# Test Description

**Test Name or ID**: Acceptance testing of the program

**Test Type**: Acceptance

**Description**: Acceptance tests validate whether the program functions correctly according to client’s business requirements. The expected behaviors for each of the anticipated real world inputs are defined in the test scenarios section. Only cases that might be encountered in everyday business scenarios are tested, as it is expected that other forms of testing have already eliminated unexpected program behaviors.

**Setup:** Run Main.c with the inputs specified.

**Test Function**: Testing applies to the main program (main.c) and will test all functions written.

**Test Scenarios:**

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| Test # | Description | Test Data | Expected Result |
| Test 01 | Over-weight:  The user attempts to ship a box with a weight over the maximum limit | Shipment Weight: 1001  Shipment Box Size: 1 Shipment Destination: 12L | The program should display an error message “invalid weight (must be 1-1000 Kg.)”. No truck should be assigned. |
| Test 02 | Incorrect box size: the user inputs a box size that’s not exactly one of the acceptable values | Shipment Weight: 100 Shipment Box Size: 2 Shipment Destination: 12L | The program should display an error message “invalid size”. No truck should be assigned. |
| Test 03 | Invalid Shipment Destination:  The user enters a grid address outside of the map’s bounds. | Shipment Weight: 100 Shipment Box Size: 1 Shipment Destination: 28x | The program should display an error message “invalid destination” |
| Test 04 | Validate input and the program, truck assigned normally and test is no diversion | Shipment Weight: 20 Shipment Box Size: 0.5 Shipment Destination: 12L | The program should display the message “Ship on BLUE LINE, no diversion” |
| Test 05 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 200 Shipment Box Size: 1 Shipment Destination: 8Y | The program should display the message “Ship on GREEN LINE, divert: 3T, 4U, 5V, 6W, 7X, 7Y, 8Y” |
| Test 06 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 500 Shipment Box Size: 1 Shipment Destination: 8Y | The program should display the message “Ship on GREEN LINE, divert: 3T, 4U, 5V, 6W, 7X, 7Y, 8Y” |
| Test 07 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 500 Shipment Box Size: 1 Shipment Destination: 8Y | The program should display the message “Ship on BLUE LINE, divert: 18P, 17Q, 16R, 15R, 14R, 15R, 14R, 13R, 12R, 11S, 10T, 9U, 8V, 7W, 7X, 7Y, 8Y” |
| Test 08 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 500 Shipment Box Size: 1 Shipment Destination: 25B | The program should display the message “Ship on YELLOW LINE, divert: 20B, 21B, 22A, 23A, 24A, 25A, 25B” |
| Test 09 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 200 Shipment Box Size: 1 Shipment Destination: 22Q | The program should display the message “Ship on YELLOW LINE, divert: 20P, 21Q, 22Q” |
| Test 10 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 300 Shipment Box Size: 1 Shipment Destination: 19N | The program should display the message “Ship on BLUE LINE, no diversion” |
| Test 11 | Validate input and the program, truck assigned normally and test is no diversion | Shipment Weight: 300 Shipment Box Size: 1 Shipment Destination: 19N | The program should display the message “Ship on YELLOW LINE, no diversion” |
| Test 12 | Validate input and the program, truck assigned normally and test is diversion | Shipment Weight: 300 Shipment Box Size: 1 Shipment Destination: 14U | The program should display the message “Ship on GREEN LINE, divert: 10T, 11U, 12V, 13V, 14V, 14U” |
| Test 13 | Over-capacity:  The user enters a shipment that exceeds the capacity of all available trucks. | Shipment Weight: 300 Shipment Box Size: 1 Shipment Destination: 14U | The program should display the message “Ships tomorrow!” |
| Test 14 | Exit code input | Shipment Weight: 0 Shipment Box Size: 0 Shipment Destination: x | The program should display the message “Thanks for shipping with Seneca!” |