# Test Description

**Test Name or ID**: T001 – T005

**Test Type**: Black box

**Description**: Finds the best truck for a shipment. It considers both the load on the truck, the size and weight of the shipment, and the route of the truck to try to place it on a truck that goes closest to the destination. If there is no truck that can deliver the shipment, it returns – 1.

**Setup:** To carry out testing of this function, linking to the Visual Studio Unit Testing template was performed and assert equal method was used.

**Test Function**: int truckIndex findTruckForShipment(struct Map map, struct TruckDetail trucks[], int numTrucks, struct Shipment shipment)

**Test Scenarios:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| The shipment can be delivered by a truck on the blue route without any diversion. | map: A map with buildings, blue route, green route, and yellow route.  trucks: An array of trucks with their respective details and routes.  numTrucks: The number of available trucks.  shipment: A shipment that can be delivered by a truck on the blue route without any diversion. | Index of the truck on the blue route | (TBC) | (TBC) |
| The shipment can be delivered by a truck on the green route with diversions. | map: A map with buildings, blue route, green route, and yellow route.  trucks: An array of trucks with their respective details and routes.  numTrucks: The number of available trucks.  shipment: A shipment that can be delivered by a truck on the green route with diversions. | Index of the truck on the green route | (TBC) | (TBC) |
| The shipment can be delivered by a truck on the yellow route with diversions. | map: A map with buildings, blue route, green route, and yellow route.  trucks: An array of trucks with their respective details and routes.  numTrucks: The number of available trucks.  shipment: A shipment that can be delivered by a truck on the yellow route with diversions. | Index of the truck on the yellow route | (TBC) | (TBC) |
| The shipment cannot be delivered by any of the available trucks. | map: A map with buildings, blue route, green route, and yellow route.  trucks: An array of trucks with their respective details and routes.  numTrucks: The number of available trucks.  shipment: A shipment that cannot be delivered by any of the available trucks. | -1 | (TBC) | (TBC) |
| The shipment can be delivered by a truck on the yellow route with diversions. | map: A map with buildings, blue route, green route, and yellow route.  trucks: An array of trucks with their respective details and routes.  numTrucks: The number of available trucks.  shipment: A shipment that can be delivered by a truck on the yellow route with diversions. | Index of the truck on the yellow route | (TBC) | (TBC) |

**Bugs Found**: Not yet found.