# Test Description Function 1 - displayHeader()

**Test Name or ID**:

**Test Type**: Black box

**Description**: Displays the header of the delivery menu

**Setup:** N/A

**Test Function**: displayHeader()

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | The output should match the expected output of the header | N/A | The header is displayed correctly according to the expected output. | The header is displayed correctly as expected. | Pass |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 2 - displayDeliveryMenu()

**Test Name or ID**:

**Test Type**: Black box

**Description**: Displays the complete delivery menu and calls required function to get, validate and implement user input

**Setup:** N/A

**Test Function**: displayDeliveryMenu()

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | The output should match the expected output of the Menu | N/A | The complete delivery menu is displayed correctly according to the expected output. | The complete delivery menu is displayed correctly as expected. | Pass |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 3 - checkWeight(double weight)

**Test Name or ID**:

**Test Type**: Black box

**Description**: Checks if the weight input is valid or not

**Setup:** N/A

**Test Function**: checkWeight(double weight)

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly validates a valid weight value. | 10.5 | The function should return a value indicating that the weight is valid. | The function returns a value indicating that the weight is valid. | Pass |
| 2 | Verify if the function correctly identifies when an invalid weight value. | -5.2 | The function should return a value indicating that the weight is invalid. | The function returns a value indicating that the weight is invalid. | Fail |
| 3 | Verify if the function correctly handles very large weight values. | 3165461326546 | The function should handle and validate the large weight value correctly. | The function handles and validates the large weight value correctly. | Fail |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 4 - checkBox(double boxSize)

**Test Name or ID**:

**Test Type**: Black box

**Description**: Checks if the box volume input is valid or not

**Setup:** N/A

**Test Function**: checkBox(double boxSize)

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly validates a valid box volume value. | 100.0 | The function should return a value indicating that the box volume is valid. | The function returns a value indicating that the box volume is valid. | Pass |
| 2 | Verify if the function correctly identifies an invalid box volume value. | -10.5 | The function should return a value indicating that the box volume is invalid. | The function returns a value indicating that the box volume is invalid. | Fail |
| 3 | Verify if the function handles very large box volume values. | 3165461326546 | The function should handle and validate the large box volume value correctly. | The function handles and validates the large box volume value correctly. | Fail |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 5 - checkDestination()

**Test Name or ID**:

**Test Type**: Black box

**Description**: Checks if the destination input is valid or not

**Setup:** N/A

**Test Function**: checkDestination()

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly validates a valid destination value. | 12L | The function should return a value indicating that the destination is valid. | The function returns a value indicating that the destination is valid. | Pass |
| 2 | Verify if the function correctly identifies an invalid destination value. | 28x | The function should return a value indicating that the destination is invalid. | The function returns a value indicating that the destination is invalid. | Pass |
| 3 | Verify if the function correctly handles special characters/invalid values in the destination value. | 12-L | The function should handle and validate the destination value correctly, ignoring special characters or invalid values. | The function handles and validates the destination value correctly, ignoring special characters or invalid values. | Fail |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 6 - selectTruck(struct Map \*map, struct Truck truckArr[], int numOfTrucks, struct Shipment shipment)

**Test Name or ID**:

**Test Type**: Black box

**Description**: Finds the best truck for shipment after comparing, routes, shortest diverted paths, load already on the trucks and percentages of the limiting factors. If the shipment cannot be delivered it returns a negative value

**Setup:** N/A

**Test Function**: selectTruck(struct Map \*map, struct Truck truckArr[], int numOfTrucks, struct Shipment shipment)

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly selects the best truck for the shipment. | 20 .5 12L | The function successfully selects the best truck for the shipment and returns a positive value representing the selected truck. | Ship on BLUE LINE, no diversion | Pass |
| 2 | Verify if the function correctly handles a situation where no truck can take the shipment. | 1000 2.0 23U | The function returns a negative value indicating that the shipment cannot be delivered. | Cannot ship, no trucks available. | Fail |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 7 - getUserInput()

**Test Name or ID**:

**Test Type**: Black box

**Description**: Gets input about the shipment details validates the input and displays error prompts for incorrect input stores the correct input in a shipment data structure and returns the data structure

**Setup:** N/A

**Test Function**: getUserInput()

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly takes and stores valid shipment details. | 20 .5 12L | The function successfully validates the input, stores the correct input in a shipment data structure, and returns the populated data structure. | Ship on BLUE LINE, no diversion | Pass |
| 2 | Verify if the function handles incorrect input | 1005 .5 12L | The function displays error prompts for incorrect input, does not store the incorrect data, and returns an error code or a null/empty data structure. | Invalid weight (must be 1-1000 Kg.) | Fail |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A

# Test Description Function 8 - getDivertedRoute()

**Test Name or ID**:

**Test Type**: Black box

**Description**: Gets the shortest possible path when a truck's route needs to be diverted for a shipment gets all the points on the map that make up the route and stores them in the divertedRoute structure.

**Setup:** N/A

**Test Function**: getDivertedRoute()

**Test Scenarios:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| 1 | Verify if the function correctly calculates the shortest possible diverted route | 500 1.0 8Y | The function successfully calculates the shortest possible diverted route for the given truck and shipment, and stores the points comprising the route in the divertedRoute structure. | Ship on GREEN LINE, divert: 7T, 7U, 7V, 7W, 7X, 7Y, 8Y | Pass |
| 2 | Verify if the function handles a situation where no diversion is needed | 20 .5 12L | The function identifies that no diversion is needed and returns an empty divertedRoute structure or a specific indicator to denote no diversion. | Ship on BLUE LINE, no diversion | Pass |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

**Bugs Found**:

N/A