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Delivery program

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BLackbox testing

SFT244 Group5

Test Type: Black box testing

Function to be tested: findTruckForShipment

Parameter: Map Map, Truck Trucks, int numTruck, Shipment shipment

|  |  |  |
| --- | --- | --- |
| Data | Expected Result | Description |
| Map: Valid data  Truck: Valid data  numTrucks: Correct number of the array size  shipment: Valid data | The id of Truck in the array which is higher than -1 | Positive test: To test if the function functions correctly with normal data |
| Map: Normal data  Truck: Normal data  numTrucks: Correct number of the array size  shipment: Valid data but doesn’t fit in any of the trucks | -1 | Negative test: To test if the function rejects excess shipment |
| Map: Valid data  Truck: Valid data  numTrucks: Number that doesn’t match the truck number  shipment: Valid data | -1 | Negative test: To test if the function can find a truck with incorrect numTrucks |
| Map: Valid data  Truck: NULL  numTrucks: Correct number of the array size  shipment: Valid data | -1 | Negative test: To test if the function function properly with invalid data |
| Map: NULL  Truck: Valid data  numTrucks: Correct number of the array size  shipment: Valid data | -1 | Negative test: To test if the function function properly with invalid data |
| Map: Valid data  Truck: Valid data  numTrucks: Correct number of the array size  shipment: Valid data but the dimension and weight fit exactly to the remaining space of truck | 1 | Edge case testing: It should work. Test if it really works. |

Function to be tested: IsValidVolume4Truck

Parameter: Truck truck, double boxSize

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| --- | --- | --- |
| Data | Expected Result | Description |
| Truck: Valid Data  0 < boxSize < Truck.size | 1 | Positive test: positive result if box size fits |
| Truck: Valid Data  boxSize = Truck.size | 1 | Edge case: Box just fits the Truck size |
| Truck: Valid Data  boxSize > Truck.size | 0 | Out of boundary test: boxSize doesn’t fit, negative result should be returned |
| Truck: Valid Data  boxSize < 0 | 0 | Negative test: invalid boxSize, should return 0 |
| Truck: Invalid Data  boxSize < TRUCK\_MAX\_SIZE | 0 | Negative test: invalid truck data, should return 0 |

Function to be tested: IsValidWeight4Truck

Parameter: Truck truck, int weight

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| --- | --- | --- |
| Data | Expected Result | Description |
| Truck: Valid Data  0 < weight < truck.weight | 1 | Positive test: positive result if box weight fits |
| Truck: Valid Data  weight = truck.weight | 1 | Edge case: Box just fits the Truck weight |
| Truck: Valid Data  weight > truck.weight | 0 | Out of boundary test: weight doesn’t fit, negative result should be returned |
| Truck: Valid Data  weight < 0 | 0 | Negative test: invalid weight, should return 0 |
| Truck: Invalid Data  weight < TRUCK\_MAX\_WEIGHT | 0 | Negative test: invalid truck data, should return 0 |

Function to be tested: IsValidSize

Parameter: float size

|  |  |  |
| --- | --- | --- |
| Data | Expected Result | Description |
| Size: 0.5 | 1 | Positive test: only 0.5, 1 or 2 are accepted |
| Size: 1 | 1 | Positive test: only 0.5, 1 or 2 are accepted |
| Size: 2 | 1 | Positive test: only 0.5, 1 or 2 are accepted |
| Size: 0 | 0 | Negative test: invalid sizes, should return 0 |
| Size: 3 | 0 | Negative test: invalid size, should return 0 |

Function to be tested: IsTruckFull

Parameter:

|  |  |  |
| --- | --- | --- |
| Data | Expected Result | Description |
| Weight: 1500  Size: 48 | 1 | Positive test: Maximum number of both attributes |
| Weight: 1500  Size: 30 | 1 | Positive test: Maximum weight |
| Weight: 1000  Size: 48 | 1 | Positive test: Maximum Size |
| Weight: 1000  Size: 30 | 0 | Positive test: not full |
| Weight: 1000  Size: -1 | 0 | Negative test: despite being invalid state, it should still return 0 |
| Weight: -1  Size: 1 | 0 | Negative test: despite being invalid state, it should still return 0 |