Selecting Data

Understanding CREATE statements.

* Use the .schema to identify column that contains integers.

Solution: .schema

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Description automatically generated

Selecting Site Names.

* Write a query that selects only the name column from the Site table.

Solution: SELECT name FROM Site;

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Query Style

* Many people format queries as:

*SELECT personal, family FROM person;*

Or

*select Personal, Family from PERSON;*

What style do you find easiest to read, and why?

Solution: We would prefer the first style as it is easy to look at the SQL keywords and makes it easiest to read.

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Sorting and Removing Duplicates

Finding Distinct Dates

* Write a query that selects distinct dates from the Visited table.

Solution: SELECT DISTINCT dated FROM Visited;

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Description automatically generated

* Write a query that displays the full names of the scientists in the Person table, ordered by family name.

Solution: SELECT personal, family FROM Person ORDER BY family ASC;

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Filtering

Fix This Query

* Suppose we want to select all sites that lie within 48 degrees of the equator. Our first query is:

Solution: SELECT \* FROM Site WHERE (lat > -48) OR (lat < 48);

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Finding Outliers

* Normalized salinity readings are supposed to be between 0.0 and 1.0. Write a query that selects all records from Survey with salinity values outside this range.

Solution: SELECT \* FROM Survey WHERE quant = 'sal' AND ((reading > 1.0) OR (reading < 0.0));

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Matching Patterns

* Which of these expressions are true?
* 'a' LIKE 'a'
* 'a' LIKE '%a'
* 'beta' LIKE '%a'
* 'alpha' LIKE 'a%%'
* 'alpha' LIKE 'a%p%'

Solution:

True because these are the same character.

True because the wildcard can match *zero* or more characters.

True because the % matches bet and the a matches the a.

True because the first wildcard matches lpha and the second wildcard matches zero characters (or vice versa).

True because the first wildcard matches l and the second wildcard matches ha.

Calculating New Values

Fixing Salinity Readings

* After further reading, we realize that Valentina Roerich was reporting salinity as percentages. Write a query that returns all of her salinity measurements from the Survey table with the values divided by 100.

Solution: SELECT taken, reading / 100 FROM Survey WHERE person = 'roe' AND quant = 'sal';

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Unions

* The UNION operator combines the results of two queries:

*SELECT \* FROM Person WHERE id = 'dyer' UNION SELECT \* FROM Person WHERE id = 'roe';*

Solution: SELECT taken, reading FROM Survey WHERE person != 'roe' AND quant = 'sal' UNION SELECT taken, reading / 100 FROM Survey WHERE person = 'roe' AND quant = 'sal' ORDER BY taken ASC;

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Selecting Major Site Identifiers

* The site identifiers in the Visited table have two parts separated by a ‘-‘:

*SELECT DISTINCT site FROM Visited;*

Solution: SELECT DISTINCT substr(site, 1, instr(site, '-') - 1) AS MajorSite FROM Visited;

Graphical user interface, text, application

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