

Design

g-maps

* An API to be used by external apps like OLA, UBER.

* Suppose want to go from A to B, then it might be that by walk 10km route is faster
by car, 15km " " ".

* A phone, A GPS, Internet/ offline maps

* Addresses are like 1600 Amphiphi;
16° Long 15° Lat.

functional req^m =

- src → dst → route
- user location tracking
- ETA, traffic data
- have map data 5TBs

Non-functional req^m.

- * 1 B daily active users.
- * Accuracy, No Latency. in real time user locat.
- * Availability and reliability.
- * Latency can be tolerated when preparing route.

Lets Start

We will use 'Spatial Indexing'

uber uses hexagon
for the same.

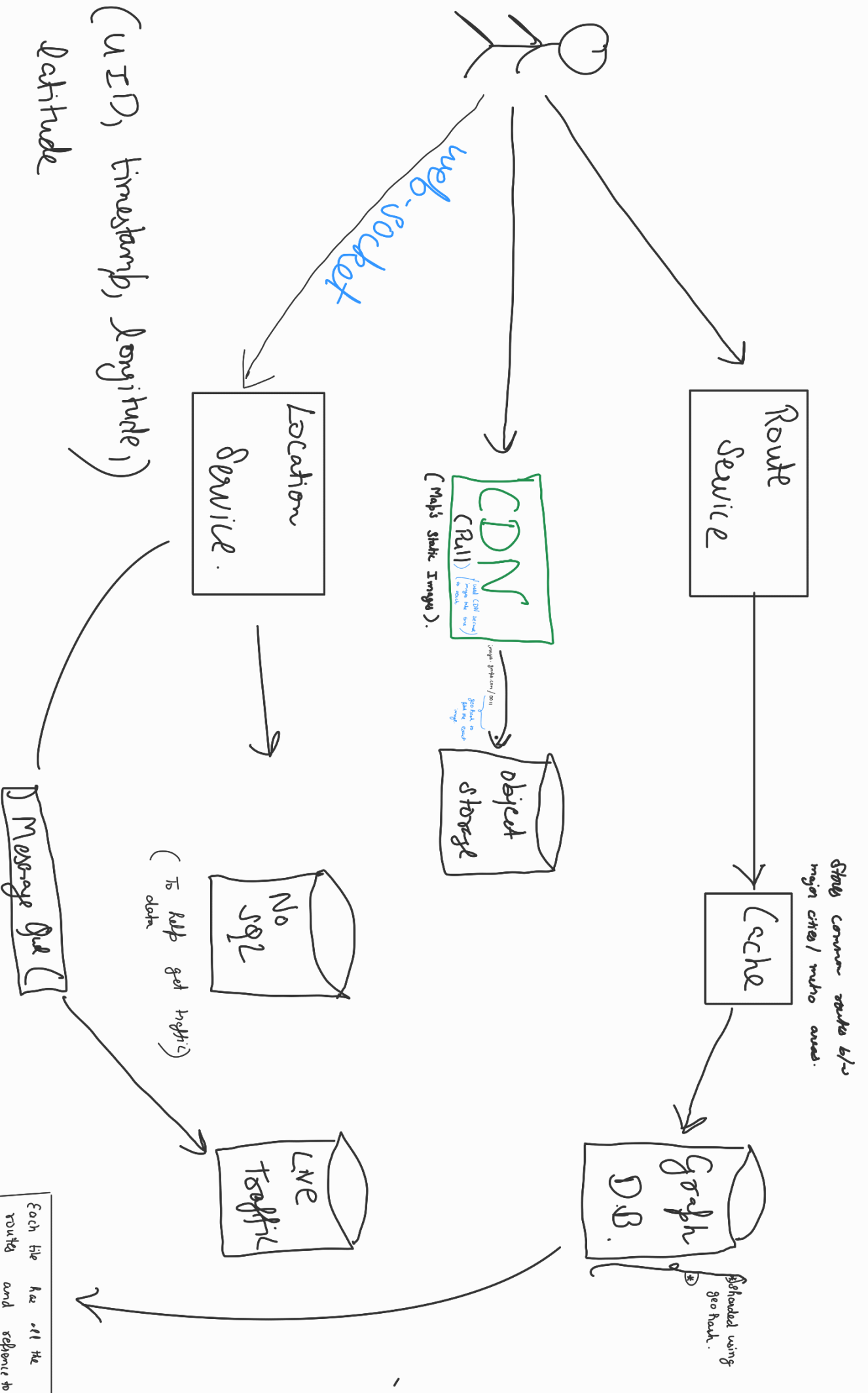
- Divide the maps into small squares for sharding. (Like 4 quadrants in x-y)
Co-ordinate system
- squares are chosen because they best represent to circle.
- Also, sq. gives us power to do it easily in case of recursion.
Like breaking a square into further small squares.
- used into Quadtree and Geohashing.
- Available in databases such as
 - ↳ Post SQL
 - ↳ Dynamo DB

↓ Suppose, I wanna go to 1101

01	00
10	11

↓↓ Now, again go to 01

	1101 ; 1100
	1110 ; 1111



Each file has all the routes and reference to adjacent files and will be stored in a document form.

