**CST8130 – Data Structures Assignment 3 – Test Plan**

***Menu processing***

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| *Condition Description* | *Sample* | *Result* |
| Create new list | User enters c or C | Proceeds to ask for name of list |
| Display all lists | User enters p or P | no lists to display – continues to menu processing again |
| Add entry to a list | User enters a or A | Proceeds to ask for name of list |
| Delete entry from a list | User enters d or D | Proceeds to ask for name of list |
| Display a list | User enters l or L | Proceeds to ask for name of list |
| Load from file | User enters f or F | Proceeds to ask for name of file |
| quit | User enters q or Q | Program ends |
| Invalid entry | User enters r, R, 3 | Invalid menu selection message, returns to menu |

***Load from file processing***

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| *Condition Description* | *Sample* | *Result* |
| User enters file that doesn’t exist | C:\lists.txt | Error message – program returns to menu |
| User enters valid file name | C:\emailLists.txt | Program reads from file, then returns to menu ; “Display all” from menu shows lists:  CST8130Class/ ExtendedFamily/ Family/ Friends/ Work |
| Number of lists in file invalid int value | A, | invalid message, returns to menu |
| Number of emails in lists invalid int value | B | invalid message, returns to menu |
| End of data occurs before number of lists | numlists is 4, but there is actually 3 | Invalid message for last list, returns to menu |
| Number of categories in file equal to actual data | numCategories is 4, but there is actually 5 | Ignores last category |
| Number of email addresses doesn’t match int value | This will actually trigger a problem at an int read | Invalid message, returns to menu at point of error |

***Create new list processing***

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| *Condition Description* | *Sample* | *Result* |
| User prompted to enter name of list | Family2 | Inserted in order - CST8130Class/ ExtendedFamily/ Family/ Family2/ Friends/ Work |
| User enters invalid email address | a@b a.b a@.c | Error message, prompt to reenter address |
| User adds valid email address | [a@b.com](mailto:a@b.com) ab@c.de | Added to list |
| User enters ‘y’ to add more | y, Y | Prompts to add more email addresses |
| User enters ‘n’ to stop | N, n, q | Return to menu |
| Sorting – name of list is at beginning | Family | Select ‘p’ –  Family…addresses here  Family 2…addresses here |
| Sorting – name of list is at end | Family3 | Select ‘p’ –  Family…addresses here  Family 2…addresses here  Family 3 … addresses here |
| Sorting – name of list is in middle | Family1 | Select ‘p’ –  Family…addresses here  Family 1….addresses here  Family 2…addresses here  Family 3 … addresses here |

***Display all lists***

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| *Condition Description* | *Sample* | *Result* |
| Empty list | Nothing displays | Return to menu processing |
| Showing lists – name and email addresses are correct |  | CST8130Class/ ExtendedFamily/ Family/ Friends/ Work |

***Add entry to list***

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| *Condition Description* | *Sample* | *Result* |
| User enters name of list that doesn’t exist | abc | No list found message, return to menu |
| User enters name of list that exists, then enters valid email address | [a@b.com](mailto:a@b.com) ab@c.de | Address is added to list (verify via display) |
| User enters name of list that exists, then enters valid email address | a@b a.b a@.c | Error message, Prompt to add valid address |

***Delete entry to list***

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| --- | --- | --- |
| *Condition Description* | *Sample* | *Result* |
| User enters name of list that doesn’t exist | abc | No list found message, return to menu |
| User enters name of list that exists, then enters valid index to delete | 0 | Address is deleted from list (verify via display) |
| User enters name of list that exists, then enters invalid index to delete | 43 | Error message, prompt to indicate valid index |

***Display a list***

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| *Condition Description* | *Sample* | *Result* |
| User enters name of list that doesn’t exist | abc | No list found message, return to menu |
| User enters name of list that exists, | Family | List is displayed |