# Test Description

**Test Name or ID**: BB\_getTruckByReference

**Test Type**: Black Box

**Description**: To ensure the function returns the correct Truck pointer based on the argument of the routeSymbol parameter.

**Setup:**

1. Copy the Fleet struct (parameter 1) that nests the 3 Truck structs.
2. Ensure that each Truck struct has a unique routeSymbol assigned (e.g. 4, 2, and 8).
3. Define the argument for the routeSymbol parameter (parameter 2).
4. Call getTruckByReference with the copied Fleet struct and the routeSymbol arguments.
5. Declare and define a pointer that is assigned the Truck struct we expect to be returned.
6. Create assertions to compare the return value with the expected value and validate the returned Truck pointer.

**Test Function**: BB\_GetTruckByReference

**Test Scenarios:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Description | Test Data | Expected Result | Actual Result | Pass/Fail |
| Check function returns pointer to first truck | (&fleetCopy, 4)  Truck 1 routeSymbol = 4 | pointer to fleet.trucks[0]  (true) |  |  |
| Check function returns pointer to second truck | (&fleetCopy, 2)  Truck 2 routeSymbol = 2 | pointer to fleet.trucks[1]  (true) |  |  |
| Check function returns pointer to third truck | (&fleetCopy, 8)  Truck 3 routeSymbol = 8 | pointer to fleet.trucks[2]  (true) |  |  |
| Check function returns NULL when routeSymbol argument does not match any Truck’s routeSymbol | (&fleetCopy, 10) | NULL |  |  |
| Check function returns NULL when routeSymbol argument is 0 | (&fleetCopy, 0) | NULL |  |  |
| Check function returns NULL when routeSymbol argument is a negative number | (&fleetCopy, -1) | NULL |  |  |
| Check function returns pointer to first truck if its routeSymbol and the routeSymbol argument are matching negative numbers | (&fleetCopy, -1)  Truck 1 routeSymbol = -1 | pointer to fleet.trucks[0]  (true) |  |  |
| Check function returns pointer to second truck if its routeSymbol and the routeSymbol argument are both 0 | &fleetCopy, 0  Truck 2 routeSymbol = 0 | pointer to fleet.trucks[1]  (true) |  |  |
| Check function returns error code if routeSymbol argument matches with two trucks that have the same routeSymbol values | &fleetCopy, 8  Truck 1 routeSymbol = 8  Truck 2 routeSymbol = 8 | error code |  |  |

**Bugs Found**:

Description of each bug found above and how to reproduce it.