# 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 | Valid Shipment data:  User inputs valid data; and the program, truck assigned normally | Shipment Weight: 200 Shipment Box Size: 1 Shipment Destination: 1A | The program should display that the shipment has been accepted, as well the route info. |
| Test 02 | 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: 20H | The program should display an error message. No truck should be assigned. |
| Test 03 | Exit code input | Shipment Weight: 0 Shipment Box Size: 0 Shipment Destination: X | The program should display "Stopping Now" and exit. |
| Test 04 | Over-capacity:  The user enters a shipment that exceeds the capacity of all available trucks. | First, add valid shipments to each truck until each truck has at least 1kg of weight. Then attempt to enter  Shipment Weight: 999 Shipment Box Size: 1 Shipment Destination: 1A | The program should display the message “Ships Tomorrow”. |
| Test 05 | Diversion Required: The user enters a shipment destination that requires a diversion from the truck's normal route. | Shipment Weight: 1 Shipment Box Size: 1 Shipment Destination: 2C | The program should tell the user that the shipment is accepted, and print the route info including the diversion. |
| Test 06 | Under-weight: the user inputs a shipping weight that’s below the minimum limit | Shipment Weight: 0 Shipment Box Size: 1 Shipment Destination: 3D | The program should display an error message. No truck should be assigned. |
| Test 07 | Incorrect box size: the user inputs a box size that’s not exactly one of the acceptable values | Shipment Weight: 1 Shipment Box Size: 0.9 Shipment Destination: 4F | The program should display an error message that the box size is incorrect. No truck should be assigned. |
| Test 08 | Invalid Shipment Destination:  The user enters a grid address outside of the map’s bounds. | Shipment Weight: 1 Shipment Box Size: 1 Shipment Destination: 30Z | The program should display an error message that the destination is invalid. |