL	668.25	672.55	624.25	630	-50.90	-7.48
## 29	KOTAKBANK	2,002.00	2,007.00	1,955.10	1,960.00	-75.10	-3.69
## 30	LT	1,820.00	1,841.75	1,768.60	1,781.00	-68.90	-3.72
## 31	M&M	885	885	843	855.05	-36.15	-4.06
## 32	MARUTI	7,520.00	7,520.00	7,130.00	7,150.00	-422.50	-5.58
## 33	NESTLEIND	19,148.85	19,434.10	18,982.50	19,250.00	71.95	0.38
## 34	NTPC	133.2	134.05	128	128.65	-6.55	-4.84
## 35	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74
## 36	POWERGRID	204.05	204.95	200.8	202.5	-1.75	-0.86
## 37	RELIANCE	2,467.80	2,477.60	2,401.50	2,405.10	-87.85	-3.52

## 38	SBILIFE	1,154.00	1,154.00	1,105.25	1,130.85	-28.65	-2.47
## 39	SBIN	486.25	487.9	467.1	470	-20.55	-4.19
## 40	SHREECEM	26,450.00	26,539.90	25,812.00	25,900.00	-770.50	-2.89
## 41	SUNPHARMA	775	798.9	762	767.25	-15.65	-2.00
## 42	TATACONSUM	800.2	805	763.15	769.9	-37.90	-4.69
## 43	TATAMOTORS	486	486.75	458	459.4	-33.35	-6.77
## 44	TATASTEEL	1,157.90	1,159.50	1,106.25	1,110.25	-63.40	-5.40
## 45	TCS	3,425.00	3,490.00	3,411.90	3,439.20	-6.70	-0.19
## 46	TECHM	1,544.00	1,550.00	1,510.15	1,519.00	-40.35	-2.59
## 47	TITAN	2,377.80	2,385.10	2,285.05	2,293.00	-104.80	-4.37
## 48	ULTRACEMCO	7,550.00	7,599.00	7,370.10	7,398.45	-210.35	-2.76
## 49	UPL	726	726	701	703.5	-23.80	-3.27
## 50	WIPRO	632	634.4	619.65	621.3	-15.40	-2.42
##	Volume..lacs.	Turnover..crs..	X52w.H	X52w.L	X365.d...chnng	X30.d...chnng	
## 1	72.20	532.63	901	384.4	79.22	-4.65	
## 2	10.29	322.53	3,505.00	2,117.15	45.66	5.66	
## 3	102.53	684	866.9	568.4	10.19	-21.49	
## 4	3.42	114.59	4,361.40	3,041.00	9.30	-12.05	
## 5	3.42	576.79	19,325.00	8,273.70	91.38	-9.10	
## 6	16.89	1,161.63	8,050.00	4,362.00	44.57	-13.69	
## 7	111.43	830.06	781.8	454.11	58.55	5.70	
## 8	100.23	383.54	503	357	-1.22	-12.45	
## 9	3.73	133.23	4,153.00	3,317.30	0.30	-3.42	
## 10	144.59	1,380.90	1,005.00	726.5	31.89	6.34	
## 11	118.30	185.5	203.8	123.25	25.78	-10.94	
## 12	15.71	775.37	5,425.10	3,153.30	42.39	-1.57	
## 13	10.72	508.97	5,614.60	4,135.00	-1.17	1.80	
## 14	5.55	136.56	3,037.00	2,303.70	-5.95	-5.77	
## 15	7.48	127.84	1,893.00	840.05	99.95	-3.08	
## 16	22.07	246.06	1,377.75	814.35	34.79	-4.73	
## 17	33.53	927.88	3,021.10	2,179.30	25.27	-5.72	
## 18	93.12	1,394.10	1,725.00	1,342.00	6.18	-9.88	
## 19	22.37	151.4	775.65	617.4	0.70	-2.94	
## 20	6.85	174.04	3,629.05	2,505.15	-16.02	-6.43	
## 21	148.26	631.93	551.85	220.35	86.93	-14.06	
## 22	24.51	572.85	2,859.30	2,120.00	9.60	-3.94	
## 23	189.88	1,385.86	867	465.8	52.41	-13.14	
## 24	67.46	622.74	1,242.00	789	5.25	-22.08	
## 25	44.94	764.67	1,848.00	1,091.00	51.44	-0.83	
## 26	77.25	94.57	141.5	84	41.28	-7.87	
## 27	270.27	610.54	265.3	192.4	15.35	-5.53	
## 28	89.22	574.61	776.5	336	86.25	-9.27	
## 29	26.48	522.52	2,253.00	1,626.00	5.24	-11.35	
## 30	27.97	502.81	1,981.75	1,092.00	59.59	-0.85	
## 31	39.34	338.08	979	660.25	18.77	-4.42	
## 32	11.55	840.81	8,368.00	6,400.00	1.34	-2.02	
## 33	0.56	108.61	20,609.15	16,002.10	9.87	0.17	
## 34	133.24	173.94	152.1	88.15	36.93	-10.16	
## 35	231.36	344.33	172.75	77.05	82.86	-9.41	
## 36	96.11	195.09	209.95	136.88	3.69	6.36	
## 37	72.75	1,770.19	2,751.35	1,830.00	23.48	-9.62	
## 38	23.16	262.43	1,273.90	825.2	33.19	-3.52	
## 39	263.06	1,249.55	542.3	240.15	93.42	-8.30	
## 40	0.30	76.94	32,048.00	22,531.00	9.29	-6.76	

```
## 41      54.33      424.05      851      502.3      51.57      -5.69
## 42      26.17      203.32      889      505.05      49.55      -4.82
## 43     517.88     2,430.36     536.7      156.7     167.95     -9.68
## 44     106.46     1,200.79   1,534.50     539.5     105.13    -17.37
## 45      19.41      670.58   3,989.90   2,624.45     27.32     -1.25
## 46      15.22      232.97   1,630.00     846.7     76.17     -2.83
## 47      12.89      298.54   2,677.90   1,300.35     75.45     -6.59
## 48       2.66      198.32   8,269.00   4,770.00     53.50      1.78
## 49      24.82      176.35     864.7     414.15     68.06     -1.37
## 50      41.39      259.37     739.85     346.25     77.51     -7.01
```

```
View(stockexchange)
mean(stockexchange$Chng)
```

```
## [1] -70.133
```

```
sd(stockexchange$Chng)
```

```
## [1] 163.2037
```

```
max(stockexchange$Chng)
```

```
## [1] 158.4
```

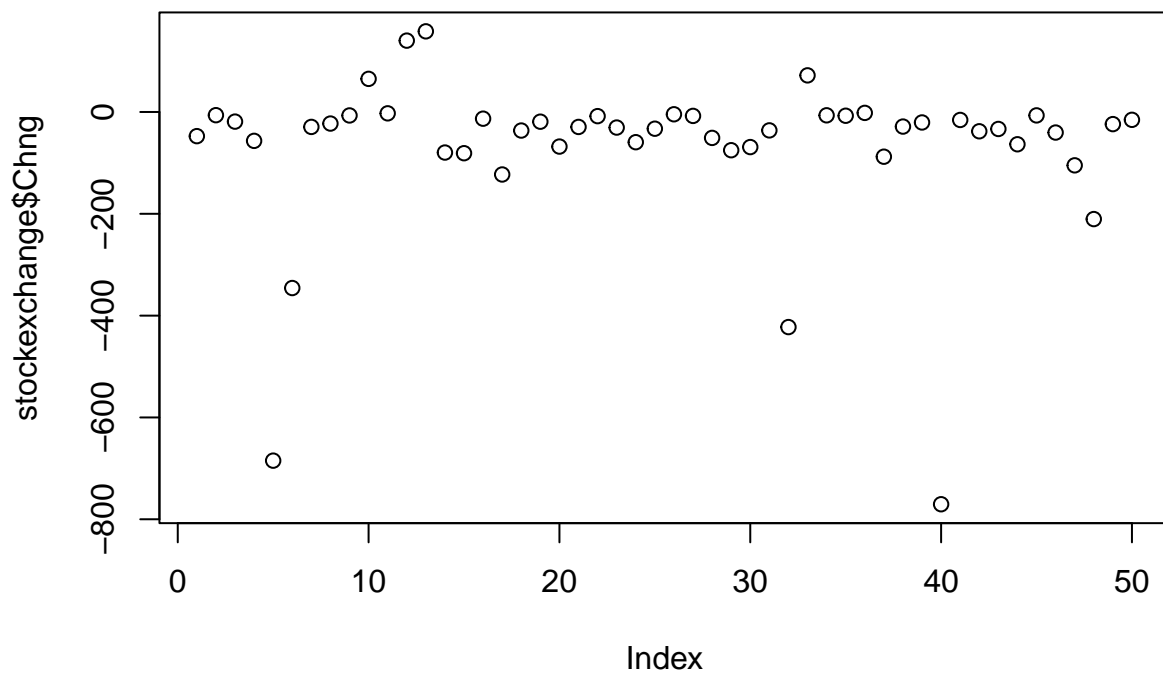
```
min(stockexchange$Chng)
```

```
## [1] -770.5
```

```
stockexchange$Chng_Ztransformed=(stockexchange$Chng - mean(stockexchange$Chng)) / sd(stockexchange$Chng)
stockexchange$Chng_Ztransformed
```

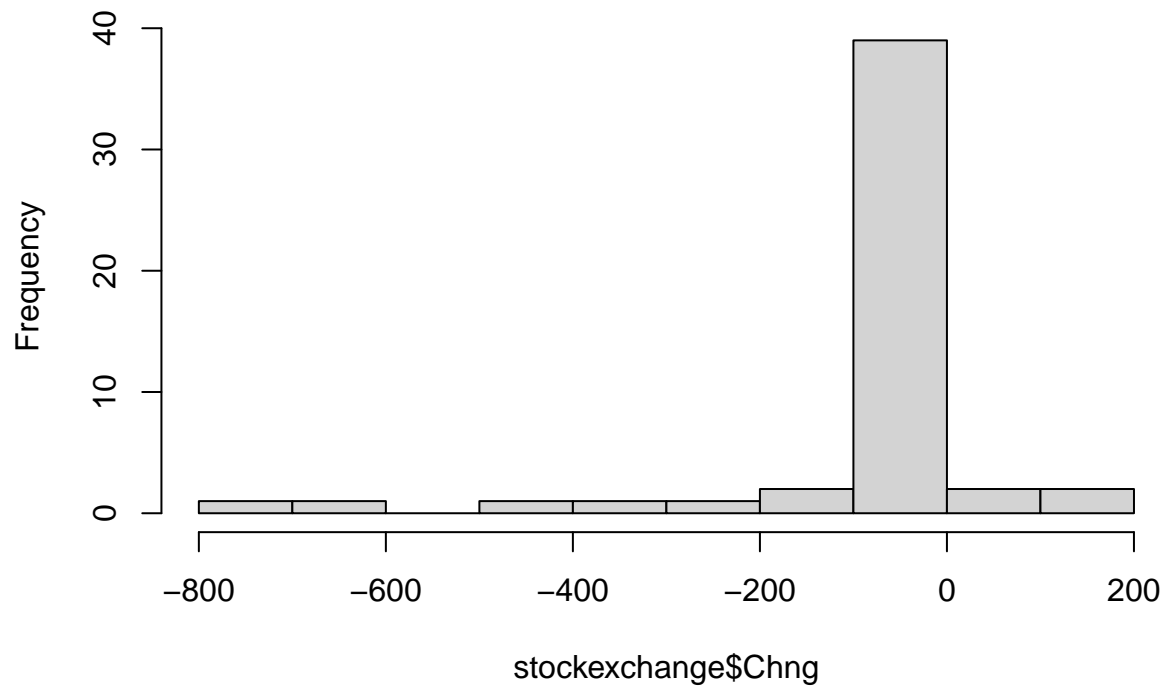
```
## [1]  0.138985838  0.391431130  0.313920622  0.082308194 -3.766563401
## [6] -1.689097964  0.250196567  0.290636833  0.388061108  0.828308539
## [11]  0.413489456  1.288776103  1.400293198 -0.058313637 -0.066279144
## [16]  0.349152671 -0.322400823  0.206386280  0.313001525  0.013682290
## [21]  0.249890202  0.379789235  0.242231061  0.066070815  0.228444607
## [26]  0.402153927  0.382546526  0.117846609 -0.030434363  0.007554977
## [31]  0.208224474 -2.159062863  0.870586998  0.389592936  0.384691086
## [36]  0.419004038 -0.108557603  0.254179321  0.303810555 -4.291367751
## [41]  0.333834388  0.197501677  0.225380950  0.041255198  0.388673839
## [46]  0.182489760 -0.212415556 -0.859153432  0.283896788  0.335366217
```

```
plot(stockexchange$Chng)
```

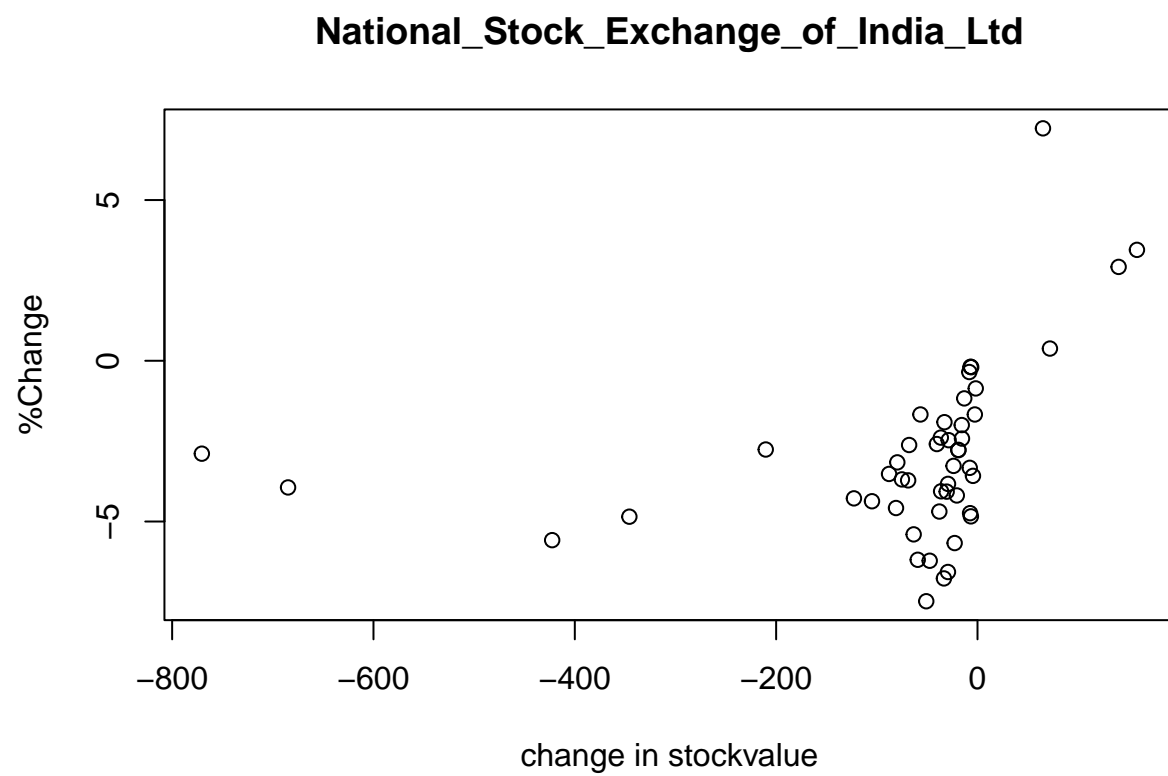


```
hist(stockexchange$Chng)
```

Histogram of stockexchange\$Chng



```
x <- stockexchange$Chng
y <- stockexchange$X..Chng
plot(x,y, main = "National_Stock_Exchange_of_India_Ltd", xlab = "change in stockvalue", ylab = "%Change
```



##Reference: <https://www.kaggle.com/iamsouravbanerjee/nifty50-stocks-dataset>