CREATE TABLE points2 (

name VARCHAR(255),

longitude FLOAT,

latitude FLOAT

);

INSERT INTO points2 (name, longitude, latitude) VALUES

('Leavy',-118.2834358,34.0213809),

('Doheny',-118.2843366,34.0203954),

('SciencEng',-118.2888894,34.0198992),

('Viterbi',-118.2875113,34.0206074),

('Marshall',-118.2856719,34.0186260),

('Dentistry',-118.2873030,34.0242580),

('Cava',-118.2845707,34.0251192),

('Galen Dining',-118.2872337,34.0228039),

('Dulce',-118.2851314,34.0252201),

('Tommy Fountain',-118.2852153,34.0205785),

('Generations',-118.2833323,34.0222885),

('CS Fountain',-118.2891122,34.0205550),

('Home',-118.2879942,34.0321413);

select \* from points2

CREATE EXTENSION postgis;

SHOW search\_path;

//Query for Convex Hull

SELECT ST\_AsText(ST\_ConvexHull(ST\_Collect(ST\_SetSRID(ST\_Point(longitude, latitude), 4326))))

FROM points2;

//Query for K-nearest neighbour

ALTER TABLE points2 ADD COLUMN geom geometry(Point, 4326);

UPDATE points2 SET geom = ST\_SetSRID(ST\_Point(longitude, latitude), 4326);

WITH reference\_point AS (

SELECT ST\_SetSRID(ST\_Point(-118.2879942,34.0321413), 4326) AS geom

)

SELECT

points2.name,

ST\_AsText(ST\_SetSRID(ST\_Point(longitude, latitude), 4326)) AS location,

ST\_Distance(points2.geom, reference\_point.geom) AS distance

FROM

points2,

reference\_point

WHERE

points2.geom && ST\_Expand(reference\_point.geom, 1) -- Use bounding box to filter possible nearest neighbors

ORDER BY

points2.geom <-> reference\_point.geom

LIMIT 5;