# Functions Description (JUST A WIP, SUBJECT TO CHANGE)

**Function Name:** findTruckForShipment

**Parameter List:**

* **Map: main map**
* **Trucks[]: array of trucks**
* **numTrucks: size of trucks array**
* **Shipment: the shipment**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| Map | Map struct | Main map |
| Trucks[] | Array of Truck struct | Array of trucks |
| numTrucks | int | Size of trucks array |
| Shipment | Shipment struct | The shipment |

**Returns:** Index of the best suitable truck, or -1 if none found.

**Description:** Returns the index of the best truck to load the shipment, by evaluating and comparing each’s truck capacity remaining by weight and volume. If none found returns -1.

**Function Name:** percentageWeightFull

**Parameter List:**

* **truck**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| truck | Truck (const reference) | |  | | --- | |  |  |  | | --- | | The truck whose weight usage is calculated. | |

**Returns:** Percentage full by weight.

**Description:** Percentage full by weight of the truck.

**Function Name:** percentageVolumeFull

**Parameter List:**

* **truck**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| truck | |  | | --- | |  |  |  | | --- | | Truck (const reference) | | The truck whose volume usage is calculated. |

**Returns:** Percentage full by volume.

**Description:** Percentage full by volume of the truck.

**Function Name:** validateDestination

**Parameter List:**

* **map**
* **destination**

|  |  |  |
| --- | --- | --- |
| Parameter Name | Type | Description |
| map | GridMap (const reference) | |  | | --- | |  |  |  | | --- | | The map representing the city grid and buildings. | |
| destination | |  | | --- | |  |  |  | | --- | | Location (const reference) | | |  | | --- | |  |  |  | | --- | | The location to validate for delivery. | |

**Returns:** True or false of the destination’s validity.

**Description:** Checks if destination is a building.