Abstract

Maintainability has been a big challenge for the information technology industry. Every stakeholder in the context of software application needs a maintainable software. The basis of this concern is the cost that the software maintenance consumes. In continuation with this crucial issue, this paper has developed a Maintainability prediction model that quantifies the software Maintainability through fuzzy techniques in the early phase of software development life cycle. The focus of the paper is the Maintainability quantification prior to the coding phase so that the personnel involved in developing the software should be able to take suitable and timely measure. If they get any input before the start of coding, then definitely they will do the correction in a cost-effective manner. This study identified product based object-oriented design measure and integrated them with fuzzy inference system. The developed model has also validated, along with appropriate predictive accuracy results.


Index Terms

Computer Science          Fuzzy Systems

Keywords

Software Maintainability, Early Stage Prediction, Fuzzy Logic, Software Defects, Software Metrics, Software Maintainability Model, Object-Oriented Design, UML Class Diagrams.