**ABSTRACT**

The rule generation is implemented for heart disease dataset by using Rough Set Theory. Many organizations used to store their previous experiences and knowledge as the table form and apply them in making decisions for coming problems and difficulties. Various sample Datasets can be obtained from the Internet for many researches. The heart disease dataset is used to implement the rule generation in this system. Dataset may be expressed as the table form with rows and columns. Rows are defined as the patient’s records and columns are defined as the symptoms of patients. Each row can be considered as one rule because it has condition attributes and decision attribute. But if all of the condition attributes are used in generating rules, the quality of the generated rules may be degraded. So, unimportant attributes need to be reduced to get the optimal and minimal rules.

Any real world dataset may contain large number of attributes and objects. Classifiers give poor performance when these huge datasets are given as input to it for proper classification. So from these huge dataset, most useful attributes and values need to be extracted that contribute the maximum to the decision. Rough Set Theory can handle inconsistent objects and generate minimal rules directly from the original dataset by reducing unimportant attributes. The basic concept of Rough Set Theory is the upper and lower approximations to handle inconsistencies in the dataset. Inconsistent objects have the same value in condition attributes and the different decision class with other objects. These objects make the generated rules bad quality.

Rough Set Theory (RST), new mathematical approach to imperfect knowledge, is popularly used to evaluate significance of attribute and helps to find minimal set of attribute called reduct. A reduct is the minimal subset of attributes that enables the same classification of elements of the universe as the whole set of attributes. In other words, attributes that do not belong to a reduct are superfluous with regard to classification of elements of the universe. By reducing attributes and values from original dataset, the decision rules can be generated directly using discernibility relation of JOHNSON’s algorithm.