# Appendix B

## Test Plan

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| **Test Case ID** | **Test Case Steps Objective** | | **Input data Expected output** | | **Actual Output Status**  **Pass/Fail** | |
| **1:0** | Test what happens if the user enters a number out of the menu options | Type any positive integer besides the one from 1-8 and press enter | Any positive integer that is not from the range of 1-8 | Error printed on the console that the number is out of range. The user is asked for another input prompt | “Number out of range: please re-enter” is printed on the console and the user is given an option to enter a number once again. | **Pass** |
| **1:1** | Test what happens if the user enters a number that is not an integer or a string | Type any number that is not an integer and press enter | Any float number or sequence of characters | Error printed on the console that the input is not valid. The user is asked for another input prompt | “Not a valid number: please re-enter:” is printed on the console and the user is given an option to enter a number once again | **Pass** |
| **2.0** | Test what happens if during the creation of new StudentMarks, an empty student id is inputted | Type 2 on the menu and and press enter for the student id field | Empty field | Error printed on the console that the field cannot be empty. The process of StudentMarks creation is cancelled and the user is prompted once again for correct student id | “Student id cannot be empty field!” is printed on the console. The user is prompted for input of a new student id. | **Pass** |
| **2.1** | Test what happens if during the creation of new StudentMarks, an empty given name is inputted | Type 2 on the menu and and press enter for the given name field | Empty field | Error printed on the console that the field cannot be empty. The process of StudentMarks creation is cancelled and the user is prompted once again for correct given name | “Given name cannot be empty field!” is printed on the console. The user is prompted for input of a new student id. | **Pass** |
| **2.2** | Test what happens if during the creation of new StudentMarks, an empty last name is inputted | Type 2 on the menu and and press enter for the last name field | Empty field | Error printed on the console that the field cannot be empty. The process of StudentMarks creation is cancelled and the user is prompted once again for correct last name | “Last name cannot be empty field!” is printed on the console. The user is prompted for input of a new student id. | **Pass** |
| **2.3** | Test what happens if during the creation of new StudentMarks, an integer is inputted instead of a String | Type 2 on the menu and and input integer enter for the String fields | Any integer | Error printed on the console that the input format is invalid. The process of StudentMarks creation is cancelled and the user is prompted once again for correct input | No error is given and the applications proceeds as if the input is correct | **Fail** |
| **2.4** | Test what happens if during the creation of new StudentMarks, an symbol is inputted instead of a String | Type 2 on the menu and and input symbol enter for the String fields | Any symbol | Error printed on the console that the input format is invalid. The process of StudentMarks creation is cancelled and the user is prompted once again for correct input | No error is given and the applications proceeds as if the input is correct | **Fail** |
| **3.0** | What happens if the user chooses the “display module marks in ascending order” option | Type 4 on the menu | The character “4” for the option on the menu | The module marks are displayed as a table on the console with all the students’ information in ascending order by the module marks value. | All the information of the students is displayed in a formatted table ordered in ascending order by the module marks value. | **Pass** |
| **3.1** | What happens if the user chooses the “display module marks in descending order” option | Type 5 on the menu | The character “5” for the option on the menu | The module marks are displayed as a table on the console with all the students’ information in descending order by the module marks value. | All the information of the students is displayed in a formatted table ordered in descending order by the module marks value. | **Pass** |
| **3.2** | What happens if the user chooses the “display module marks as a chart view” option | Type 6 on the menu | The character “6” for the option on the menu | The module marks are displayed as a graphic chart on the console with the student id and a corresponding to their module marks value number of “\*” characters to the right. | The student id and module marks value are displayed on the console in the form of the chart. | **Pass** |
| **3.3** | What happens if the user chooses the “display lowest and highest module marks” option | Type 7 on the menu | The character “7” for the option on the menu | The lowest and the highest values of the module marks in the BST are displayed on the console as a table. | All the information of the lowest and the highest module marks value students is displayed in a formatted table. | **Pass** |
| **4.0** | What happens if the user chooses the option for quiting the program | Type 8 on the menu | The character “8” for the quit option on the menu | The program stops | “Thank you for using ToDoApp, have a nice day!” is printed on the console and the program closes | **Pass** |