

# Logistics Application

## Description:

This application deals with customers who place their orders. A customer can place an order by creating a new order using the createOrder api and then mapping each product with the order created using the createOrderDetails api. As soon as the order is placed, a driver is assigned to deliver the order. The particular driver status in drivers table is then updated as 'assigned'. Once the order is delivered to the customers hub, the order status is updated to 'delivered' and the driver status is updated to 'free'. If no drivers are free at the moment of order creation, the driver is assigned to the order automatically after any one driver gets free.

## Entities:

- Products
- Orders
- Customers
- Drivers
- Hubs

## Relations between the tables:

- products and orders - many to many relation
- orders and customers - many to one relation
- orders and drivers - many to many relation

## The database consists of 7 tables:

1. Products - containing the product details
2. Orders - containing the details of orders, in which the status of the order can be updated, whether ordered or delivered
3. Order\_details - it is a junction table which maps the products and the orders
4. Customers - containing the customer details
5. Drivers - containing the driver details, in which the status of the driver can be updated, whether free or assigned
6. Hubs - containing the hub details
7. Driver\_details - it is a junction table which maps the drivers with an order and the hub to which the order must be delivered, in which the status of the order can be updated, whether out for delivery or delivered

## Analytics:

- The top 3 performers can be listed for certain period of time which can be 1 week, 1 month, 6 months, 1 year or more
- The top 5 hubs receiving the most orders can be listed for a certain period of time which can 1 week, 1 month, 6 months, 1 year or more

Caching:

Redis - is used as a temporary memory storage for caching and is implemented for the orders entity. When any order is updated in the database, the order is deleted from the cache and created again with its new properties.