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| Test Case ID | Description | Input | Expected Output | Actual Output | Pass/Fail |
|--------------|--------------------------------------|--|--|---|-----------|
| TC1 | Program starts and displays menu | Program execution | Menu options displayed (v/a/d/q) | <pre>Select an operation: v view contacts a add contact d delete contact q quit Enter choice (v/a/d/q):</pre> | Passed |
| TC2 | View contacts when contacts exist | Choice = v | Display list of contacts with ID, name, and number | <pre>Enter choice (v/a/d/q): v ----- view_contacts ----- 1 Miles 001 2 Jones 002</pre> | Passed |
| TC3 | Add a new contact | Choice = a, Name = Rahul, Number = 99999 | Contact added message shown | <pre>Enter choice (v/a/d/q): a ----- add_contact ----- Enter contact name: Smith Enter contact number: 003 Smith - 003 has been added into the contact list</pre> | Passed |
| TC4 | View contacts after adding a contact | Choice = v | Updated contact list displayed | <pre>Enter choice (v/a/d/q): v ----- view_contacts ----- 1 Miles 001 2 Jones 002 3 Smith 003</pre> | Passed |
| TC5 | Delete a contact using valid ID | Choice = d, ID = 1 | Selected contact deleted | <pre>Enter choice (v/a/d/q): d ----- delete_contact ----- 1 Miles 001 2 Jones 002 3 Smith 003 Enter the ID of the contact to delete: 1 Deleting: Miles</pre> | Passed |

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| TC6 | Delete contact with invalid ID | Choice = d, ID = 10 | "Invalid ID!" message | <pre>Enter choice (v/a/d/q): <i>d</i> ----- delete_contact ----- 1 Jones 002 2 Smith 003 Enter the ID of the contact to delete: <i>9999</i> Invalid ID!</pre> | Passed |
| TC7 | Enter invalid menu option | Choice = x | Invalid choice message shown | <pre>Enter choice (v/a/d/q): <i>r</i> ----- Invalid choice ----- Try again...</pre> | Passed |
| TC8 | Quit program | Choice = q | Program exits | <pre>Select an operation: v view contacts a add contact d delete contact q quit Enter choice (v/a/d/q): <i>q</i> Exiting program...</pre> | Passed |
| TC9 | Delete contact using non-numeric ID | Choice = d, ID = abc | Error message and deletion should not occur | <pre>Enter choice (v/a/d/q): <i>d</i> ----- delete_contact ----- 1 Miles 001 2 Jones 002 Enter the ID of the contact to delete: <i>abc</i> Please enter a valid number!</pre> | Failed |
| TC10 | View contacts when contact list is empty | Choice = v after deleting all contacts | "No contacts to display!" message | <pre>Enter choice (v/a/d/q): <i>v</i> ----- view_contacts ----- No contacts to display!</pre> | Failed |

