# Appendix C

## Test Plan

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| **Test Case ID** | **Test Case Steps Objective** | | **Input data Expected output** | | **Actual Output Status**  **Pass/Fail** | |
| 001 | Display menu and have interactable options to select | Launch application and input keys 1-5 to check that correct outputs are displayed | The keys 1-5 | Output text from controller.java | Output text from controller.java | Pass |
| 002 | Load data from ClassTestData.txt file | Set up LoadFromFile() method in bstDAOImpl.java and print a message to the user when successful. | The 1 key | Success message being printed to user | Success message was printed | Pass |
| 003 | Display data taken from ClassTestData.txt file | Set up the DisplayBST() method in aView.java as well as the StudentMarks.java getters and setters. | The 1 key | The data taken from ClassTestData.txt | Correct data was printed but lacked module marks. | Pass |
| 004 | Create function for calculating module mark from three provided marks. | Use the provided equation to create the CalculateModuleMark() function and setup a quick test in controller that prints an average for the first student. | The 2 key | The correct value for module mark being printed to the user. | Correct module mark (Bobby Law, 69) was printed. | Pass |
| 005 | Print module marks alongside rest of data. | Update the DisplayBST() method to include the module marks. | The 1 key | The module marks would be printed at the far right of the screen. | The module marks were printed for each student, spacing needed slight adjustment. | Pass |
| 006 | Print data for each student in ascending order of the module marks. | Update the DisplayBST() method to utilise the DisplayBSTItemAsc() method. | The 1 key | The student data would be printed in order of the module marks. | The data was printed out of order. | Fail |
| 007 | Print data for each student in ascending order of the module marks | Update Sorts.java to include methods of ordering the data and then implement these methods in DisplayBSTItemAsc(). | The 1 key | The student data would be printed in order of the module marks. | The data was printed out of order. | Fail |
| 008 | Print data for each student in ascending order of the module marks | Move the implementation of the sorts method to the LoadFromFile() method. | The 1 key | The student data would be printed in order of the module marks. | The data was printed in ascending order of the module marks. | Pass |
| 009 | Print data for each of the students in descending order of the module marks | Update the DisplayBST() method to utilise the DisplayBSTItemDesc() method. | The 2 key | The student data would be printed in descending order | The data was printed in descending order | Pass |
| 010 | Search the data by the module mark and print the correct student’s data | Create the FindData() method and create user input in the controller script to search for a specific mark (87). | The 3 key and “87” | Bartosz’s student data would be printed as he has a module mark of 87. | Nothing was printed | Fail |
| 011 | Search the data by the module mark and print the correct student’s data | Alter the controller script to use “Integer.parseInt()” when reading the user input to convert the input from a string to an int. | The 3 key and “87” | Bartosz’s student data would be printed as he has a module mark of 87. | Bartosz’s data was successfully printed | Pass |
| 012 | Display the student’ data in the form of a bar chart. | Use a string repeater function to convert the student’s marks into a string of “\*” characters. Create the displayAsChart() method and use this to show each student’s marks as bars. | The 4 key | The student’s data would be display as an ascending bar chart. | The first student’s data was printed as a bar and no others. | Fail |
| 013 | Display the student’ data in the form of a bar chart. | Change the displayStudentScoreInChart () function to be more similar to the displayBSTItemAsc() function and implement this in displayAsChart(). | The 4 key | The student’s data would be display as an ascending bar chart. | All of the students scores were displayed in bar form. | Pass |
| 014 | Display chart axes and x–axis numbers. | Add system.out.println() functions to displayAsChart() to add an x-axis and axis numbers. | The 4 key | The bar chart would be displayed with axes and numbers. | The chart was printed in the correct format | Pass |

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