

Homework 2.5 - “Extra credit” assignment

Assigned 11/10, due 11/30 (Sunday night)

This 'filler' homework is worth $2 \times 5 = 10$ points. Your score in this homework will be added to your raw midterm score.

Please do the assignment in sqlfiddle (<http://www.sqlfiddle.com>) [only], and submit a README file with the following:

- your sqlfiddle URL, eg. <http://sqlfiddle.com/#!4/ee7da/3121>
- your SQL queries copied and pasted from your sqlfiddle window (we ask for this to ensure that you are not going to change your sqlfiddle's contents AFTER you submit the URL)

The queries you will write will be based on MySQL5.5's 'Spatial' extensions. Here is the link to the relevant documentation (VERY useful!): <http://dev.mysql.com/doc/refman/5.5/en/spatial-function-reference.html>

Create the following point and polygon:

**** point:** (1,1)

**** polygon:** (0,0,3,0,0,3,0,0)

Draw/plot the above on a sheet of paper to get a quick visualization – you can see that the point is **inside** the polygon; in fact, the point happens to be the polygon's **centroid**.

Here are the **five** SQL queries you need to create:

1. Show/prove/verify that the geometry type of the polygon is POLYGON (sqlfiddle's output needs to be POLYGON)
2. Use Within() to show that the point is inside the polygon (sqlfiddle's output will be 1)
3. Use Contains() to also show that the point is inside the polygon (sqlfiddle's output will be 1)
4. Find the bounding box (which would be a rectangle) of the given polygon. sqlfiddle's output needs to be POLYGON((0 0,3 0,3 3,0 3,0 0))
5. Find the centroid of the given polygon. sqlfiddle's output needs to be POINT(1 1)

Notes:

- Point() creates a point
- PolygonFromText('POLYGON((x1 y1, x2 y2, ...))') creates a polygon (note the double parens!)
- AsText() outputs text strings of the bounding box and centroid values (ie. you'd need to use it for queries #4 and #5)
- the 'Schema' part of the fiddle (the LHS window) is irrelevant, so you can type in any table creation query you want, eg. CREATE TABLE data (n varchar(9), l varchar(10));

Have fun! This should be short and sweet..

