**Abstract**

With the help of data mining, an important and valuable knowledge is extracted from the large massive collection of data. There are s several techniques and algorithms are used for extracting the hidden patterns from the large data sets and finding the relationships between them. Clustering is one of the important techniques in data mining. Clustering algorithms are used for grouping the data items based on their similarity. Outlier Detection is a very important research problem in data mining. Clustering algorithms are used for detecting the outliers efficiently. In this research paper, we focused on outlier detection in health data sets such as Pima Indians Diabetes data set and Breast Cancer Wisconsin data set using partitioning clustering algorithms. The algorithms used in this research work are PAM, CLARA AND CLARANS and a new clustering algorithm ECLARANS is proposed for detecting outliers. In order to find the best clustering algorithm for outlier detection several performance measures are used. The experimental results show that the outlier detection accuracy is very good in the proposed ECLARANS clustering algorithm compared to the existing algorithms.