Abstract

Dependency analysis is advantageous technique that has many applications in software engineering activities. In component-based system (CBS), Dependencies can solve implicit problems such as integration testing, regression testing, change processing, component reusing and version control. In order to promote testing of the CBS, it is necessary to analyze the mutual impact between components and form a description of dependencies. During the present time dependency analysis is one of the important research fields in CBS. This paper presents a minimum spanning tree approach to analyze dependency in Component Based Systems (CBS). First we calculate the dependency of each component using Minimum
Spanning Tree in component based system and then calculate the dependency of each component using Analytical Hierarchal Process. Finally we calculate the Correlation Coefficient of the two techniques.

References


- Won, M. , "Managing Dependencies in Component-Based Distributed Applications".
- Li, B. , "Managing Dependencies in Component-Based Systems Based on Matrix Model".
Dependency Analysis for Component based Systems using Minimum Spanning Tree


T. L. Saaty, Int. J. Services Sciences, Vol. 1, No. 1, 2008, "Decision making with the analytic hierarchy process".

Pearson's r, Spearman rho Other Coefficients of Note Coefficient of Determination r2 "Correlation Coefficients The Meaning of Correlation".

Callaghan, K., Ph. D. "The Correlation Coefficient".


Index Terms

Computer Science Component Based System

Keywords

Component Interaction Interfaces Dependency Component Based Systems Component Dependency Graph

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Minimum Spanning Tree

Correlation Coefficient