WORK PLAN AND METHODOLOGY

METHODOLOGY

1) Study of various types of mentally challenged children, for example autism, cerebral palsy, spastic cerebral palsy, dyslexia, speech impaired cerebral palsy, children with low IQ level, epilepsy, down syndrome, hydrocephalus, muscular dystrophies.

2) From the above various types of mentally challenged children I am more interested to do my research work on children suffering from cerebral palsy in the age group of 5 to 18 years.

3) The research work is based on two methods:-
   a) Classification
   b) Clustering

4) Based on the symptoms, CP (Cerebral Palsy) is classified by using decision tree and creating cluster by clustering technique.

5) J48 algorithm is used in constructing the decision tree.

6) K-means algorithm is used in creating the clusters of CP.


8) MATLAB software will be used as a designing and developing tool in this process.
PLANNING OF RESEARCH:-

Area of work: Thane District

Nature of research: - I will be going to many spastic children rehabilitation centre and collecting data using questionnaires.

How my research is useful for the society:- In the society there are many mentally challenged children whose parents are not at all informed about the medical state of the child. They think the disease is a curse on them and are not aware of the available treatment that is needed for the child. If the proper treatment is started at the early stage, possibility to the recovery rate is much higher. Using data mining technique, data will be classified in different types of CP symptoms and signs. With the help of this data we can come to a conclusion about the recovery rate of the various types of CP.

Why I am keen for this topic:- I really want to help the mentally challenged children, and by using the classified data: the parents would be in a better position to take a proper decision for the child’s treatment, so that the child can be self-independent.

Software: WEKA: MatLab7.10

WEKA

WEKA is a suit of machine learning software applications written in the java programming language. WEKA is Waikato Environment for knowledge analysis. It is a collection of machine learning algorithms for data mining tasks. The algorithms can either applied directly to data set or called from your own java code. WEKA contains tools for data pre-processing, classification, regression, clustering, association rules, and visualization. WEKA provides access to SQL databases using JAVA database connectivity and can process the result returned by a database query. It is not capable of multi relational data mining: but there is a separate software for converting a collection of linked database tables into a single table that is suitable for processing using WEKA.
**MATLAB**

MatLab (Matrix Laboratory): an engineering and scientific data analysis tool to perform data mining. This software was originally intended to perform purely numerical calculations. Now it is having hundreds of mathematical functions. It is a programming language with hundred built-in functions and numerous available toolboxes. MatLab ease of data processing: visualization and its enormous availability of built in functionalities and toolboxes make it suitable to perform numerical computations and simulations as well as a data mining tool.

MatLab7.10, is a numerical computing environment and fourth generation programming language. Dr.CleveMoler, Chief Scientific at Math Works, Inc., originally wrote Matlab in late 1970s to provide easy access to matrix software developed in LINPACK and EISPACK projects. It is an interactive program that helps with numeric computation and data visualization. It is built upon a foundation of sophisticated matrix software for analysing linear systems of equations. Typical areas of application of MatLab include math and computation, algorithm development: data analysis, data exploration, application development, etc.