DEVELOPMENT OF A FRAMEWORK FOR ACCELERATED AUTOMATED TESTING IN GUI QUALITY ASSURANCE

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In the iterative and incremental (agile) process of software development, the Quality Assurance (QA) and the time spent on it play a vital role. Usually, QA engineers do manual testing via executing a set of steps related to a set of test cases which is time consuming and they may or may not have the exact knowledge of the technologies used in the project. The objective of our research was to develop a novel framework for automated testing, allowing QA engineers to test any standalone application with minimal technical understanding of the application being tested. Our tool allows a tester to automatically execute the test cases' steps by giving them in normal text or HTML format and will provide test execution reports in XML or HTML format so the results can be easily shared through a web dashboard if necessary. The presented framework was verified for improved productivity by complete automated testing of an Eclipse plugin GUI. Although there are a few automated testing tools available, they would not be feasible due to reasons like high cost, difficulty to extend or require tester's experience on the technologies used etc. For example, most of the popular QA automation tools (such as Selenium) support only web applications testing and tools available for standalone applications' testing (such as QTP) are highly expensive. Also, it is rare to find a feasible automated testing methodology to test applications which depend on the hosting application such as plugin GUIs. Our implementation differentiated from existing tools since it provided solutions to above mentioned obstacles. It was developed based on open source software and has proved to be a feasible and an extensible solution. It supports automated testing of standalone applications and plugin GUIs. It can effectively be used for functional testing of GUIs which also supports acceptance test driven testing to which traditional testing is now being moved to.

Keywords: Acceptance driven testing, Agile development, Automated testing, Extensible framework, Graphical user interface