Test Plan for Assignment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Test Case #** | **Test Case Description (to ensure testing coverage of all code)** | **Predicted Output (meta-data describing actual test case)** | **Actual Output (actual display & feedback/confirmation messages)** |
| 1 | Menu is Displayed in a Loop, until the “exit” option is selected. | A menu consisting of 4 main options is displayed to the user (add, change, remove, display) | Please make a selection:   1. Add a Friend’s Contact Info 2. Change a Friend’s Contact Info 3. Remove a Friend’s Contact Info 4. Display a Friend’s Contact Info 5. All friends? 6. Specific Friend’s First Name:   Specific Friend’s Last Name: |
| 2 | Menu option 1 (Add) is selected, and there is space left in array  Note: Test extreme cases like empty array, & only 1 space left in array | Request friend’s contact information, create friend object, add it to the array, and give feedback that add was successful. Increment the currentSize by 1. | Please enter your friend’s first name:  Enter your friend’s last name:  Enter your friend’s nick name:  Enter your friend’s cell phone number:  Your friend was added successfully to the address book.  Use Debugger to check that object is actually in the correct space in array, at the next available empty slot. Also, verify that currentSize has been incremented by 1. |
| 3 | Menu option 1 (Add) is selected,  and there is NO space left in array | Request friend’s contact information, create friend object, add it to the array, and give feedback that add was successful. | Please enter your friend’s first name:  Enter your friend’s last name:  Enter your friend’s nick name:  Enter your friend’s cell phone number:  Since there is no more room in the address book, your phone book size will automatically be doubled, so you can add your friend’s contact info. |
| 4 | Menu option 2 (Change) is selected, and friend is found in array | Request friend’s first & last name, and look up object in array. Display current values for contact, then ask user for each new value in the friend object. | Please enter your friend’s first name:  Enter your friend’s last name:  Here is your friend’s contact info:  Xxxxxxx yyyyyyyy zzzzzzzz 123-456-7890  Enter new first name: Enter new last name:  Enter new nick name:  Enter new cell phone number:  Your change request was successfully processed. Here is your friend’s NEW contact info:  Xxxxxxx yyyyyyyy zzzzzzzz 123-456-7890 |
| 5 | Menu option 2 (Change) is selected, and friend is NOT found in array | Request friend’s first & last name, and look up object in array. Display message “Friend to be changed was NOT found.” | Please enter your friend’s first  Enter your friend’s last name  Sorry, your friend was not found in your request to change the contact info. |
| 6 | Menu option 3 (Remove) is selected, and friend is found in array | Request friend’s first & last name, and look up object in array. Display current values for contact, then ask user to VERIFY that they wish to delete the Friend.  Display a feedback message that the friend was removed.  Move all objects below the removed friend up to a previous level. Decrement currentSize, and move nulls to array at currentSize. | Please enter your friend’s first name:  Enter your friend’s last name:  Here is your friend’s contact info:  Xxxxxxx yyyyyyyy zzzzzzzz 123-456-7890  Are you sure you you wish to delete your friend’s contact information?  Your friend’s contact information has been deleted.  Debugging reveals all the friend objects have moved up by 1 in the array, replacing the removed object. |
| 7 | Menu option 3 (Remove) is selected, and friend is NOT found in array | Request friend’s first & last name, and look up object in array. Display a message stating “Friend’s Contact Information cannot be removed since the friend is NOT found. | Please enter your friend’s first name:  Enter your friend’s last name:  Your friend’s contact information cannot be deleted because it is NOT found. |
| 8 | Menu option 4 (Display) is selected, and friend is found in array | Ask if user wishes to display 1 friend or ALL friends in address book  If user enters ALL friends option, loop through entire array and display all the objects in the array.  If user enters a single friend, request the specific friend’s first & last name. | Enter a. to display ALL friends in array  Enter b. to display a specific friend in array   1. All friends are displayed 2. Please enter your friend’s first name: Enter your friend’s last name:   Here is your friend’s contact information:  Xxxxxx yyyyyyy zzzzzzzzzzz 123-456-7890 |
| 9 | Menu option 4 (Display) is selected, and friend is NOT found in array | Ask if user wishes to display 1 friend or ALL friends in address book  If user enters ALL friends option, loop through entire array and display all the objects in the array.  If user enters a single friend, request the specific friend’s first & last name. | Enter a. to display ALL friends in array  Enter b. to display a specific friend in array   1. All friends are displayed 2. Please enter your friend’s first name: Enter your friend’s last name:   Friend is NOT found. |
| 10 | Menu option 5 is selected. | Program will now end successfully. Nice message is displayed at the end. | Thank you for running the Best Friend Address Book. Please come again! |
| 11 | Menu option that is NOT 1 – 5 is selected. | Program will display error message about invalid option, & to try again. Outer loop will display the menu again. | Sorry, that is an invalid option. Please enter 1 – 5 and try again. |