Intro

The mission of our company is to improve the transportation using the tools of the sharing economy. Our highest goal – everybody becomes a partner of Uklon. Then everybody who has a car can share a ride with others on the way to work or home..

The aim of this task is to find optimal conditions for the fulfillment of our mission and commitments to our clients and partners. We want you to find the balance of demand and supply in our service through the most rational distribution of cars in the city at each point of time.

Project 1. X demand forecasting
Competition specs
- *input*: anonymous historical demand data of the city X for Y months + OpenStreetMaps X city
- *constraint*: city X should be divided into forecast areas demand_cell with a max area cell_square
- *simplification:* for geospatial math calculations these libs can be used
    - S2 http://s2geometry.io/ ; http://s2geometry.io/getS2.html
    - H3 https://uber.github.io/h3/ ; https://github.com/scottmmjackson/h3r R port
- *constraint*: dataset can be enriched only from sources with open public access
- *simplification*: data that go beyond the geographical boundaries of X city can be considered as noises
- *output*
    - general forecast of demand for 24 hours and 7 days for demand_cell's with weighting coefficients of forecast_volume + OpenStreetMaps Y city
    - additionally can be implemented individual forecast for the driver for 24 hours and 7 days for demand_cell's with weighting coefficients of forecast_volume + OpenStreetMaps X city
    - the best implementation will be determined based on the accuracy of the forecast compared to the next 7 days demand dataset for X city
- all used algorithms must be MIT or Apache License 2.0 licensed

Params (may vary for final test)
- demand_cell (basic cell taken for computations, S2||H3||smth else)
- cell_square = 2-5 km (depending on data volume)
- forecast_volume = [1..n]

Data description
Dataset represents a real demand picture in the city of X for Y months..
- ride_id - unique ride id
- created_at - ride request time
- pickup_lat - pickup location
- pickup_lng

- dropoff_lat - dropoff location
- dropoff_lng
- user_id - unique rider id
- driver_id - unique driver id
- ride_distance - distance of the ride
- canceled_by_cleint - client cancellation flag
- canceled_by_driver - driver cancellation flag
- ride_to_suburb - suburban part of the route flag