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Web-Based Dealer Application Testing Using Silk Test Automatic Testing

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Abstract**—** *Testing with the blackbox method in this study is not as usual, where testing is usually done manually, in this study blackbox testing was carried out using the silktest automatic tester. Tests are carried out on the dealer application in the manufacturing sector, where this application is used every day to assist dealer operations. For now, the testing is done manually by the employee on duty based on a specified schedule. Because there are weaknesses in manual testing, such as not all servers and pool services being tested or employees forget to do the test, in this study an automatic test was made to correct the shortcomings of the current manual test. Tests are carried out based on the test cases created. Record and playback features in silk test are used in test case testing. The results of this study noted that the time required for the silk test to perform 160 test cases was 1 hour 44 minutes 56 seconds with a very good level of accuracy*.

Keywords**—** *Blackbox, Manual Testing, Software Testing, Automated Testing, Silk test, Smoke Testing*.

I. INTRODUCTION

A company generally has a system or application that is created or developed to support its daily operational activities. The dealer application is an application created and developed at a manufacturing company in the automotive sector that functions as an integration of transactional data from unit sales or auto parts, vehicle repair services and payments. This application is required to function properly when used to support the company's daily operational activities.

The manufacturing company conducts testing every day at five in the morning after the recycle pool service activity is run to ensure this application can function properly every day. Testing is done manually by employees on duty based on a predetermined schedule. The problem faced with the manual testing method that is currently being carried out is that many employees on duty are negligent or forget to do the test every morning. The test was also considered less than optimal due to limited staff and time, which made testing only on the login and logout functions and testing was only carried out on one of several application servers that should be tested.

In general, there are two methods that can be used at the testing stage, namely manual testing and automatic testing. Manual testing is a test that is carried out manually by the examiner without using any machine-driven tools. Automated testing can be a code testing technique that exploits a special engine-driven test code tool to run a set of test settings. Fully automated testing relies on pre-scripted tests that run automatically to compare actual results with expected results and generate rigorous inspection reports [5]. Automatic testing has a six-step process in conducting testing. This testing process method is called Automation Testing Life Cycle [3]. There are two techniques in conducting testing, namely static and dynamic. Static technique is an examination of the code or documentation of the application without executing the code. Dynamic techniques are used after the logical part of the application has been built, the modules have been tested, their function is to ensure that the software product works according to business needs [4]. Tests on dynamic techniques have three categories, namely functional testing, non-functional testing and maintenance. Functional testing is a type of test that verifies that each function of a software application operates according to the requirements specification. This test involves the blackbox method and does not pay attention to the application source code [13].

Manual and automated test methods are compared based on test type, process speed, execution and resources. Automated testing is more reliable, programmable, reusable, comprehensive and maintainable, saves money and time, reduces costs, has a wider test coverage and is faster than manual testing [15]. Research [11] provides a broad overview of the testing technique.

This study was conducted to test a web-based dealer application using the Silktest automatic testing tool in overcoming the shortcomings of manual testing that exist in testing dealer applications every morning. The type of testing carried out is functional testing using smoke testing techniques and using the blackbox method.

II. LITERATURE REVIEW

A. *Software Testing*

Software Testing is a method of checking whether the actual software product conforms to the expected requirements and to ensure that the software product is defect-free. It involves executing a software component/system using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, loopholes, or missing requirements that differ from the actual requirements [13].

B. *Blackbox*

Blackbox testing is defined as a testing technique where Application Under Test (AUT) functionality is tested without looking at the internal code structure, implementation details, and knowledge of the software's internal path. This type of testing is completely based on software requirements and specifications. Blackbox testing only focuses on the input and

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output of the software system regardless of the internal knowledge of the software program.

Blackbox can perform any software system testing you want to test. For example, an operating system like Windows, a website like Google, a database like Oracle or even your own custom application. Under Blackbox Testing, you can test this application by focusing only on input and output without knowing the internal code implementation [13].

C. Automated Testing

Automated Testing is a software testing technique performed using specialized automated testing software tools to run a series of test cases. In contrast, Manual Testing is done by humans sitting in front of the computer carefully carrying out the testing steps [5]. Manual and automated test methods are compared based on test type, process speed, execution and resources. Automated testing is more reliable, programmable, reusable, comprehensive and maintainable, saves money and time, reduces costs, has a wider test coverage and is faster than manual testing [15].

Automation testing software can also enter test data into the System Under Test, compare expected and actual results, and generate detailed test reports. Software Testing Automation demands a large investment of money and resources.

D. Silktest

Silktest is a powerful software testing tool for running automated test cases on the front end developed by Sergue Software, Inc. Silktest is specifically designed to perform regression and functionality testing. Silktest also offers test planning, management, live database access and validation, a flexible and robust for-test scripting language, a built-in recovery system for unattended testing and the ability to test across multiple platforms, browsers and technologies [11].

III. Research Method

The Manufacturing Application System has stages as a reference in the preparation and development of the testing system carried out. The following steps can be seen in figure 1.

The initial stage is to make a plan by determining the object of research and testing time. In this study, the object that will be used as research material is a web-based dealer application. This research was started from March 1, 2021 until July 31, 2021. The list of functions available in the dealer application was carried out at the analysis stage. After the list of functions is made, the next step is to select which functions will be tested and which functions will not be tested. Feature selection is based on the smoke testing method where the selected feature represents other features. In making a test design, looking at the many dealer application functions and also this dealer application is located on 4 servers which have 20 application pools on each server, then using the smoke testing method is very sufficient if testing is carried out on 4 servers with 2 The functions tested on each of these servers are the Hit server and application pool functions and the Login/Logout functions. The manual blackbox testing method is also carried out as a reference when performing blackbox on automated testing. The list of functions to be tested can be seen in Table 1.

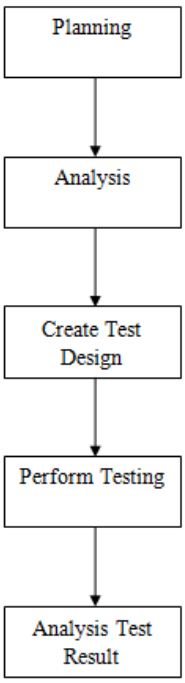

Fig. 1. Research Method
Source: Private Document

TABLE 1. List of Functions to be Tested

No	Function Name	Used For
1	TestHitPool	The test opens a web page directly by entering the server ip and iis pool website on the server
2	Login/Logout Test	Testing the login page where the username column is filled with the registered username and the password column is filled with the registered password

Formal testing is done after creating a test case. This is done using an automated blackbox testing tool, namely silktest. All test cases that have been created will be translated into a programming language and run through the terminal and internet explorer browser. When conducting formal testing, you will get success/failure results as well as the time required from each previously created test case. The results will be analyzed according to the results obtained. This analysis can be used as an evaluation as a recommendation in using automated testing tools in conducting tests on dealer applications every day.

IV. Results and Discussion

There are 2 functions that are used as test cases, the first function is HitPool, in this test HitPool is tested on the dealer application on each server and iis pool. The parameters entered are the server and iis pool used for dealer applications. The second function is Login/Logout, in this test the Login/Logout test is carried out on the dealer application on each server and IIS pool. The parameters entered are the

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registered username and password so that they are expected to be able to login and display the main dashboard page. Table 2 describes the specifications for the operating system, software, hardware and versions of the Silktest and Katalon Studio automated testing tools used.

TABLE 2. Table of Device Specifications Used

Operation System	Windows 10 Pro
CPU	AMD A10, 4 Cores
Memory	8 GB RAM (64-bit)
Hard Drive	78 GB of free disk space
Browser	IE 11
Silktest Version	18.5

Steps in installing and configuring silktest:

1. Go to the microfocus.com webpage
2. Log in to a microfocus account or create a new one if you don't have an account yet.
3. Select silktest in the product section. Can be seen in figure 2.

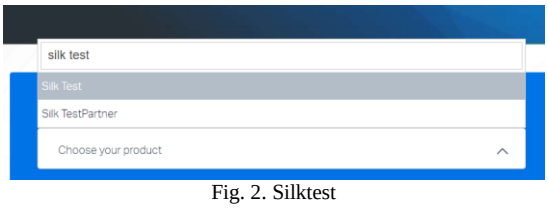

Fig. 2. Silktest

Source: Silktest Document

4. Send a request to get the silktest auto test tool download link.
5. Once downloaded, extract the file in the .zip form, then run the silktest application so that it can be installed on the device we are using. Can be seen in figure 3.

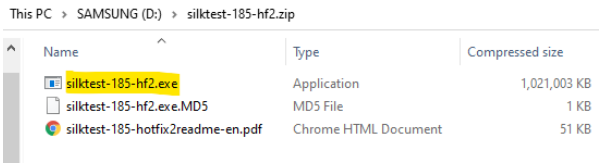

Fig. 3. Silktest.exe

Source : Private Document

6. Once installed, the application can be seen in the start menu. Can be seen in figure 4.

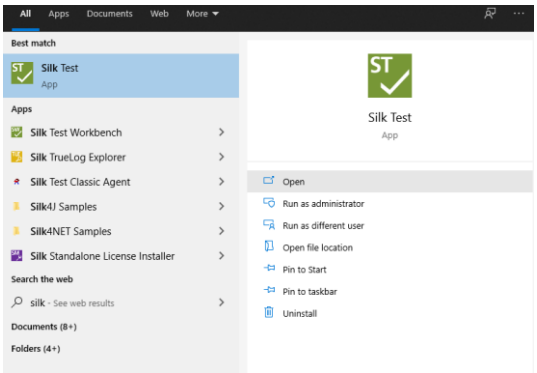

Fig. 4. *Silktest* Application

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Test case creation is done using the record and playback feature on Silktest by clicking New on Visual Test to create a test case, then choose *record* feature. Data can be seen in figure 5.

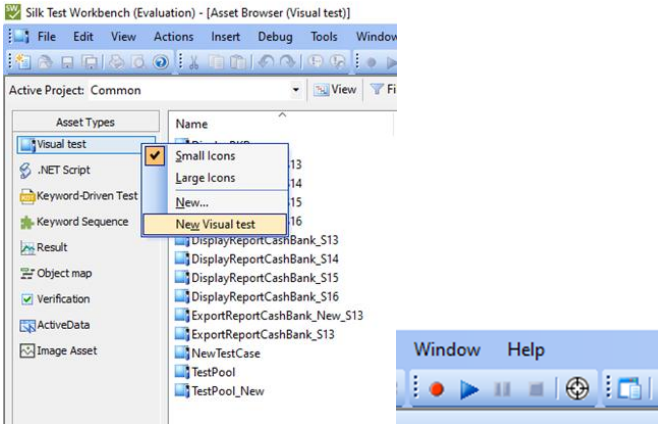

Fig. 5. Creating Test Cases

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The record results will form a test case which can be seen in figure 6.

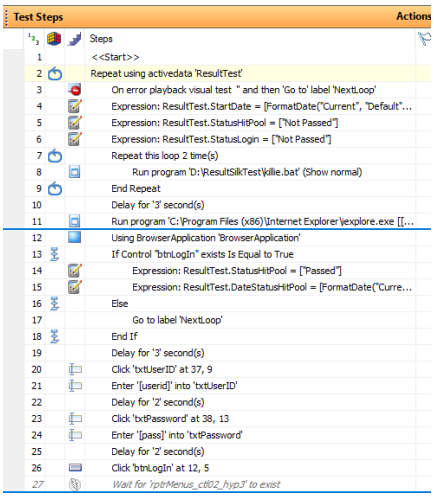

Fig. 6. Record on Visual Test

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Creating a report is the same as making a Visual test, select New in ActiveData, write a name and select the report file to be placed. Can be seen in figure 7.

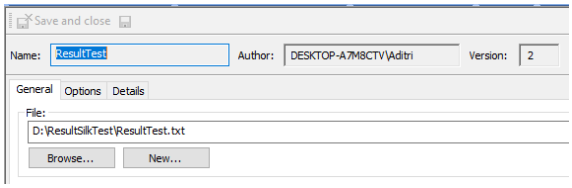

Fig. 7. ActiveData

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Based on the results of the execution of the test cases, the dealer application takes 1 hour 44 minutes 56 seconds with a

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total steps run of 2963. The accuracy of the silktest in performing actions on existing objects is very accurate, judging from the test cases executed with the status of "Passed". Execution report can be seen in figure 8.

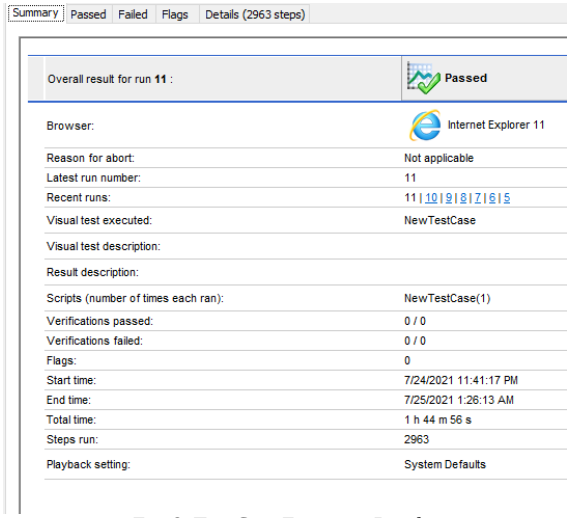

Fig. 8. Test Case Execution Results
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V. CONCLUSION

The results of trials conducted on 160 (one hundred and sixty) test cases, it was noted that the time required for the silktest to complete all test cases was 1 hour 44 minutes 56 seconds with a very good level of accuracy. Coding skills and abilities are not required in silktest automated testing. Silktest has enough features and complete documentation, and has full support from the developer team.

Overall the results of the research carried out, the Silktest automatic testing tool is very suitable and can overcome the existing shortcomings to perform automated testing on dealer applications every morning.

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