REPORT ON ENSEMBLE LEARNING

K-Fold Cross Validation:

Here, we used K-Fold cross validation for supervised learning. We used Round = 30

For k=5,

Validation Set Number	Accuracy
1	90.09
2	85.59
3	85.59
4	91.07
5	91.96
Average	**88.86**

For k=10,

Validation Set Number	Accuracy
1	98.33
2	88.33
3	93.44
4	86.89
5	93.44
6	90.16
7	88.52
8	90.16
9	96.72
10	91.80
Average	**91.78**

For k=20,

Validation Set Number	Accuracy
1	93.548
2	80.645
3	96.77
4	87.50
5	87.50
6	93.75
7	90.625
8	78.125
9	93.75
10	93.75
11	96.875
12	96.875
13	93.75
14	84.375
15	90.625
16	87.50
17	87.50
18	90.625
19	81.25
20	**89.95**

Leave-One Out Cross Validation:

Here, we separated one data point as test data and other (n-1) data point as training data. We varied this test data point at each iteration. We have total 669 data points, of which we used 668 as training and another one as test. For 669 iteration, we got an accuracy of 90.58%

Comparison of different type of methods:

Classification is done using a 5 fold cross validation in each of these different classifiers.

Classifier	Accuracy(%)
Decision Stump	91.56
Boosting(30 rounds)	90.30
ID3 implementation	95.9

Accuracies obtained by boosting with different number of rounds:

Classification is done using a 5 fold cross validation in each of these cases.
For Rounds=5, accuracy = 89.57

For Rounds=10, accuracy = 90.31

For Rounds=20, accuracy = 88.48

For Rounds=30, accuracy = 90.30