# Function Description -1

**Function Name:** findTruckForShipment

**Parameter List:**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| map | struct Map | The map of the delivery area. |
| trucks[] | struct Truck | An array of trucks. |
| numTrucks | int | The number of trucks. |
| shipment | struct Shipment | The shipment to be delivered. |

**Returns:** Integer representing the index of the best truck. '-1' if no suitable truck

**Description**: This Function decides the truck that best suited to place the package, considering the load of the shipment and the route of the truck.

# Function Description -2

**Function Name:** loadShipment

**Parameter List:**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| \*truck | struct Truck | Pointer to the truck structure. |
| shipment | struct Shipment | Shipment to be loaded. |

**Returns**: '0' is successfully loaded '-1' otherwise

**Description**: Loads the shipment into truck if there is still available capacity.

# Function Description -3

**Function Name:** calculateRemainingCapacity

**Parameter List:**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| truck | struct Truck | The truck structure to calculate |

**Returns:** Structure containing the remaining volume and weight.

**Description**: Calculate the remaining of a truck (parallel array) based on the current load max load.

# Function Description -4

**Function Name** isTruckOverload

**Parameter List:**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| truck | struct Truck | Truck the truck to check |

**Returns:** Return 1 if the truck is overloaded, 0 otherwise.

**Description:** Checks if a truck is overloaded based on its current weight and maximum capacity.

# Function Description -5

**Function Name:** updatePosition

**Parameter List:**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| \*truck | struct Truck | Pointer to the truck structure. |
| newCooridnate | struct Point | New position of the truck. |

**Returns:** Update the truck structure with the new position.

**Description:** Function updates the position of the truck after it is delivered.