
LBS sth

王晓开 2016/12/22

agenda

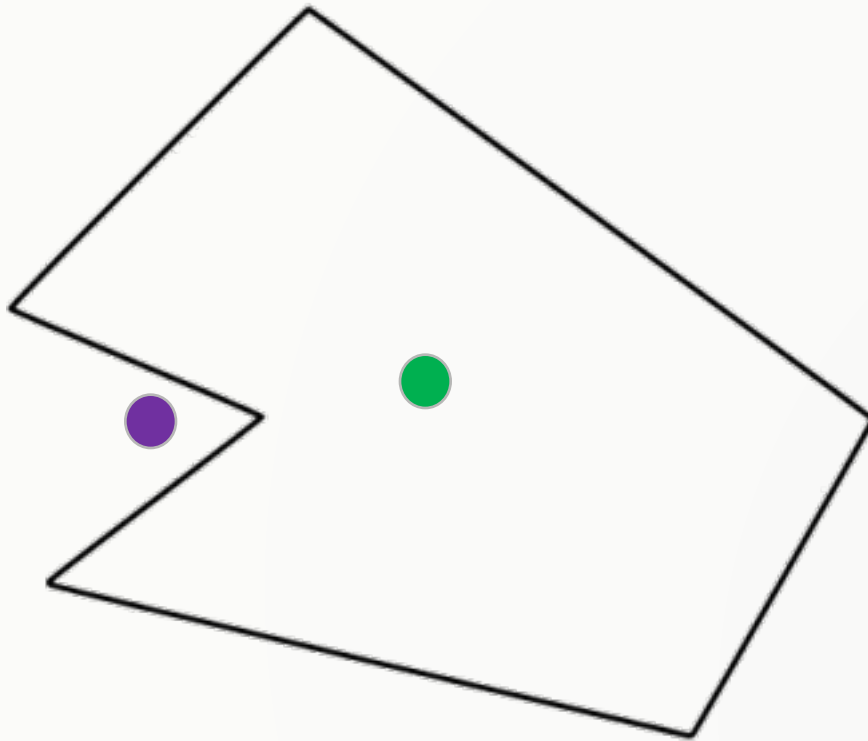
geofence

nearby

grid

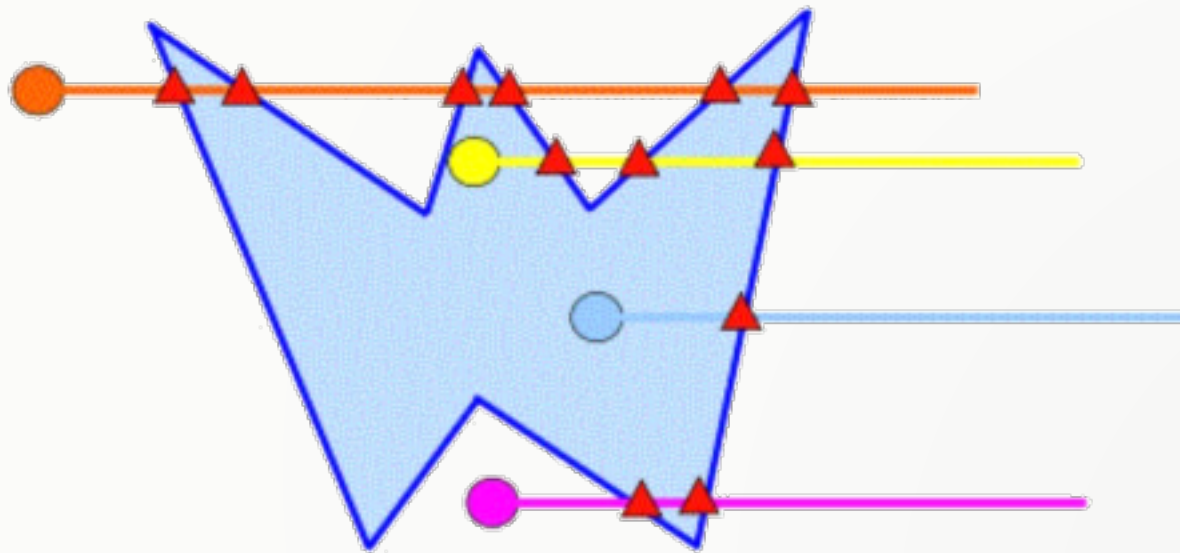
geofence

如何判断点在多边形的内部、外部？



geofence

ray cast

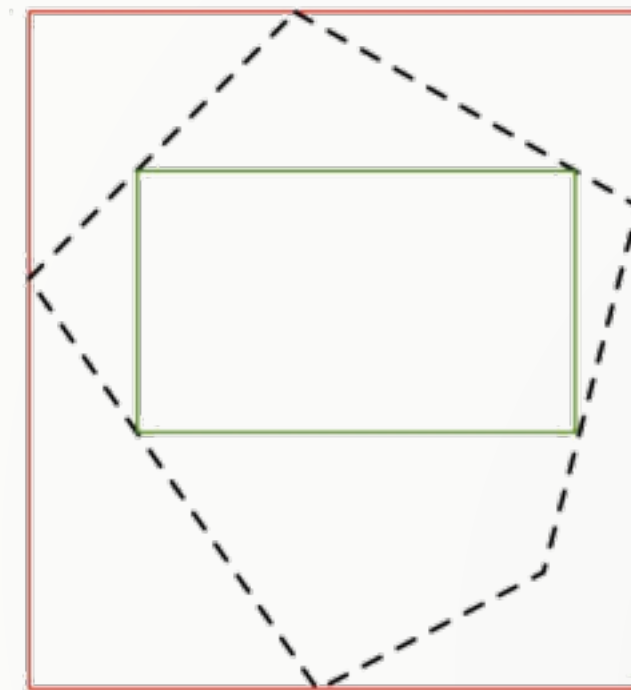


奇数：内部
偶数：外部
复杂度： $O(n)$

geofence

1. 最小外接矩形
2. 最大内接矩形

优化: Rtree索引



geofence

Material:

http://www.homer.com.au/webdoc/geometry/point_in_polygon.htm

https://en.wikipedia.org/wiki/Point_in_polygon#Ray_casting_algorithm

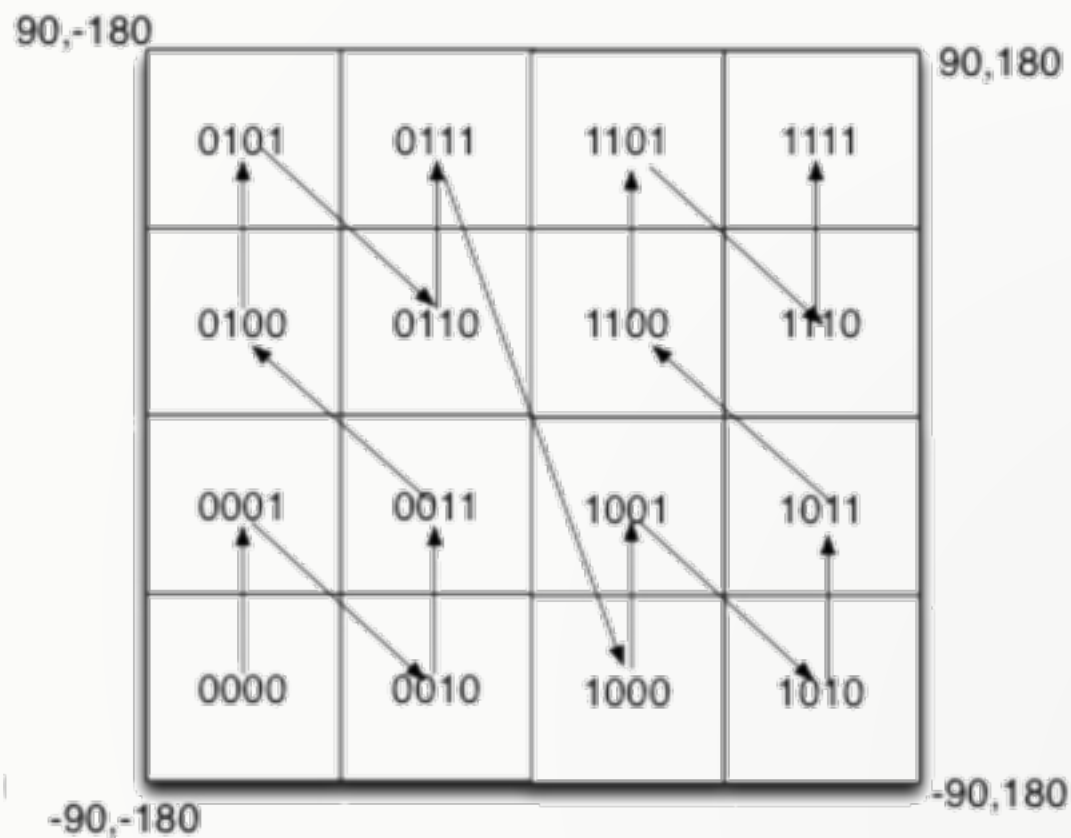
nearby

编码方式: geohash

填充方式: peano

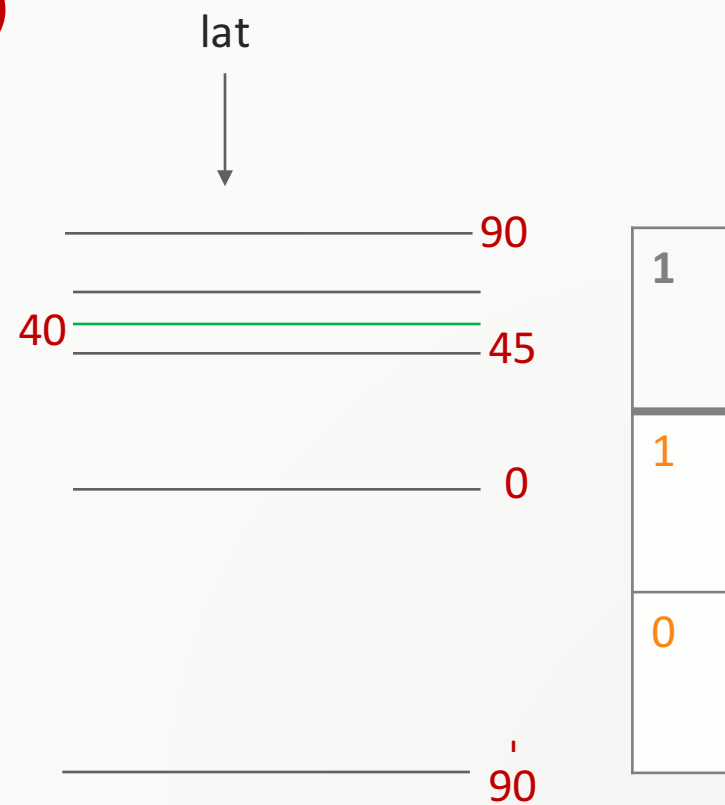
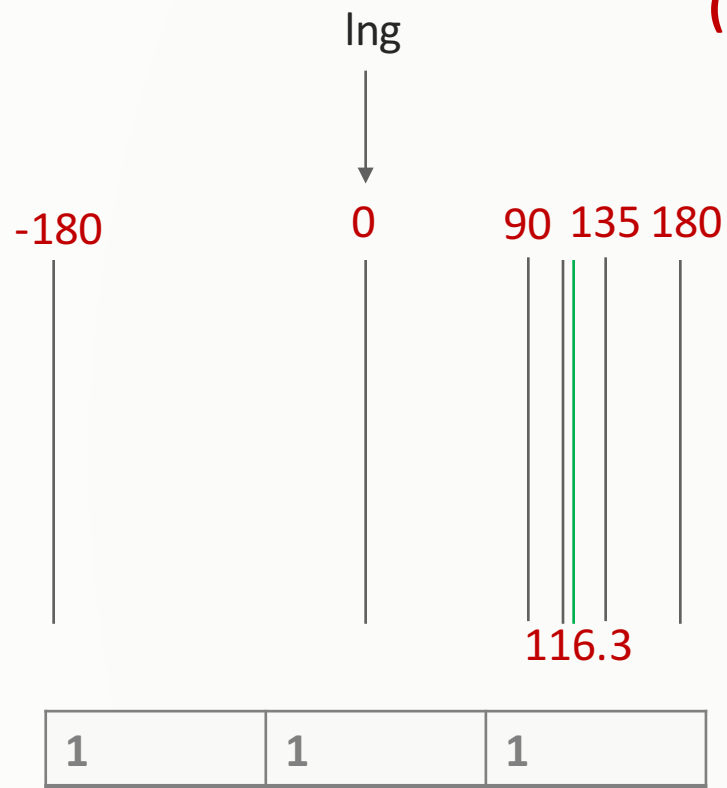
对比uber:

填充方式: hilbert



nearby

(lat, lng)-(116.332,40.009)



geohash: 1 1 1 1 1 0

nearby

(lat, lng)

(116.332,40.009)



geofence



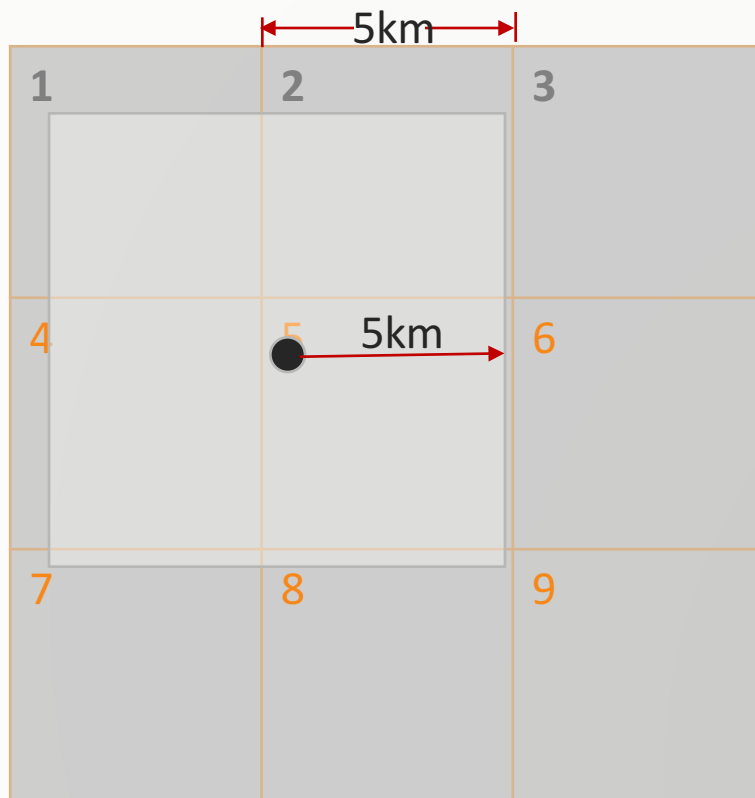
city_id

北京

nearby

召回方式：九宫格

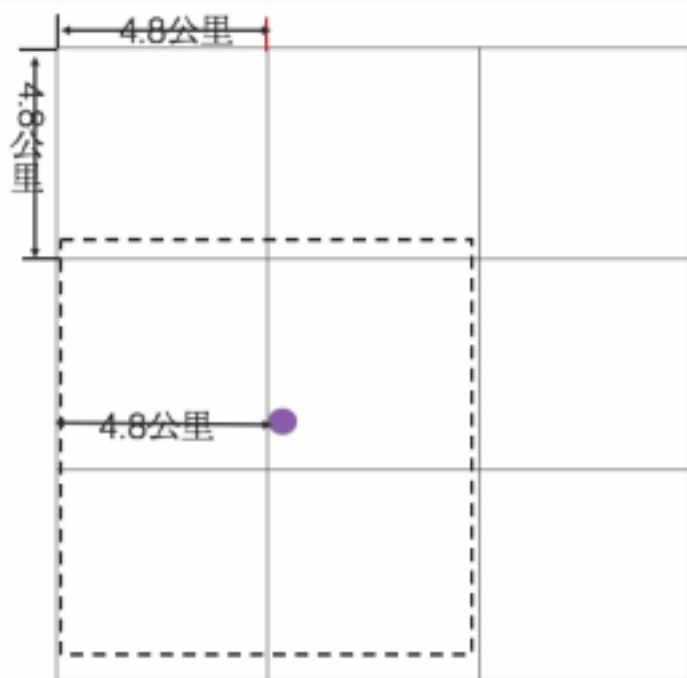
以格子半径画圆过滤：
过滤后只召回1、2、4、
5、7、8 格子



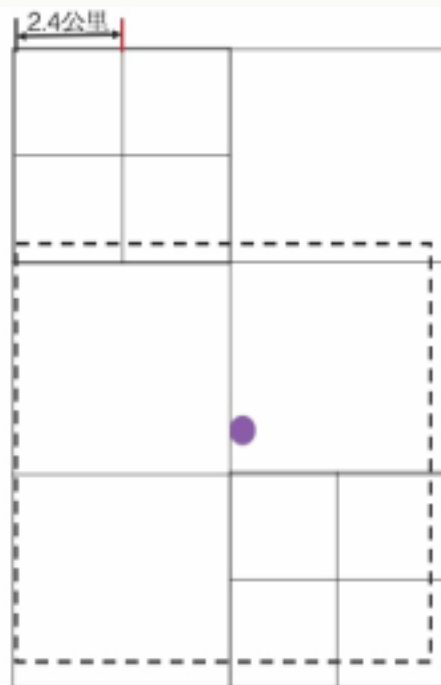
nearby

- grid split to smaller

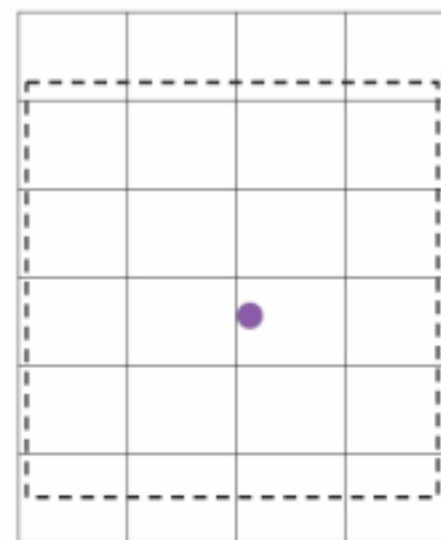
geohash九宫格



召回5公里范围



召回精度2.4公里



缩小了召回范围

nearby

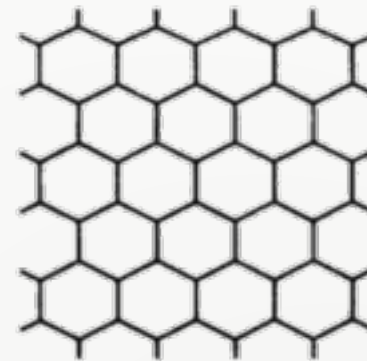
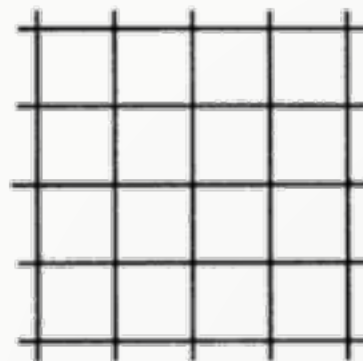
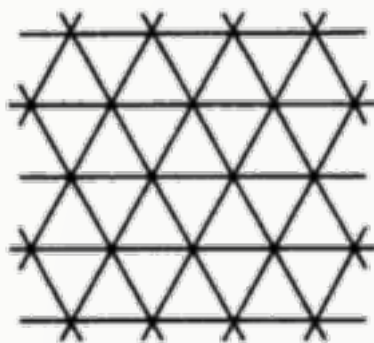
Material:

<https://en.wikipedia.org/wiki/Geohash>

<http://www.cnblogs.com/LBSer/p/3310455.html>

grid

- 采样效率高
- 覆盖率、角度分辨率高
- 消除领域歧义
- 更多策略支持



grid

Material:

<http://wenku.baidu.com/view/f163be430c22590102029de6.html?from=search>

《图像工程》：第三章，数字化的图像

<http://www.redblobgames.com/grids/hexagons/>

THANK
YOU