Name – Deepesh Kumar Singh CSULB ID - 016149963

Assignment 4 Output –

Exercise 1 :

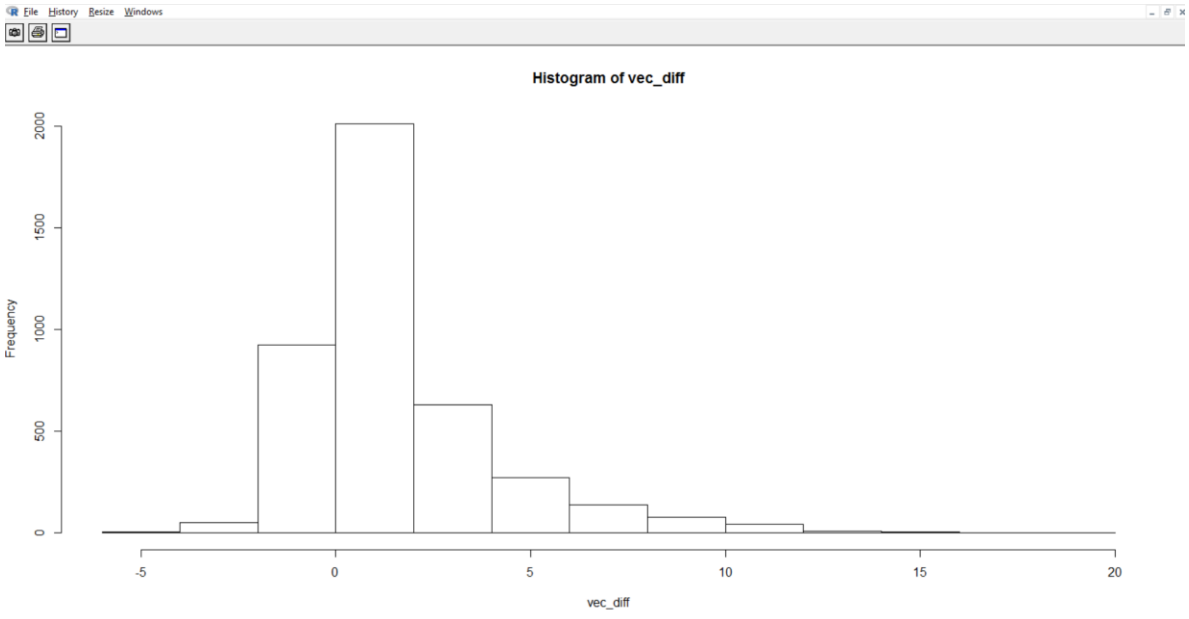
	COST	DEGREE	ACCURACY	TRAINING_ACCURACY
1	100.0	3	26.70019	33.76437
2	10.0	3	25.71839	29.47797
3	1.0	3	24.76054	26.72414
4	0.1	3	23.53927	24.61686
5	100.0	2	26.74808	31.80077
6	10.0	2	26.79598	28.83142
7	1.0	2	25.83812	27.46648
8	0.1	2	24.11398	24.83238
9	100.0	1	26.31705	27.65805
10	10.0	1	26.22126	26.89176
11	1.0	1	25.88602	26.19732
12	0.1	1	24.30556	24.64080

[1] 2 # BEST DEGREE

[1] 10 # BEST COST

1.031609 # AVERAGE DISTANCE

Histogram for 1st Question –



Name – Deepesh Kumar Singh CSULB ID - 016149963

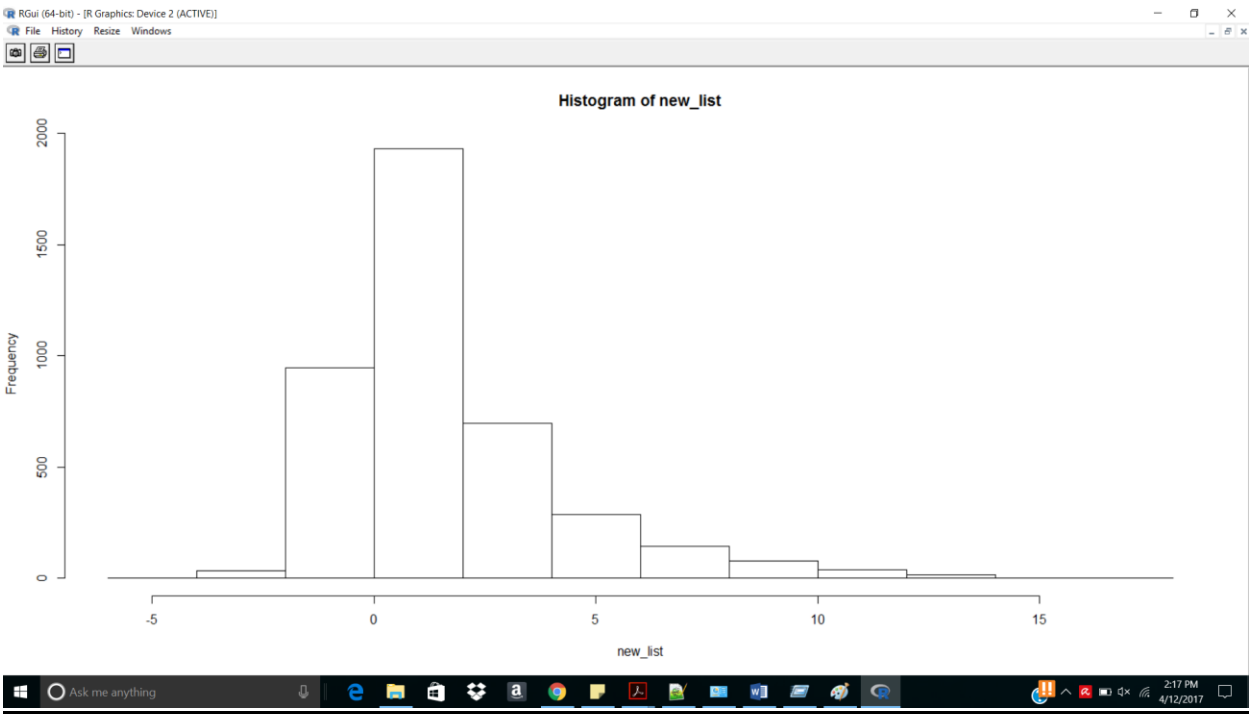
Exercise 2-

Description	nrow	Degree	Cost	Avg. Accuracy	Training Accuracy
9 or 10	1323	1	1	60.46863	60.92215
7 or 8 or 9	1648	3	100	55.33981	59.16262
5 or 6 or 7	374	1	100	74.86631	77.54011
8 or 9	1257	3	10	64.6778	65.23469
6 or 7	650	3	10	65.53846	68
10 or 11 or 12	1388	2	1	47.83862	48.48703
12 or 13 or 14	596	3	100	41.27517	61.91275
10 or 11	1121	2	10	59.58965	60.39251
12 or 13	470	3	100	60.21277	74.68085

Exercise 3-

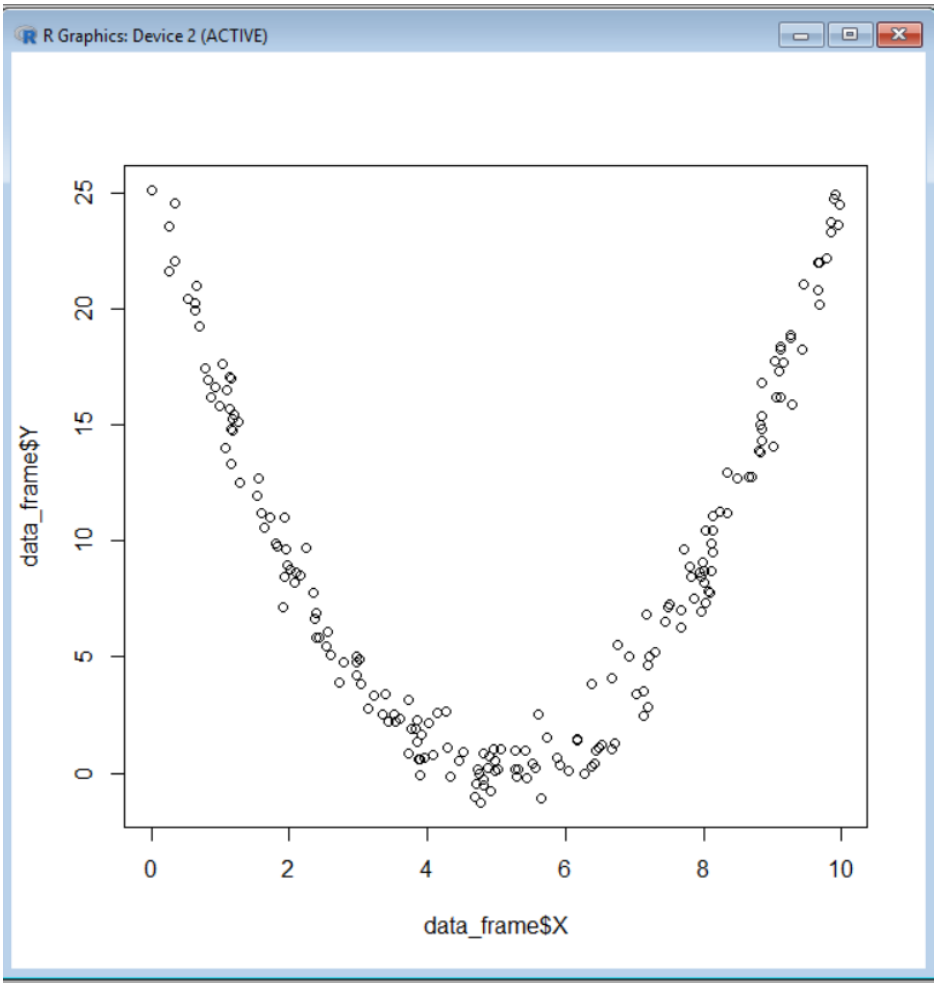
Average Distance[1] 1.090038

TRAINING ACCURACY[1] 28.42433



Name – Deepesh Kumar Singh CSULB ID - 016149963

Exercise 4 –



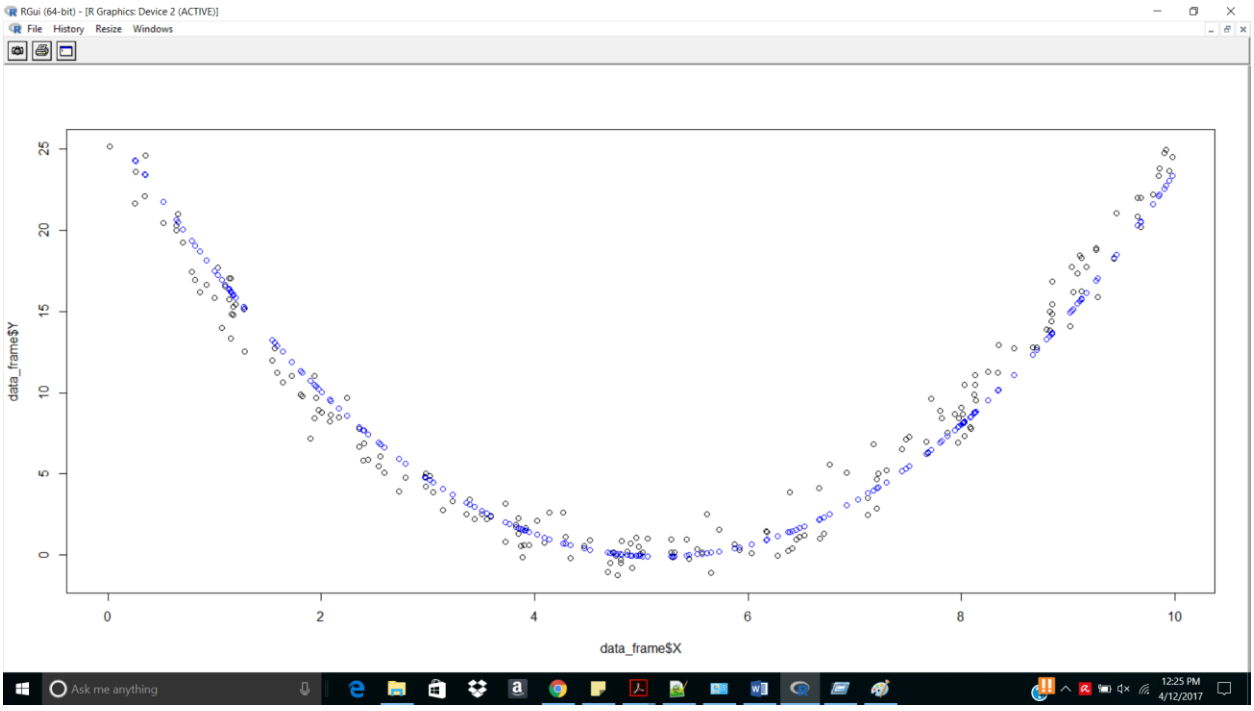
Above graph shows that the relationship is of type quadratic . Hence , we can say that the relationship between x and y appears to be quadratic .

	COST	EPSILON	MSE
1	100.0	1.75	63.785576
2	10.0	1.75	63.785576
3	1.0	1.75	63.785576
4	0.1	1.75	63.785576
5	100.0	1.50	45.451553
6	10.0	1.50	45.451553

7	1.0	1.50	45.451553
8	0.1	1.50	45.451553
9	100.0	1.00	18.091627
10	10.0	1.00	18.091627
11	1.0	1.00	18.091627
12	0.1	1.00	19.653880
13	100.0	0.10	1.756640
14	10.0	0.10	1.757142
15	1.0	0.10	1.757081
16	0.1	0.10	1.768594

Combination that resulted in highest average CV mse => **Epsilon = 0.1 , Cost = 100**

Exercise 5 –



Name – Deepesh Kumar Singh CSULB ID - 016149963

Exercise 6 –

Average distance of the predicted class from the true class =

0.086078

A histogram that shows the frequency of how often a predication is m rings away from the true number of rings =