**CST8130 – Data Structures Assignment 2 – Test Plan**

File Processing

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| *Condition Description* | *Sample* | *Result* |
| User enters file that doesn’t exist | C:\packet | Error message – program ends |
| User enters valid file name | C:\TrafficPackets.txt | Program reads from file |
| End of file read |  | Program displays routing table contents and then ends |

Router Initialization processing

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| *Condition Description* | *Sample* | *Result* |
| User enters valid maximum entries (greater than 0) | 10 | Routing Table array is created |
| User enters invalid maximum entries | 1. -10. A | Message that size is invalid – reenter |
| User enters valid max entries, not enough memory for allocation | 10 | Error message displayed – program stops running |

Packet Processing

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| *Condition Description* | *Sample* | *Result* |
| Packet code ‘p’ – destination network not already in table | Destination: 192.168.1.1/24  Port: e0 | Add 192.168.1.0/24 into table with message saying this was added |
| Packet code ‘p’ – destination network already in table | Destination: 192.168.1.6/24 | Message that entry already exists in routing table |
| Packet code ‘p’ – destination network already in table; table full | Destination Destination: 192.168.1.6/24: 192.168.1.2/24 | Keeps adding data to the table because of array list methods |
| Packet code ‘d’ – destination network not found in table | Destination: 192.168.4.1/24 | Dropping packet message displayed |
| Packet code ‘d’ – destination found in table | Destination: 192.168.1.6/24  Data: 12344 | Display forwarding message (12344) out appropriate port (e0 in this case) |
| Invalid data read | Destination: 192.168.1.6/33  Source: 400.168.1.6/24 | Invalid data message…(program stops running) |