**Cavok App Automated Web UI Testing**

(Company Oriented Project – 1)

PROJECT FINAL REPORT

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# 1. PROJECT DESCRIPTION

* **Company:** Cavok App (<https://www.cavokapp.com/>)
* **Project team:**

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* **Project scope and environment:**

This project involves implementing automated web UI testing of the website (<https://www.cavokapp.com/>). Cavok App is a web application owned by Mr. Lasse Haverinen, OAMK, Oulu, Finland which serves as a logbook for commercial and private pilots as well as management and invoicing application for flight organizations.

Certain sections of the web application are tested in this project with possibility to further continue. Please refer to Appendix 1 (Test Cases) for list of Cavok App features tested with automated tools in this project. Tests are divided according to workflow of the user. This project covers the login and logbook page features of the Cavok App application.

* **Project goals and sub-goals and/or requirements:**
* To understand how software testing is carried out in any software development lifecycle as well as different types of automated tests and tools to implement.
* To successfully implement automated tests on Cavok App web application.
* To reduce the repetition and time of manual tests making testing more efficient.
* To have basic knowledge of automated tools such as Robot Framework, Selenium, documentation related to tests, etc. by the end of the project.
* To create tests with end-user workflows.

# 2. PROJECT SCHEDULE

This project was carried out in three phases:

1. Learning
2. Planning
3. Implementing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phase** | **Tasks** | **Duration** | **Hours Estimated** | **Hours Spent** |
| Learning | Self-study about different automated test tools and understanding latest technology. Various online resources and tutorials were used to have enough skills to be able to independently start an automated test project. The list of automated technologies learned during this phase include:   * Selenium * Python * Robot Framework (Selenium Library) * PyCharm IDE * Writing test documents | Weeks 1-2  10.05.2019 – 24.05.2019 | 50 | 49 |
| Planning | This phase started with identifying an application to be tested (Cavok App: <https://www.cavokapp.com/>). It mainly involved getting to know the web app to be tested and planning how tests are to be executed. Each feature of a part of the web app was analysed to understand if automated test will be carried out and how work flows are done. Test cases (Appendix 1) were also written to make test suites easier to implement. | Week 3  25.05.2019 – 31.05.2019 | 20 | 23 |
| Implementing | Test scripts were implemented on this phase on login and logbook test suites which were successfully run giving desired output. Codes were also made more readable with different page objects and organizing sections of the web app with separate files for each. All test cases were executed with room for improvement for example locators could be separated from the keywords section with their own variable names which make codes even more readable. | Weeks 4-8  01.06.2019 – 05.07.2019 | 80 | 75 |

**Total Hours Estimated: 200**

**Total Hours Spent: 201 (Including hours spent for initial project of Kawa)**

# 3. EXPERIENCES OF THE TOOLS USED IN THE PROJECT

* **Tools used in this project:**

Automated Tools:

* Robot Framework
* Selenium Library (Robot Framework)

IDE: PyCharm

Programming Language: Python

Version Control: GitHub

Documentation: OneDrive

Project Meetings: Skype / Email

The tools used in this project were new and it was necessary to understand first hand features and use. Several online resources were referred and LinkedIn Learning tutorials with minor projects were the most helpful and able to move forward to implement them on Cavok App. There are still room for improvement and tests can be further extended by trying Continuous Integration as well as other handy Robot Framework libraries like API and Databse libraries.

# 4. PROJECT RESULTS

Intended results were achieved in this project by successfully applying Robot Framework on a web application. Implementation of keyword driven automated tests of a section of the web application was the goal of this project and it was done using page object pattern with various element locator techniques. This project also provides a platform to work more on the automated tests and continuous integration and delivery of the web application

# 5. SELF ASSESMENT OF PROJECT SUCCESS

* **Estimated completion ratio of the tasks / phase:**

92% completion of tasks per phase

* **Estimated project completion ratio:**

95%

# 6. PERSONAL LESSONS LEARNED

This project was very productive in terms of professional growth by getting first hand experience of actually working on automated testing of application. After practical training as a manual software test engineer, it was important to have continuation and it was certainly upgrade by gaining skills and experience on automated tools to test an application. However, learning was not just limited to technical area, as documentation and understanding the structures of software testing are equally important to succeed in this role in future and was achieved in this project. Communication with tutor and stake holder during the project initiation, planning, implementation and review phases was also key in successfully completing this project which would help while working in a professional environment in future.

# 7. COURSE SELF-ASSESSMENT

* + **Project communication inside the company and to teacher supervisor**

Communication with tutor was made efficiently through in person meeting, Skype video calls and screen sharing, GitHub repository for the code review and OneDrive for up to date documents related to projects.

Self-assessment: 4.7/5

* + **Technical challenge and project achievements vs original goals**

It was a challenging project considering prior knowledge on the tools used but there was keen interest to learn such popular technologies which would help excel my career. This project also gave confidence to continue the challenge in mastering automated testing and start continuous integration as well as other similar automated tools and libraries. However, it is understandable to recognize the time taken for the whole project could have been lesser than it actually is and few other test cases could have been added too.

Self-assessment: 4.3/5

* + **Documentation**

All the relevant documents were submitted to and reviewed by project tutor maintaining regular communication and providing all the links to easily reach the desired file or directories of the project.

Self-assessment: 4.8/5

* + **Team work**

Since it is an individual project, team work could be assessed on the basis of communication and understanding with tutor/stake holder, which is this case is Mr. Lasse Haverinen. There was no problem in understanding stakeholder’s needs and results were delivered during and after the project as planned in the beginning.

Self-assessment: 4.9/5

**Overall self-assessment:**

Expected grade: 4.7/5 ≈ 5/5

APPENDIX 1

**Test Cases**

Cavok App (<https://www.cavokapp.com/>)

**Login**

* User should be able to login with valid credentials.
* User should not be able to login with invalid credentials.
* User should be able to recover password.

**Logbook view**

* User should be navigated to “Flight Log” tab view by default.
* User should be able to invoice all flights.
* User should be able to export log.
* User should be able to switch between “Glider” and “EASA” logbook mode.
* User should be able to save flight log with valid inputs.
* User should not be able to save flight log with invalid inputs.
* User should be able to view saved logs of the flights.
* User should be able to navigate to edit view of a log.
* User should be able to close the edit view of a log.
* User should be able to delete a log.
* User should be able to make changes to the log with valid input data.
* User should not be able to make changes to the log with invalid input data.
* User should be able to navigate to “Your statistics” tab view.
* User should be shown correct statistics.
* User should be able to navigate to “Club Flight Log” tab view.
* User should be able to see correct club flight log data.