**ONTARIO AGRI-FOOD TRADE BY REGION**

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INFO8076: SQL and Data Analysis

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**Goal of the Project**

The goal of this project is to analyze Ontario's Agri-food trade data for the years 2009-2022. The project aims to gain insights into trade balances, regional comparisons, and trends in exports and imports. We want to understand which regions are net importers and exporters and observe how trade balances change over time.

**Database Generation :-**

Based on the given dataset, we can create a database with tables for each of the sectors:

Here are the tables we'll create:

* Exports table to store export data.
* Imports table to store import data.
* Regions table to store region information.
* Years table to store year information.

We'll establish relationships between these tables as needed. Let's proceed with creating the database and defining the tables.

**Below are the SQL statements to create these tables:-**

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**Below are the tables generated :-**

**EXPORT TABLE:**



**IMPORT TABLE:**

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**REGION TABLE:**



**YEAR TABLE:**



**Relational Schema for the Database:-**

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**Inserting data into tables created :-**

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**Create views for end users**

1. Top Importing Regions View:

Rationale: This view displays the top importing regions over the years. It helps users identify which regions have the highest import volumes.

SQL:

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2.Yearly Import Growth View:

Rationale: This view shows the annual growth rate of imports for each region. Users can identify trends and regions with the highest import growth.

SQL:

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3.Trade Balance View:

Rationale: This view calculates the trade balance (exports - imports) for each region. Users can see which regions have a trade surplus or deficit.

SQL:

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A table of numbers with numbers

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4.Trade Overview View:

Rationale: This view provides a summarized view of total exports, imports, and trade balance for all regions over the years.

SQL:

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**SQL Queries Application on Database :-**

1. Select all data for a specific region (e.g., 'United States') from the 'Exports' table:

SQL Code :



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1. Find the total exports for each year:

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1. Calculate the average imports for each region:-

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1. Amount between 5000 to 7000 in exports table:

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1. Combine data from 'Exports' and 'Imports' tables to find the trade deficit for each region:

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1. Calculate the percentage change in exports for each year: Query to find the year with the highest GDP in each sector using the RANK() window function:

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7.Find the year with the highest trade balance:

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8.Use a subquery to find regions with a trade balance greater than 5000:

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9.Use the CASE statement to categorize regions into import/export groups:

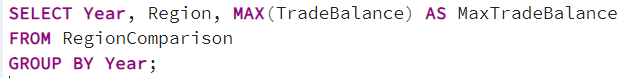
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10.Find the region with the highest trade balance for each year:



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