Software Development - 3K04

Assignment 3 - DCM Testing

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1 Introduction

Testing is performed to check the completeness of code based on a specific list of requirements or specifications. The overall goal is not to fix every single bug in the program but to find situation that could negatively affect the program. Testing helps finds defects created by the programmer during development, gain confidence in and provide information about the quality of the program. Testing and verification can also lead to the ability to maintain code and find potential problematic error before they become harmful. The expected values of the output should come from your requirements.

The newest features of the DCM are tested to test for robustness and correctness. Previous testing of features that were not changed were briefly tested in terms of integration and passed. These previous test cases can be seen in previous documentations.

2 DCM Testing

2.1 DCM Login

A series of logins are tested to confirm that only known accounts can be used to login.

Test Case	Expected Output	Actual Output	Result
Known user name and password	User granted access to control interface	User granted access to control interface	Pass
Unknown user name and password	User not granted access to control interface, warning appears	User not granted access to control interface, warning appears	Pass
User makes a new account	User granted access to control interface using freshly made credentials	User granted access to control interface using freshly made credentials	Pass
User makes a new account that uses an in use account name	Warning, no changes made	Warning, no changes made	Pass
User makes a new account with invalid characters	Warning, no changes made	Warning, no changes made	Pass

2.1.1 Conclusion

DCM login interface works as expected.

2.2 DCM Parameter Check

The user's input is checked to be valid prior to sending. To reduce the length of this section, the cases are written here and applied to each parameter (upper rate, lower rate, atrium amplitude, etc)

Test Case	Expected Output	Actual Output	Result
Value below acceptable range	Warning Comes up, no changes saved	Warning Comes up, changes not sent or saved	Pass
Value above acceptable range	Warning Comes up, no changes saved	Warning Comes up, changes not sent or saved	Pass
Value in acceptable range	Parameters saved and transmitted	Parameters saved and transmitted	Pass
Value in acceptable range, no pacemaker connected	Parameters saved and not transmitted	Parameters saved and not transmitted	Pass

2.2.1 Conclusion

DCM successfully filters input to standards applied.

2.3 DCM Electrogram

The DCM egram is enabled when the pacemaker is functioning and the results are explored. Unfortunately due to a serial issue, these results almost entirely fail.

Test Case	Expected Output	Actual Output	Result
Egram enabled, Pacemaker connected	Serial data of selected chambers displayed	Serial data of selected chambers displayed	pass
Egram enabled, No Pacemaker connected	Previous graph is displayed (no changes)	Previous graph is displayed (no changes)	pass
Egram with no chambers selected	Previous graph is displayed (no changes)	Previous graph is displayed (no changes)	pass
Egram with one chamber selected	Only the selected chambers data is displayed on the Egram	Only the selected chambers data is displayed on the Egram, Data is correctly indexed with legend	pass
Sample number out of expected range	An error is displayed	An error is displayed	pass

2.3.1 Conclusion

It is evident that the electrogram does work as expected and the data markers applicable to the bonus are implemented correctly.

3 Conclusion

All features of the DCM appear to be in fully functional order. The bonus objective of implementing data markers for the electrogram has been completed correctly.