Abstract

Software development and usage become very important in many aspects of our lives, so that the application of software metrics becomes more important. Software metrics are used to give valuable information for the development of software. This paper focuses on the study of the maintainability of an open source operating system "Linux". Computing the relative weight of each maintainability parameter. The research was conducted on Linux Kernel modules (V. 3.9.2). The research performed on 837 functions from selected modules to compute a maintainability index "MI" for each function and module. Also calculate the correlation between each parameter for Maintainability Index (MI) with the other parameters and with the MI itself. The parameters of MI are Line of Code (LOC), Cyclomatic Complexity (CC), and Halstead Volume (HV). Practically approved that, first the Line of Code and Cyclomatic Complexity values are distributed normally; but Halstead Volume is distributed uniformly. Secondly, there is an interconnection between Line of Code, Cyclomatic Complexity, Halstead Volume and Maintainability Index. Finally the most important parameter which affects maintainability index is Line of Code, then Cyclomatic Complexity and lastly the Halstead Volume.
Correlations and Weights of Maintainability Index (MI) of Open source Linux Kernel Modules

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Keywords
Maintainability Index (MI)  Analytic Hierarchy Process (AHP)  Correlation coefficient

Chi square test