‹ Return to Classroom

Deforestation Exploration

REVIEW ANNOTATIONS 1 HISTORY

Meets Specifications

Congratulations !!

Congratulations on completing the Deforestation Exploration project, your efforts have paid off 🎉
Amazing work in this submission! I was truly happy to see the results of all your learnings come to play in this project.

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What stands out in your submission is the logic you used in writing your queries, most especially the solution you came up with for question 3C. You properly partitioned the countries into their respective quartiles based on their forest percentage vale, this was impressive. Also, you made some brilliant recommendations. Keep this up 👍

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Suggestion

Check this unique way of coming up with the solution for question 3c below

```
SELECT FLOOR(Percent_forest_area/25) quartile, count(*)
FROM  forestation
WHERE year=2016
    AND Percent_forest_area IS NOT NULL
    AND country_name<>'World'
GROUP BY 1;
```

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Extra Materials

Here are some resources you might find useful for more insight and further learning.

- Database normalization
- SQL Interview Questions
- 46 Questions on SQL to test a data science professional (Skill test Solution)

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Hope the knowledge and techniques you learn throughout this course will help you in your career.
Keep up the great work

Building A View

✓ The create a forestation view query that the student writes prior to answering the questions joins all three tables on the columns indicated, and creates a new column by performing a calculation that compares two columns.

Great job! You have applied the concept of CREATE by joining the existing tables and creating a single view. This will now serve as your single source of truth throughout the rest of the project.

- You could refer to Microsoft Documentation For more info on creating views.

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THE FOLLOWING A SOME OF THE USE CASES OF VIEWS

- As a security mechanism by allowing users to access data through the view, without granting the users permissions to directly access the underlying base tables.
- To provide a backward compatible interface to emulate a table whose schema has changed.

Basic SQL Queries

✓ **Each query is included in the Appendix and executes properly. A reviewer should be able to execute this same query and get the correct output.**

Awesome!

I tested your SQL queries on the Udacity workspace they are running as expected and give the appropriate results.✅

✓ `SELECT` **queries return results consistent with the question being asked.**

Awesome !!

I like the fact that you have properly limited and ordered the output of your queries based on the question it is trying to answer

TIPS

The SELECT clause specifies the columns from which data values are to be retrieved by the query. Data retrieval is limited to the columns specified. When selecting from two or more tables having duplicate column names, it may be necessary to qualify column names with table or view names.

✓ `WHERE` **clauses used in** `SELECT` **statements filter tables according to the questions being asked**

> The WHERE clause is used to filter records. It is used to extract only those records that fulfill a specified condition. In your current submission of the project, you had perfectly taken advantage of the WHERE clause to filter the results. ✅

TIPS

The SQL WHERE clause is something you must master if you wish to use SQL for working with data. It is arguably one of the most basic and must-learn constructs of SQL. For more insight into learning, refer to the below

- Write a WHERE Clause in SQL.

✓ `ORDER BY` **clauses used in** `SELECT` **statements sort query results according to the questions being asked, and specify ASC for ascending or DESC for descending where appropriate**

> ORDER BY clauses are used when we want to prioritize the problem. You had perfectly used the ORDER BY clause to solve the REGION database problems and provide accurate results as per the question asked. ✅

TIPS

The SQL ORDER BY clause is used to sort the data in ascending or descending order, based on one or more columns. Some databases sort the query results in ascending order by default.

✓ `GROUP BY` **clauses aggregate results by chosen categorical variables**

> Awesome! GROUP BY is important when you are synthesizing information and comes up very often in real-world applications. Great job in mastering it

TIPS

The GROUP BY statement in SQL is used to arrange identical data into groups with the help of some functions. i.e if a particular column has the same values in different rows then it will arrange these rows in a group.

✓ **Queries make use of operators such as =, < and/or > to qualify** `WHERE` **clauses and** `JOIN` **statements, as well as conditions AND and OR to link conditional clauses.**

> Good job! Boolean operators are used when slicing and dicing the data to solve a specific problem at hand.

TIPS

Operators are the foundation of any programming language. We can define operators as symbols that help us to perform specific mathematical and logical computations on operands. In other words, we can say that an operator operates the operands. SQL operators have three different categories.

- Arithmetic operator
- Comparison operator
- Logical operator

Windows Functions

✓ **Queries make use of Windows Functions such as SUM, COUNT, ROUND and/or ABS as needed to perform the appropriate calculation in order to answer the questions posed.**

> Awesome work with creating a window function. Window functions are tricky and knowing the appropriate use case for them is the hardest part. They are very similar to using aggregate functions but retain the number of rows in the output.

TIPS

A window function is, simply put, a function that performs calculations across a set of table rows. The name comes from the fact that the set of rows is called a window or window frame.

Join Command

✓ **Queries include the appropriate form of Join (Inner, Left, Right, Outer) clause to ensure that no necessary rows are left out.**

> Though you correctly used JOIN in your queries, you didn't specify the kind of JOIN (INNER/LEFT/RIGHT/OUTER) in the queries. It is good practice to use the appropriate type of Join.

TIPS

Make it a part of you to always indicate the appropriate type of join in all your queries.

There are mainly four types of joins that you need to understand. They are:

- INNER JOIN
- FULL JOIN
- LEFT JOIN
- RIGHT JOIN

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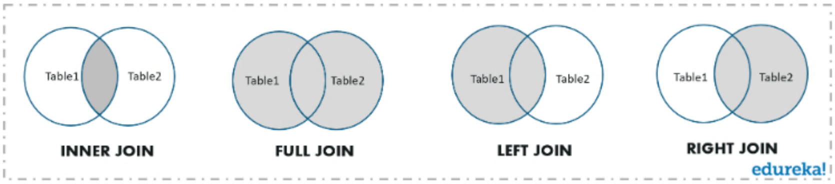
YOU CAN REFER TO THE BELOW IMAGE.



✓ **Queries include Join clauses that match appropriate columns together using the ON command and the appropriate Boolean operator.**

✓ **The student creates a query that joins a table to itself in order to compare values in two different rows.**

> You could make use of a SELF JOIN for question 1c with the solution below
>
> ```
> SELECT a.country_name, a.forest_area_sqkm-b.forest_area_sqkm forest_loss
> FROM forest_area a
> JOIN forest_area b
> ON a.country_name=b.country_name
> WHERE b.year=2016 AND a.year=1990
>     AND a.country_name='World'
> ```

A self-join is a query that joins a table to itself in order to compare values in two different rows. For example, you could join the forestation VIEW you created to itself like this below

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TO LEARN MORE ABOUT SELF JOINS, YOU SHOULD REFER TO THE LINK BELOW

- What Is a Self Join in SQL? An Explanation With Seven Examples

Case Command

✓ **The query the student writes for question 3(c) includes a `CASE` statement that addresses the question.**

> Really impressive! CASE WHEN is an advanced SQL topic. It's typically used when creating a column based on an existing column's value. Great work mastering this advanced topic!

TIPS

The CASE statement is SQL's way of handling if/then logic. The CASE statement is followed by at least one pair of WHEN and THEN statements—SQL's equivalent of IF/THEN in Excel.

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REFER TO THE BELOW TO LEARN MORE ABOUT THE CASE STATEMENT

- The SQL CASE statement

Report Formatting

✓ **All five elements of the rubric are present in the report.**

1. **GLOBAL SITUATION**
2. **REGIONAL OUTLOOK**
3. **COUNTRY-LEVEL DETAIL**
4. **RECOMMENDATIONS**
5. **APPENDIX: SQL queries used**

> Wonderful work! You have completed all parts of the project, covering basic and advanced SQL concepts.

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THE FOLLOWING ARE ALL INCLUDED IN THE REPORT

- GLOBAL SITUATION ✅
- REGIONAL OUTLOOK ✅
- COUNTRY-LEVEL DETAIL ✅
- RECOMMENDATIONS ✅
- APPENDIX: SQL queries used ✅

✓

- **All queries captured in the Appendix follow SQL formatting guidelines, including those for indentation, capitalization.**
- **All queries are properly formatted using best practices syntax**
- **All queries run without errors**

> It is also good practice that you properly format your code with an appropriate capitalization of the SQL clauses (SELECT, FROM, WHERE, CASE, JOIN, GROUP BY, etc), and proper indentations.

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