

Abstract:

since technology advances, the complexity of web applications increases over time. Several testing techniques are available for web applications, however, there are limitations also in testing techniques.

Web apps like mobile apps suffer from test fragility. For example, tests fail or need updates due to minor modifications in the web Application Under Test(AUT).

The objective of this thesis is the estimation of the adoption of automated testing frameworks among open-source web applications, and the quantity of modification needed to keep test files up to date.

The measurement is based on some metrics which quantify how much the testing frameworks are adopted and how frequently the test files are modified upon different releases of the application. When presenting the testing framework, A set of 8 metrics were introduced for the adoption of testing tools in each open-source web application. On average the measurement presented so far for each coseciutive tag release is less than the expected value.

Each metric is computed based on 3 testing frameworks that achieved non-significant adoption among web application projects on Github.

So far it seems the fragility of tests constitutes a relevant concern probably an obstacle for developers to adopt test automation. The problem could be not using testing frameworks in the process of developing, not updating test files in the development process, or not writing new test cases in bug fixing. However, updating tests needs more effort and increases the cost of development.