SQL Exam

Module 16

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Thinkful

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--SQL Exam

--1.Allows you to inspect the schema of the naep table.

SELECT column\_name, data\_type

FROM information\_schema.columns

WHERE table\_name = 'naep';

--2.Returns the first 50 records of the naep table.

SELECT \*

FROM naep

LIMIT 50;

--3.Returns summary statistics for avg\_math\_4\_score by state.

--COUNT, AVERAGE, MIN, MAX

--Make sure to sort the results alphabetically by state name.

SELECT

state,

COUNT(avg\_math\_4\_score) AS count\_of\_math\_4\_scores,

ROUND(AVG(avg\_math\_4\_score),3) AS avg\_all\_math\_4\_scores,

MIN(avg\_math\_4\_score) AS min\_avg\_math\_4\_score,

MAX(avg\_math\_4\_score) AS max\_avg\_math\_4\_score

FROM naep

GROUP BY state

ORDER BY state;

--4.Alters the previous query so that it returns only the summary statistics

--for avg\_math\_4\_score by state with differences in max and min values that are greater than 30.

SELECT

state,

COUNT(avg\_math\_4\_score) AS count\_of\_math\_4\_scores,

ROUND(AVG(avg\_math\_4\_score),3) AS avg\_all\_math\_4\_scores,

MIN(avg\_math\_4\_score) AS min\_avg\_math\_4\_score,

MAX(avg\_math\_4\_score) AS max\_avg\_math\_4\_score,

MAX(avg\_math\_4\_score) - MIN(avg\_math\_4\_score) AS diff\_max\_min

FROM naep

GROUP BY state

HAVING MAX(avg\_math\_4\_score) - MIN(avg\_math\_4\_score) > 30

ORDER BY state;

--Base formula

SELECT state, avg\_math\_4\_score, year

FROM naep

WHERE year = '2000';

--5.Returns a field called bottom\_10\_states that lists the states

--in the bottom 10 for avg\_math\_4\_score in the year 2000.

SELECT state AS bottom\_10\_states, avg\_math\_4\_score, year

FROM naep

WHERE year = '2000'

AND avg\_math\_4\_score IS NOT NULL

ORDER BY avg\_math\_4\_score

LIMIT 10;

--6.Calculates the average avg\_math\_4\_score

--rounded to the nearest 2 decimal places over all states in the year 2000.

SELECT ROUND(AVG(avg\_math\_4\_score),2) AS avg\_of\_avg\_math\_4\_score

FROM naep

WHERE year = '2000'

GROUP BY year;

--7.Returns a field called below\_average\_states\_y2000

--that lists all states with an avg\_math\_4\_score

--less than the average over all states in the year 2000.

SELECT state AS below\_average\_states\_y2000, avg\_math\_4\_score

--Including the avg\_math\_4\_score as a reference

FROM naep

WHERE year = 2000

--insert query from question 6 as value for avg of all math scores

AND avg\_math\_4\_score <

(SELECT ROUND(AVG(avg\_math\_4\_score),2) AS avg\_of\_avg\_math\_4\_score

FROM naep

WHERE year = '2000'

GROUP BY year);

--8.returns a field called scores\_missing\_y2000

--that lists any states with missing values in the avg\_math\_4\_score column

--of the naep data table for the year 2000.

SELECT state AS scores\_missing\_y2000

FROM naep

WHERE avg\_math\_4\_score IS NULL

AND year = '2000';

--9.returns for the year 2000 the state, avg\_math\_4\_score, and total\_expenditure

--from the naep table left outer joined with the finance table,

--using id as the key and ordered by total\_expenditure greatest to least.

--Be sure to round avg\_math\_4\_score to the nearest 2 decimal places

--and then filter out NULL avg\_math\_4\_scores in order to see any correlation more clearly.

SELECT n.state, ROUND(n.avg\_math\_4\_score,2), f.total\_expenditure

FROM naep AS n LEFT OUTER JOIN finance AS f

ON n.id = f.id

WHERE n.year = '2000'

ORDER BY f.total\_expenditure DESC;

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