**Activity: 2 GeoSQL**

**1. Make point feature from Point 1: 41.948637, -93.610065 using ST\_POINT**

SELECT ST\_POINT(-93.610065, 41.948637) as point\_feature;

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**2. Find distance (ST\_DISTANEC) between points below: (Ans: 0.048702) •Point 1: 41.948637, -93.610065, Point 2 : 41.997339, -93.610229**

SELECT ST\_DISTANCE(

ST\_POINT(-93.610065, 41.948637),

ST\_POINT(-93.610229, 41.997339)

) as distance;

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**3. Create a line string (ST\_LINESTRING) from above points and calculate distance from Point 3 : 41.972017, -93.619738 (Ans: 0.0095942)**

WITH line\_string AS (

SELECT ST\_LINESTRING(

ARRAY[

ST\_POINT(-93.610065, 41.948637),

ST\_POINT(-93.610229, 41.997339)

]

) as line

)

SELECT ST\_DISTANCE(

ST\_POINT(-93.619738, 41.972017),

line

) as distance\_from\_point\_3

FROM line\_string;

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**4 Get it in feet by multiplying 364567 (Ans: 3497.7 ft)**

WITH line\_string AS (

SELECT ST\_LINESTRING(

ARRAY[

ST\_POINT(-93.610065, 41.948637),

ST\_POINT(-93.610229, 41.997339)

]

) as line

)

SELECT ST\_DISTANCE(

ST\_POINT(-93.619738, 41.972017),

line

) \* 364567 as distance\_in\_feet

FROM line\_string;

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**5. Make point geometry column from latitude and longitude in gps\_data table**

select \*, st\_distance(

st\_point(a.longitude, a.latitude),

st\_linestring(array[

st\_point(b.segment\_start\_longitude, b.segment\_start\_latitude),

st\_point(b.segment\_end\_longitude,b.segment\_end\_latitude)])) distance from "raghu\_gps\_data" a

cross join (select \* from "aiml\_class"."raghu\_lrs\_data" where not segment\_start\_latitude = segment\_end\_latitude and not segment\_start\_longitude = segment\_end\_longitude) b

where a.day =1 and a.hour = 1

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