# Digital T-Level: Software Testing Mock Assessment – Part 1

Using the software product found on the OneNote page for the Software Testing unit, carry out the following tasks:

* Select testing methodologies to use on the software product.
* Create a comprehensive and effective test plan containing appropriate test cases which are based on the product’s user requirements. Your test plan should cover most of the aspects of the product from using the product and performing simple tasks to fully detailed processes in the product, finding potential faults and predicting errors.
* Perform the tests on the software product systematically, using the test plan you created and accurately recording the results.

You should present your testing evidence as a portfolio which is easy to read and understand by a third party. It should be logically structured and use technical engineering and software engineering terminology.

**Structure:**

* **Testing Description**
* **Test Plan**
* **Test Logs**
* **Change Requests**
* **Summary and Evaluation**

**Testing Description**

In this testing document I have carried out tests against the requirements specification. This includes both functional and non-functional tests. I felt like 14 was a relevant number of tests to carry out as that is the number of requirements and due to exams next week my primary focus on those has taken priority over this….

In the test plans I have added the tests right from the requirements and after a brief look over the code, I made assumptions on the expected outcome of each test case/reference. The majority passed, and the expected outcome was correct.

In the test logs I went into depth on the outcome of each test with photographic evidence of each test to back up my outcome PASS/FAIL/SKIPPED. Like I said above the majority of test passed however there were a few that failed and one that was skipped. All for reasons you will find later in the document.

After the Test Logs I have included a couple of change requests for the tests that didn’t have a positive outcome and needed correcting. The change requests go into a greater level of detail and offer possible changes to rectify the issue and make the test pass once implemented. Some general Graphical evidence of the testing documents:

Chart, bar chart

Description automatically generatedChart, pie chart

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The Graphs above both show the number of test cases that either passed, skipped or failed once carried out.

At the end of the document, I have included change requests and a detailed evaluation.

**Testing Plans**

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 1 | Functional test | To test if the application takes in all the register data and records it in the Database (Learner) | On click of the submit button the data is posted to the database and the user is redirected to the login page. | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 2 | Functional test | To test if the application takes in all the register data and records it in the Database (Learner) | On click of the submit button the data is posted to the database and the user is redirected to the login page. | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 3 | Functional test | To test if program can login a user that has signed up (Learner) | Login details compared to ones in the database already. | Form Data: LearnerUsername, LearnerPassword. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 4 | Functional test | To test if program can login a user that has signed up (Learner). | Login details should be compared to the ones in the database already and login if details correct. | Form Data: LearnerUsername, LearnerPassword. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 5 | Functional Test | To test what the application does when incorrect data is submitted in the login page (learner + tutor) | IT should navigate to an error page informing the user of what they need to do. | Form Data: LearnerUsername, LearnerPassword. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 6 | Functional test | To test if the session is around on all of the pages once logged in. | I have included session start () at the top of my document on all relevant pages after login so it should be there. | Check all pages for a visible session and its relevant data (f12 and check network cookie/session area). |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 7 | Functional test | To test if the correct data is displayed for the user logged in (Learner). | The session started should provide enough information for the queries I have written to draw the correct data out for each user. | Form Data: LearnerUsername, LearnerPassword. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 8 | Functional Test | To test if the correct data is displayed for the user logged in (Tutor). | The session started should provide enough information for the queries I have written to draw the correct data out for each user. | Form Data: LearnerUsername, LearnerPassword. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 9 | Functional Test | Learner Courses are different depending on the class value. (Checking the logical operation). | IF a learner class is 1 then they see A1 content, IF a learner class is 2 they see A2 Content, IF a learner class is 3 they can see A3. | Learner Class and the if statement in the maths, English and science redirect pages. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 10 | Functional Test | Test if the progress bar values on the tutor view of students are drawing in the correct values. | The progress bars will use values from the database and will represent 1 student each. They are in a table, so the student and progress bar are in the same row. | Quiz Result |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 11 | Functional Test | Test incorrect or missing data in the register forms. | Should redirect to an error page. | Email – ed.com (no@)  Age – eeeee  Etc. |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 12 | Usability – non functional | An easy-to-use program that is fast and efficient. | Should be useable and very quick. /Responsive as it is not a large program that uses lots of resources. | N/A |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 13 | Non-Functional | The program should have a professional looking interface that follows good user interface and experience principles. | The interface is greyscale which should be readable for most users and the user interface should keep a consistent format across all the pages. Templating will help with this. | N/A |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 14 | Functional | To test if the application can be used the same on mobile devices and smaller devices than the average 24-inch computer screen. | The bootstrap should automatically size adjust depending on the size. Not entirely sure of what every page will look like. | N/A |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 15 | Functional | Test if the applications templates work and extend the different relevant sections. | The templates should be filled with header footer and content sections.  Non views can generate html and the echo just prints out the webpages in vbiews. | @extends(‘app’)  @section(‘content’)  @endsection |

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| **Test Ref.** | **Type of Test** | **Purpose of Test** | **Expected Outcome** | **Test Data** |
| 15 | Functional | Test if the views can be run / found. | The templates should be filled with header footer and content sections. | @extends(‘app’)  @section(‘content’)  @endsection |

**Testing Logs**

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| --- | --- | --- | --- | --- | --- |
| **Test Reference:** | 1 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the application takes in all the register data and records it in the Database (Learner) | | | | |
| **Test Type:** | Functional TEST | | | | |
| **Test Data:** | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass | | | | |
| **Expected Outcome:** | On click of the submit button the data is posted to the database and the user is redirected to the login page. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 2 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the application takes in all the register data and records it in the Database (Tutor) | | | | |
| **Test Type:** | Functional test | | | | |
| **Test Data:** | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass | | | | |
| **Expected Outcome:** | On click of the submit button the data is posted to the database and the user is redirected to the login page. | | | | |
| **Actual Outcome:** | Runs incorrectly and tells me it’s an ‘invalid selection’. | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 3 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if program can login a user that has signed up (Learner) | | | | |
| **Test Type:** | Functional test | | | | |
| **Test Data:** | Form Data: LearnerUsername, LearnerPassword. | | | | |
| **Expected Outcome:** | Login details compared to ones in the database already and the user is logged in | | | | |
| **Actual Outcome:** | Works correctly and outputs members | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 4 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if program can login a user that has signed up (Tutor). | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | Form Data: LearnerUsername, LearnerPassword. | | | | |
| **Expected Outcome:** | Login details should be compared to the ones in the database already and login if details correct. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 5 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test what the application does when incorrect data is submitted in the login page (learner + tutor) | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | Form Data: LearnerUsername, LearnerPassword | | | | |
| **Expected Outcome:** | IT should navigate to an error page informing the user of what they need to do. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
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| **Test Reference:** | 6 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the session is around on all of the pages once logged in. | | | | |
| **Test Type:** | Functional – White Box testing | | | | |
| **Test Data:** | Check all pages for a visible session and its relevant data (f12 and check network cookie/session area). | | | | |
| **Expected Outcome:** | I have included session start () at the top of my document on all relevant pages after login so it should be there. | | | | |
| **Actual Outcome:** | The Session is available over all relevant webpages once logged in. This will work wherever Session\_start is, up until the session is ended/destroyed. | | | | |
| **Pass/Fail/Skipped:** | PASS | | | | |
| **Comments and/or**  **Recommendations:** | N/A | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 7 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the correct data is displayed for the user logged in (Learner). | | | | |
| **Test Type:** | Functional – Whitebox | | | | |
| **Test Data:** | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass | | | | |
| **Expected Outcome:** | The session started should provide enough information for the queries I have written to draw the correct data out for each user. | | | | |
| **Actual Outcome:** | The correct data for the learner view comes out of the database. I have included an image of the database data and the front end view of the process for for the user. | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 8 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the correct data is displayed for the user logged in (Tutor). | | | | |
| **Test Type:** | Functional - WhiteBox | | | | |
| **Test Data:** | Form Data: LearnerFullname, LearnerDateOfBirth, LearnerGender, LearnerEmail, LearnerPhoneNumber, LearnerUsername, LearnerPassword, LearnerClass | | | | |
| **Expected Outcome:** | The session started should provide enough information for the queries I have written to draw the correct data out for each user. Should display all data listed correctly for the user. | | | | |
| **Actual Outcome:** | It does as expected - correct data is being drawn out of the database. | | | | |
| **Pass/Fail/Skipped:** | PASS | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 9 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | Learner Courses are shown different content depending on the class value. (Checking the logical operation). | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | Learner Class and the if statement in the maths, English and science redirect pages. | | | | |
| **Expected Outcome:** | IF a learner class is 1 then they see A1 content, IF a learner class is 2, they see A2 Content, IF a learner class is 3 they can see A3. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 10 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | Test if the progress bar values on the tutor view of students are drawing in the correct values. | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | Quiz Result | | | | |
| **Expected Outcome:** | The progress bars will use values from the database and will represent 1 student each. They are in a table, so the student and progress bar are in the same row. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 11 | **Name of Tester:** | Ed | **Date of Test:** | 02/02/2022 |
| **Purpose of Test:** | Test incorrect or missing data in the register forms. | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | Email – ed.com (no@)  Age – eeeee | | | | |
| **Expected Outcome:** | Should redirect to an error page. | | | | |
| **Actual Outcome:** | Works correctly, outputs a relevant message and the program does not crash etc. | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 12 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | An easy-to-use program that is fast and efficient. | | | | |
| **Test Type:** | Usability, non functional | | | | |
| **Test Data:** | N/A | | | | |
| **Expected Outcome:** | Should be useable and very quick. /Responsive as it is not a large program that uses lots of resources. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 13 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | The program should have a professional looking interface that follows good user interface and experience principles. | | | | |
| **Test Type:** | Non functional | | | | |
| **Test Data:** | N/A | | | | |
| **Expected Outcome:** | The interface is greyscale which should be readable for most users and the user interface should keep a consistent format across all the pages. Templating will help with this. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 14 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | To test if the application can be used the same on mobile devices and smaller devices than the average 24-inch computer screen. | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | N/A | | | | |
| **Expected Outcome:** | The bootstrap should automatically size adjust depending on the size. Not entirely sure of what every page will look like. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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| **Test Reference:** | 15 | **Name of Tester:** | Ed | **Date of Test:** | 29/03/2022 |
| **Purpose of Test:** | Test if the applications templates work and extend the different relevant sections. | | | | |
| **Test Type:** | Functional | | | | |
| **Test Data:** | @extends(‘app’)  @section(‘content’)  @endsection | | | | |
| **Expected Outcome:** | The templates should be filled with header footer and content sections.  Non views can generate html and the echo just prints out the webpages in views. | | | | |
| **Actual Outcome:** |  | | | | |
| **Pass/Fail/Skipped:** |  | | | | |
| **Comments and/or**  **Recommendations:** |  | | | | |
| **Evidence:** | | | | | |
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**Change Requests**

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| **Project title:** | Mark Testing Documents |
| **Change request ID:** | 1 |
| **Date of request:** | 04/02/2022 |
| **Requested by:** | Ed Christie |
| **Contact email:** | Ec323198@truro-penwith.ac.uk |
| **Priority**  **(Low, High, Critical):** | High |
| **Outline of problem:** | |
| Test Reference 9 - The name of the data outputted is incorrect, however the data outputted via the option the user inputted is correct. This can be misleading for any user interacting with the application and needs to be corrected | |
| **Reason for change:** | |
| The data could be misinterpreted – its misleading. | |

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| **Project title:** | Mark Testing Documents |
| **Change request ID:** | 2 |
| **Date of request:** | 04/02/2022 |
| **Requested by:** | Ed Christie |
| **Contact email:** | Ec323198@truro-penwith.ac.uk |
| **Priority**  **(Low, High, Critical):** | Very High |
| **Outline of problem:** | |
| Certain functionalities need to be added in order to be tested otherwise it is a straight up failure. All applications including this one need to have a basic ‘fully functional’ version that can be tested otherwise there is no point testing a half-completed application. | |
| **Reason for change:** | |
| As Above. | |

Learner Quizzes and progress.

I had planned to make a quiz at the end of each resource/content piece for the learners however I have run out of time due to fixing and figuring out other programming errors. I have developed along with research a way that results are drawn out of the database and shown in a progress bar in a table. This is a snippet of an example – It is missing the tutor session and bootstrap template as I was only trying to show you that I had tried to make something that supported and recorded student progress. The code and images for reference is shown below.

Graphical user interface, application

Description automatically generatedGraphical user interface, text, application

Description automatically generated

Graphical user interface

Description automatically generated

The Query.

Text

Description automatically generated

This Query joins 2 tables together the registered learners and the quiz results by the learner’s class and learner ID. The table it makes is ordered by the learner’s name alphabetically. As you can see an example of the learner id that was joined - 2 quizzes with ids 3 and 4 both appearing for science with 67% and 89% have the same learner ID of 3 so leaner 3 did two quizzes. And the learners 1 and 2 only did 1 quiz each.

So, this code works, I just need to add a quiz system – like the register system – that takes data and posts them to the database. Then the results can be requested and viewed by both learner and tutor.

**Evaluation**

Fitness-for-purpose of the program

The application is not fit for purpose due to it not meeting all required requirements on the specification, also when including the fact that the application did not pass all tests which were based off the requirements specification. Certain aspects of the program were not even coded/implemented, which shows that it needs some more development time to get the entire application working at a basic level with all options functional. At that point it would be tested and should pass the tests that failed for me when I tested.

Recommendations with justification

Some things I picked up on were not major fails or an easy pass. The application either worked or it did not. Some could be improved upon.

Some examples:

* Test Reference 10 – functionality needs to be added otherwise there is no point submitting it for testing as it will just fail - there needs to be some basic functionality.
* Test Reference 9 – The name of the data outputted is incorrect, however the data outputted via the option the user inputted is correct. This can be misleading for any user interacting with the application and needs to be corrected.

Change Request evaluation

I documented 2 change requests which were based failed and passed tests – just with some pressing issues to why they need change and improvement. I have written in a straightforward way that would be acceptable to external developers and not just myself.

The issues were things like misleading data and functionality not being included.

Overall testing evaluation

I think I tested everything at an acceptable level and did my best. However, if I had no exam pressure, I would most definitely have thought up and produced some more tests and gone into more detail in certain parts. However, I did test the main thing which was the requirements specification. This as a bare minimum either makes an application fit for purpose or not. This testing phase concluded that the application overall is not fit for purpose, and requires more attention in order to pass and become fit for purpose.