General description

We are planning to start a delivery business in Megacity.

Our plan is to act as intermediary between local companies with a product offering, and clients that want to buy them. To this end our software will coordinate couriers in the city, delivering packages from venues to clients.

Our software will receive API calls for the deliveries to be made, from our external partners.

Venues

The system will allow management of partner venues, from which deliveries will be received.

Venues are described by id, name, lat, lon, contact number.

The system will allow CRUD operations on venues:

* Add, edit, find by id, list all, soft delete

Couriers

The system will allow onboarding couriers, that are described by: id, name, lat, lon, active.

The system will allow the following operations for couriers:

* Add, edit (name, lat/lon, active), find by id, list all, assign delivery, soft delete

Couriers will have an app that will periodically (~every 30 seconds) send a GPS-based location update of where they are. The app will allow them to start their shift – become “active” – and end their shift – deactivate.

Human dispatchers, or automated systems will be allowed to assign orders to an active courier.

Deliveries

The system will allow adding deliveries, that are described by: id, status, venue, client address, courier, products, delivery cost, total value, expected time of delivery. Delivery status is one of the following: NEW, ASSIGNED, PICKED\_UP, FINISHED, CANCELED.

Client addresses are described by id, client id, client name, lat, lon.

Delivery products are described by id, product name, product cost and quantity.

The total value of the delivery will be the sum of product costs plus the delivery cost.

Workflow for New delivery

When a delivery request is received, the following operations should happen:

* Look for the client address in our system; if present, reuse and update its information; if not present, create new client address record
* Look for the venue in our system; if present, reuse and update information; if not present, create new record
* Compute total delivery cost
* If a required expected time of delivery is not sent, assume it is ASAP and set expected time of delivery to current time plus 1 hour