Employee Performance Evaluation Using Data Mining Techniques

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Abstract:

The strength of any organization is depend on the Employees performance. The evaluation of employee is the most important function of the HR. Evaluation of employee is a continuous process of measuring employee performance against the company's goal. The effective evaluation system of employee performance are help to take decision like development of employee, training, promotion and behavioural aspect. For this purpose we build classification model to predict the employee performance by adopting the technologies Like J48 decision tree, SVM and Naïve Bayes Classification technique.

Keywords: SVM,J48,Decision, Prediction

1. Introduction :

Human resource are the most important part of any Organization. From many years, organizations are facing the challenge of monitoring and improving the performance of their employees to improve the performance of the organization as a whole and to gain a

competitive edge. This problem can be solve by using continuous assessment of those employees' Whoever are the part of that organization by using their previous records and system. Which will able to assess the performance called as Employee Performance Evaluation System is able to give the overall performance report of an employee. System should able to give the feedback and recommendations .There were multiple domains like Financial, medical. Stock market, medical were this data mining techniques are used. Data Mining has the ability to find the similar pattern and relationship among the data. Data mining consists itself with machine learning, statistics and

visualization techniques to discover and extract knowledge. Application of data mining in education sector is an emerging trend. The data mining terms, tasks, techniques and application can be used in education sector [4].the Accuracy in evaluation of the employee's performance will able to help in his further recruitments and appraisal too.

2. Methodology :

1. Naïve Bayes:

The employee performance was predicted by expending data mining method named classification rules. Administrator predict employee's performance on the basis of parameters like age, marital status, working hours, leaves etc. used the NB (Naïve Bayes) classification algorithm. A Naïve Bayes classifier was simple probabilistic classifier founded on relating Bayes theorem by naive impartiality assumptions. It was easy to understand, required training data to parameters estimate, Unresponsive to unrelated features, handled real and distinct data well.

2. SVM:

SVM algorithm basically used for the classification and regression. The idea of SVM is simple it just create a simple hyperplane between the two classes for their separation. SVM are support for the regression problems also for generating cluster of same data from the given data. It uses the function kernel for transform the data and the transformation will generate the boundary lines between the classes.
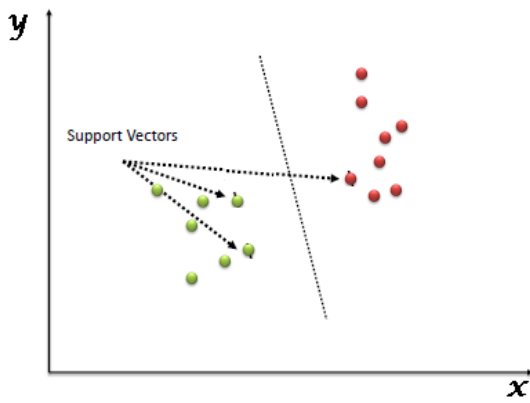
Fig 1 :Support Vector

3. J48 algorithm

This Algorithm is used for creating the Decision tree to predict the class attribute for given instance by training the Dataset. It is Extension for the ID3 Algorithm which have the ability to Predict the output with [7].

4. Result:

By using three algorithms name as J48, Naïve Bayes, SVM we are evaluate the employee performance for the best efficiency of their performance. In previous work no one will include this three algorithm for the evaluation of employee performance. SVM algorithm gives 87% of the accuracy of the evaluation process.
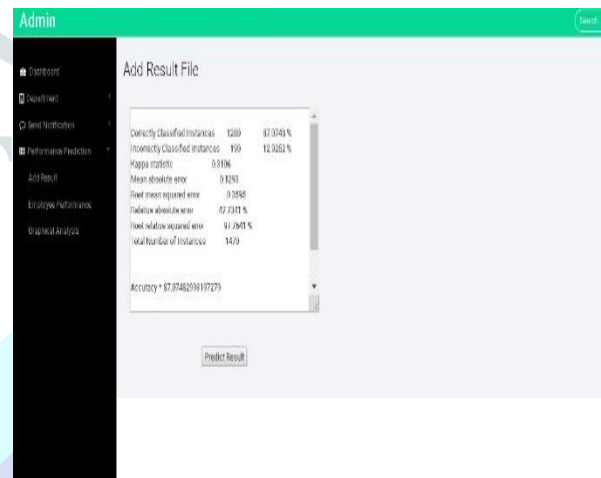

Fig 2: High Performance Graph
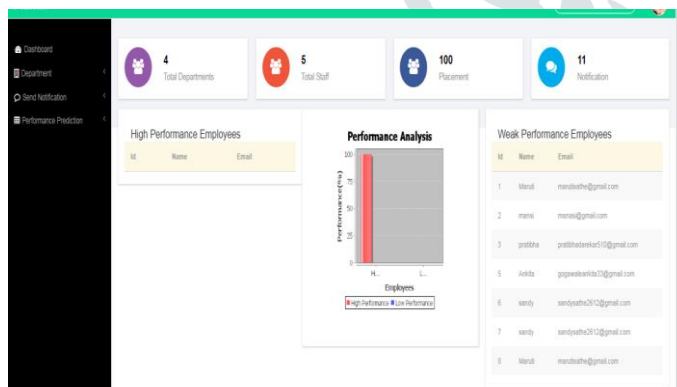

Fig 3 : Precision ,Recall Graph

Fig 4 : Accuracy,Error Rate Calculation

5. Conclusion:

In this paper we can conclude that module will efficiently able to evaluate the performance of the employees with accuracy of 87.078%. It will help to achieve the strategic goal of an organization as well as help in maintain in documents regarding employees .this system is able give the feedback and suggestion for appraisal of an employee's.

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Attributes	Possible Rating Values
Age,Distance from Home,	Numerical
Job Level,Job Satisfaction,Daily Ratings ,Last year in Current Role,Yars At company.	Numerical(1-5)
Gender,Prediction ,Education	Nominal

Table 1 : Attributes Used For Prediction

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