Abstract

The applications of computer systems have been increased immensely during the last few decades and the system reliability is major concern which is depends upon reliability of software and hardware components. Software testing is quality assurance process which confirms that the product is error free and reliable. The reliability of software is major quality attribute which ensure failure free operations and maintainability, therefore reliability assessment is necessary. Software reliability control the optimal release time and cost of software development. In this paper various fault detection and removal strategies are discussed to increase the reliability. A software reliability growth model with imperfect debugging based on Non-homogenous Position Process (NHPP) model is incorporated. The reliability estimation is based on testing and operational reliability of systems. The various numerical parameters are examined and results are presented with the GA tool of MATLAB for optimal release policy based on cost and reliability criterion.

References
5. Agarwal et al.[2010], ‘Optimal testing resource allocation for modular software considering imperfect debugging and change point using genetic algorithm’, DOI:10.1109/ICRESH,2010
18. Jain and Priya[2005] ‘Software reliability issues under operational and testing
Cost Optimization of SRGM using Genetic Algorithm


27. Jain et al. [2013], ‘Prediction of reliability growth and warranty cost of software with fault reduction, imperfect debugging and multiple change point, international’, journal of operation research.

Index Terms

Computer Science
Algorithms

Keywords

Reliability growth, Non-homogeneous Poisson process Genetic Algorithm, Optimal release policy.