

Preliminary Report

Mariano Pecorella

Student ID: 3343014701

1 Introduction

Software testing is an indispensable practice for all software development.

It is defined as: *“a formal process in which a software unit, several integrated software units or an entire package are examined by running the programs on a computer. All the associated tests are performed according to approved test procedures on approved test cases (Galin, 2004). “*

Testing an application, or a software can often be laborious and can lie to effectiveness and it plays an essential role in Quality Assurance of an organisation.

To find a more efficient ways to perform more effective testing is a challenge in testing pratiques.

Software Testing is a requisite of the software engineering discipline.

Automated software Testing is the best way to increase the the efficiency and coverage of the software testing.

It also improves the accuracy and it saves the time of the testers and the money of the organisation.

2 Aims and Object

The main aim is to study about different Software testing techniques and methodology.

1) How can Software testing can be more efficient in different development lifecycle different from the Agile development?

2) How is the current practice for software testing in Agile development?

The aims is also to produce an automated test suit to test an iOS and Android application to ensure Quality of the software.

By quality its means different aspect :

- Reliability
- Usability
- Security
- Maintainability
- Testability

My project will be focused on testing application running on Android ad iOS Operating System.

Considering the exponential growth of mobile apps development since last 20 years, more and more testing is required for ensure quality of the product delivered.

Question of resources :

How to optimise the Development Lifecycle?

Is there something that is very crucial for the final product deliverability?

How can we ensure quality of a software?

3 Methods:

For the literature review I will use research papers, new and old books.

To define:

-Test Cases - To develop

A test case is a set of condition written in plain English for a particular application or piece of software, normally testers runs all those condition to ensure the correct functionalists of the application or software.

-Manual Testing:

Is a technique that testers uses to discover bugs related to the usability and GUI.

-Automated Testing:

It uses special software to write and execute Test Cases. It compare the actual outcome to the expected one.

Once the Test Cases are automated they can run quickly and repeatedly on the test environment.

-Testing Environment (The idea is to use some frameworks that are “indispensabile” for the esectution of the tests) :

Some test are automate and they runs on different environment from the production or the live environment, normally a corporation or organisation have a dedicated testing environment.

4 Project Plan

Planning to create a Git repository in which all the code will be stored.

The usage of a project management plan will keep the workflow organised and will help to decide what to do next.

Having a planning tool like Trello or Jira is important to keep track of what has been done and prioritise the work to be done.

The intention is to use some automation tools like Selenium and Appium, And cucumber.io for the process of automating the test cases.

Introduction to Selenium:

- Selenium web-driver

Is a software tool that automate actions on different web browsers.

- Appium API

Is an automation tool for testing mobile app and native application on iOS, Android and Windows mobile platforms.

5 Progress to Date

Progress and date of the progress will be recorded and followed using some organisational tools like Trello.

6 Planned Work

The plan for this work is to implement this test suit in Javascript along side with some framework for automation for the iteration with different devices to test on.

The next stage of the project

7 References

- [1] P. Sfetsos, I. Stamelos, “Empirical Studies on Quality in Agile Practices: A Systematic Literature Review”, Quality
- [2] Stefan Berner, Roland Weber, and Rudolf K. Keller* , “Observations and Lessons Learned from Automated Testing”,
- [3] Gregg Rothermel, Alessandro Orso , “Software Testing: A Research Travelogue (2000–2014)”,
- [4] Adnan Causevic, Daniel Sundmark, Sasikumar Punnekkat , “Factors Limiting Industrial Adoption of Test Driven Development:A Systematic Review .
- [5] Antonia Bertolino , “Software Testing Research: Achievements, Challenges, Dreams”
- [6] Vishawjyoti*and Sachin Sharma, “STUDY AND ANALYSIS OF AUTOMATION TESTING TECHNIQUES ”,
- [7] R. M. Sharma , Quantitative Analysis of Automation and Manual Testing
- [8] <https://docs.cucumber.io/>
- [9] https://www.seleniumhq.org/docs/01_introducing_selenium.jsp