In this paper, we present the application of the neural network for the identification of Reusable Software modules in Procedure Oriented Software System. Metrics are used for the structural analysis of the different procedures. The proposed metrics for Procedure oriented paradigm are Cyclometric Complexity Using McCabe’s Measure, Halstead Software Science Indicator, Regularity Metric, Reuse frequency metric, Coupling Metric. The values of these Metrics will become the input dataset for the different neural network systems. Neural Network Based Approach is used to establish the relationship between different attributes of the reusability and serve as the automatic tool for the Evaluation of the reusability of the procedures by calculating the relationship based on its training. Different Eleven Training Algorithms of neural network are experimented and the results are recorded in terms of Accuracy, Mean Absolute Error (MAE) and Root Mean Square Error (RMSE). The results show that Conjugate
Gradient with Powell/Beale Restarts (CGB) is best for the evaluation of reusable modules of procedure oriented software systems. Hence the proposed model can be used to improve the productivity and quality of software development.

Reference

Framework for Evaluating Reusability of Procedure Oriented System using Metrics based Approach


Index Terms

Computer Science    Software Engineering

Key words

Software reusability    Neural Networks    MAE
RMSE
Accuracy
CGB