Exercise

CSC230 Database Technologies for Analytics

27 October 2021

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SELECT 'Problem 0.' AS ' ';
/* name of waterfall, name of county, ordered by county */
SELECT f.name AS 'Name of waterfall', c.name AS 'Name of county'
  FROM upfall f INNER JOIN county c ON f.county_id = c.id
  ORDER BY c.name, f.name;

SELECT 'Problem 1.' AS ' ';
/* name of county, number of waterfalls in county, ordered by county */
SELECT c.name AS 'Name of county', COUNT(*) AS 'Number of waterfalls in county'
  FROM upfall f INNER JOIN county c ON f.county_id= c.id
  GROUP BY c.name
  ORDER BY c.name;

SELECT 'Problem 2.' AS ' ';
/* names of counties that have only one waterfall */
SELECT name AS 'Name of county' FROM
   (SELECT c.name AS name, COUNT(*) AS numberOfFalls
       FROM upfall f INNER JOIN county c ON f.county_id = c.id
       GROUP BY c.name) AS t
  WHERE numberOfFalls = 1
  ORDER BY name;

SELECT 'Problem 3.' AS ' ';
/* names of counties that have more than one waterfall */
SELECT name AS 'Name of county' FROM
   (SELECT c.name AS name, COUNT(*) AS numberOfFalls
       FROM upfall f INNER JOIN county c ON f.county_id = c.id
       GROUP BY c.name) AS t
  WHERE numberOfFalls > 1
  ORDER BY name;

SELECT 'Problem 4.' AS ' ';
/* name of city or township, name of county ordered by county, city/township */
SELECT a.name AS 'City/Township', b.name AS 'County'
  FROM gov_unit a INNER JOIN gov_unit b ON a.parent_id = b.id
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  WHERE a.type IN ('City', 'Township') AND b.type = 'County'
  ORDER BY b.name, a.name;

SELECT 'Problem 5.' AS ' ';
/*
 * name of city or township, name of county, name of state
 * ordered by state, county, city
*/
SELECT a.name AS 'City/Township', b.name AS 'County', c.name AS 'State'
  FROM gov_unit a INNER JOIN gov_unit b
    ON a.parent_id = b.id INNER JOIN gov_unit c
    ON b.parent_id = c.id
  WHERE a.type IN ('City', 'Township') AND b.type = 'County'
  ORDER BY c.name, b.name, a.name;

SELECT 'Problem 6.' AS ' ';
/*
 * name of waterfall, length of waterfall's description
 * ordered by length of description in descending order, name
*/
SELECT name, LENGTH(description) AS 'Length_of_description'
  FROM upfall ORDER BY LENGTH(description) DESC, name;

SELECT 'Problem 7.' AS ' ';
/*
 * name of trip, name of waterfall
*/
SELECT t.name, f.name FROM
   upfall f INNER JOIN trip t ON t.stop = f.id
  ORDER BY t.name, f.name;

SELECT 'Problem 8.' AS ' ';
/*
 * name of trip, name of first waterfall on trip
*/
SELECT t.name, f.name FROM
   upfall f INNER JOIN trip t ON t.stop = f.id
  WHERE parent_stop IS NULL;
```