







hardware to run; any standard machine is capable of running the application.

**F] Data Set**

The PID data set contained 768 cases that belonged to two classes, in which 268 cases (35%) were from patients diagnosed as diabetic and the remaining as healthy. The data set was divided into three subsets: 50% for training, 30% for prediction, and 20% for test.

**6. Experimental System**

Following table shows training time table. Initially Hyperboxes are formed using training dataset. The size of a hyperbox is controlled by  $\theta$  that is varied between 0 and 1. Once  $\theta$  is small, more hyperboxes are created. When is large, the number of hyperboxes is small. Confidence Factor (CF) is used to prune hyperbox i.e. CF of all hyperbox are calculated then hyperbox with CF less than threshold are pruned. Confidence Factor (CF) is used to prune hyperbox i.e. CF of all hyperbox are calculated then hyperbox with CF less than threshold are Pruned.

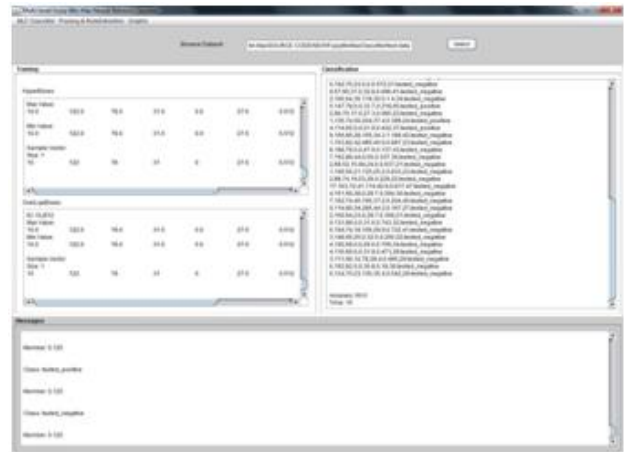
Sr. No	$\theta$	Total hyperbox created	Total hyperbox after pruning
1	0.2	29	16
2	0.3	12	7
3	0.5	10	6
4	0.9	10	6

Then during prediction stage the membership function and the Euclidean distance for FMM to predict its target output. Hyperboxes that have high membership function values is then selected. The number of hyperboxes preferred can be based on a user-defined threshold, e.g. the highest 10 percent membership function values. After that, the Euclidean distances between the selected hyperboxes and the input pattern are computed, and the hyperbox with the shortest Euclidean distance is most preferred, and the input pattern belongs to class represented by the hyperbox.

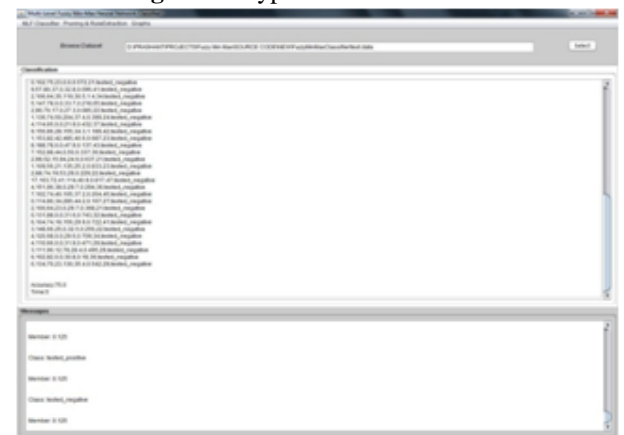
Rules	1	2	3	4	5	6	7	8	Class	CF
Rule1	2-3	3--5	3-4	1	1-3	2-4	1-3	1	1-3	0.8
Rule2	2-3	2-3	1-4	1-2	1	1-4	1-2	1-4	0	0.67
Rule3	1-2	1-4	3-4	1-3	1-2	2-3	1-2	1-5	0	1
Rule4	1	4	1	1	1	4	1-2	1	1	0.52
Rule5	1	5	4	2-4	1	4-5	1-5	1	1	0.52

**7. Result and Discussion**

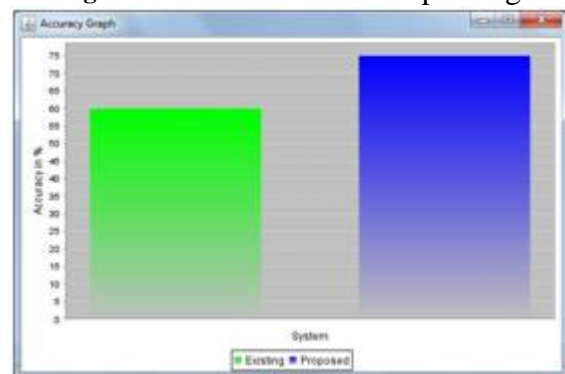
While building system we created hyperboxes and classified them fig.2 and then pruning is used to reduce extra hyperboxes. Fig.3. then rules are generated. We can compare and show graphically how proposed system is efficient by considering parameters like time, accuracy, number of hyperbox created.



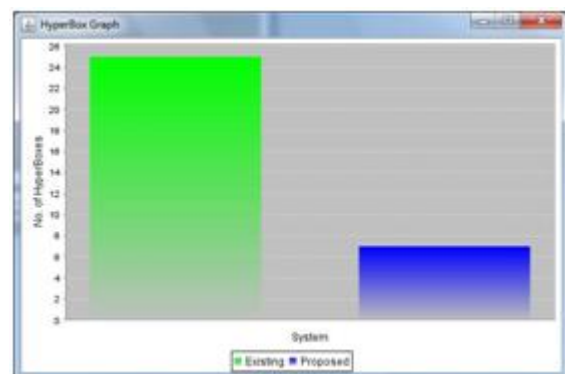
**Figure 2: Hyperbox Classifications**



**Figure 3: Classification after pruning**



**Figure 4: Accuracy Graph**



**Figure 5: Hyperbox Graph**

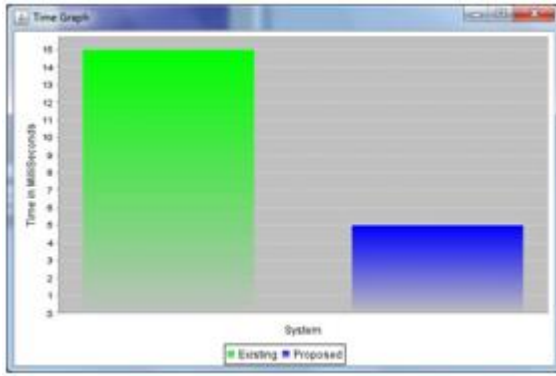


Figure 6: Time Graph

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## 8. Conclusion & Future Scope

Fuzzy set of min-max hyperboxes exist in to fuzzy positioned classes and it is used by NN classifier. Previous information can be used by apriori algorithm. Some cases are used to discover the competence of fuzzy min-max classification neural network to demonstrate boundary in covering classes , learn very nonlinear choice limits, also give comes about on a standard information set that was comparable to other neural and customary classifiers. fuzzy min max neural network is created in this work. At first the information set is separated into two stages i.e. training and testing. The prepared dataset is situated to hyperbox development and after that set to pruning. In future, one can use the maximum hyperbox effects of  $\theta$  on classification accuracy. Even we plan to apply MLF to application areas such as text classification and speech recognition, which have high dimensional feature spaces with complicated class boundaries.

## 9. Acknowledgment

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