Open Source Software Reliability: A Review Paper

Jaspreet Bhatia¹ and Eshna Jain²

¹,²Department of Computer Engineering, Indira Gandhi Institute of Technology, GGSIPU, Delhi, India
¹jaspreet2709@gmail.com and ²eshnaeshna@gmail.com

ABSTRACT
In this paper we analyse the different views given by various researchers about OSS reliability. Some maintain that OSS is reliable while the others do not agree with the same. We present different methods to assess the reliability of OSS, including SRGM’s, bug report analysis, Weibull distribution model, stochastic differential equation modeling. Different SRGM’s discussed are exponential SRGM, inflection S-shaped SRGM, deterministic chaos theory based approach. The mean value function of various Software Reliability Growth Models (SRGM) using Non-homogeneous Poisson process are presented. SRGMs are used to access the reliability of the distributed software and its components. We state and analyse various factors on which software reliability depends.

CONCLUSION
In this paper, we have focused on the various views given by numerous researchers on the open source software reliability. Analysis of the various factors on which the reliability of open source software depends has been done. Several software reliability growth models used to assess the reliability of both, individual components and the software as a whole are studied along with various other methods being used to measure software reliability.

FUTURE SCOPE
We intend to further analyse the various methods and models so far proposed. So that we could suggest improvements in the existing models and also in the various methodologies used to assess OSS reliability.

REFERENCES
[1]. Yoshinobu Tamura and Shigeru Yamada, 2006, Comparison of Software Reliability Assessment Methods for Open Source Software and Reliability Assessment Tool. Tottori University, Japan
[4]. Pankaj Jalote, Brendan Murphy, Mario Garzia, Ben Errez, Measuring Reliability of Software Products. Microsoft Corporation, Redmond, WA
[6]. Hoang Pham, Software Reliability, The State University of New Jersey, USA.
[7]. Ying Zhou, Joseph Davis, Open source software reliability model: An empirical approach, School of Information Technologies The University of Sydney.