


How testable is business software?

Peter Schrammel 

University of Sussex, Brighton, UK

Diffblue Limited, Oxford, UK

Email: p.schrammel@sussex.ac.uk

Abstract—Most businesses rely on a significant stack of software to perform their daily operations. This software is business-critical as defects in this software have major impacts on revenue and customer satisfaction. The primary means for verification of this software is testing. We conducted a large-scale analysis of Java software packages to evaluate their testability. The results show that code in software repositories is typically split into portions of very trivial code, non-trivial code that is unit-testable, and code that cannot be unit-tested easily. This brings up interesting considerations regarding the use of test coverage metrics and design for testability, which is crucial for testing efficiency and effectiveness, but unfortunately too often an afterthought. Lack of testability is an obstacle to applying tools that perform automated verification and test generation. These tools cannot make up for poor testability of the code and have a hard time in succeeding or are not even applicable without first improving the design of the software system.