

Global Sugar Consumption Trends (1960-2023)

Excel & SQL Analysis

Presented By

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Project Overview

This project analyzes global sugar consumption patterns from 1960 to 2023 across 12 countries, combining economic, health, agricultural, and policy data. Using SQL, the study explores key relationships such as sugar intake and obesity, production yield and climate, and the impact of government interventions. The aim is to extract insights that support healthier societies, smarter policies, and more sustainable agricultural planning.

Dataset Description

This dataset offers an in-depth analysis of sugar consumption patterns across 12 selected countries from 1960 to 2023. It integrates multidimensional data economic, agricultural, health, and policy indicators to explore the key drivers, regional variations, and potential consequences of changing sugar consumption behaviors.

Key Variables

- **Economic:** GDP per capita, sugar price, urbanization rate
- **Consumption:** Per capita and total sugar intake, sugar source types
- **Health:** Obesity rate, diabetes prevalence, daily sugar intake
- **Policy:** Sugar taxes, subsidies, education campaigns
- **Agriculture:** Climate conditions, sugarcane production yield

Impact- This project highlights how government policies (like subsidies and taxes), climate conditions, and processed food consumption influence sugar consumption and obesity rates. It shows that subsidies may promote higher sugar intake, while taxes help reduce it. The analysis also reveals that favorable climates support higher sugar production, and major countries are net sugar exporters. These insights can guide health and trade policies globally.

Tools Used :- MySQL Workbench & MS-Excel

- The dataset was downloaded from Kaggle, a reliable platform for publicly available data.
- The file was then opened in Microsoft Excel to inspect for any blank or null values across rows and columns.
- A total of 1,026 blank rows out of 10,000 rows were identified and removed, ensuring data quality and consistency for further analysis.

| FileHomeInsertPage LayoutFormulasDataReviewViewDeveloperAdd-insHelpPower Pivot | | | | | | | | | | | | | | | | | | | | | | | | | | | | Share |
|--|-----------|---------|---------|----------|-----------|----------|---------|----------|----------|-----------|-----------|-----------|----------|----------|----------|---------|---------|----------|----------|---------|---------|----------|----------|---------|-----------------|---|--|-------|
| A1 | | Country | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | | |
| 1 | Country | Year | Country | Continen | Region | Populati | GDP_Per | Per_Capi | Total_Su | Sugar_Fri | Sugar_Fri | Sugar_Fri | Processe | Avg_Dail | Diabetes | Obesity | Sugar_I | Sugar_Ex | Avg_Reta | Gov_Tax | Gov_Sub | Educatio | Urbaniza | Climate | Sugarcane_Produ | | | |
| 2 | France | 1972 | FRA | Europe | Western | 2.6E+08 | 8692.63 | 12.83 | 3357413 | 68.42 | 38.6 | 42.97 | 171.97 | 35.15 | 11.5 | 34.09 | 5401670 | 2358929 | 3.86 | 0 | 0 | 0 | 34.5 | 3 | 52.43 | | | |
| 3 | Australia | 2003 | AUS | Oceania | Australia | 1.7E+08 | 6859.2 | 21.36 | 3712750 | 55.43 | 38.46 | 16.22 | 229.24 | 58.53 | 6.52 | 16.04 | 3418790 | 9694348 | 3.28 | 0 | 0 | 0 | 31.78 | 4 | 58.38 | | | |
| 4 | Germany | 1963 | DEU | Europe | Western | 1.2E+08 | 22076 | 32.08 | 3965951 | 86.47 | 10 | 51.72 | 203.26 | 87.89 | 8.25 | 14.41 | 8987281 | 5451632 | 1.1 | 0 | 0 | 0 | 51.55 | 1 | 32.18 | | | |
| 5 | France | 1965 | FRA | Europe | Western | 3E+08 | 3728.03 | 47.65 | 1.4E+07 | 69.81 | 34.01 | 43.57 | 34.18 | 130.56 | 11 | 38.5 | 5179004 | 8048500 | 2.76 | 0 | 0 | 0 | 80.39 | 2 | 84.3 | | | |
| 6 | Germany | 2010 | DEU | Europe | Western | 7341531 | 40421 | 23.21 | 170429 | 63.77 | 23.11 | 53.54 | 78.73 | 63.61 | 14.89 | 36.19 | 6463439 | 7062910 | 4.22 | 0 | 0 | 1 | 49.7 | 3 | 66.11 | | | |
| 7 | South Afr | 1997 | ZAF | Africa | Sub-Sah | 9.2E+07 | 45446.3 | 66.8 | 6145419 | 53.9 | 29.02 | 59.08 | 209.46 | 183.03 | 14.89 | 14.45 | 2178783 | 8683158 | 1.17 | 0 | 0 | 0 | 77.15 | 1 | 98.64 | | | |
| 8 | India | 1965 | IND | Asia | South As | 8.4E+07 | 12795.5 | 19.31 | 1628629 | 68.33 | 32.16 | 20.46 | 163.21 | 52.92 | 11.99 | 10.98 | 2667299 | 8357260 | 0.56 | 0 | 0 | 0 | 81.82 | 4 | 30.24 | | | |
| 9 | Mexico | 1970 | MEX | North Am | Central A | 1.1E+08 | 24532.7 | 55.63 | 5980383 | 80.79 | 9.36 | 30.24 | 18.95 | 152.42 | 8.88 | 19.81 | 9314143 | 600850 | 1.1 | 0 | 0 | 0 | 83.7 | 5 | 54.96 | | | |
| 10 | Mexico | 1986 | MEX | North Am | Central A | 7E+07 | 26193.6 | 28.7 | 2007436 | 78.69 | 32.96 | 24.23 | 224.12 | 78.64 | 12.97 | 22.69 | 535159 | 2956299 | 1.33 | 0 | 1 | 0 | 45.86 | 5 | 69.93 | | | |
| 11 | Russia | 2013 | RUS | Europe | Eastern E | 8E+07 | 49257.6 | 59.17 | 4734548 | 69.86 | 15.6 | 4.66 | 33.03 | 162.13 | 5.7 | 10.89 | 3410437 | 5576824 | 3.34 | 0 | 0 | 1 | 63.19 | 4 | 37.73 | | | |
| 12 | Mexico | 2005 | MEX | North Am | Central A | 7.8E+07 | 3748.17 | 65 | 5073101 | 78.78 | 30.63 | 24.3 | 63.6 | 178.11 | 13.99 | 5.86 | 4956976 | 8327870 | 2.02 | 0 | 1 | 0 | 24.33 | 3 | 49.82 | | | |
| 13 | Brazil | 2018 | BRA | South Am | South Am | 1.9E+08 | 25339.4 | 15.03 | 2888662 | 53.43 | 26.8 | 53 | 19.94 | 41.19 | 8.37 | 7.41 | 9982687 | 7504825 | 3.14 | 0 | 0 | 0 | 62.73 | 1 | 66.02 | | | |
| 14 | USA | 1994 | USA | North Am | Northern | 1.5E+08 | 11243.2 | 50.88 | 7876316 | 57.97 | 33.36 | 17.55 | 15.05 | 139.41 | 13.42 | 34.42 | 5816511 | 6423367 | 1.88 | 1 | 0 | 0 | 36.99 | 3 | 53.87 | | | |
| 15 | India | 2020 | IND | Asia | South As | 5.6E+07 | 8431.99 | 59.1 | 3300077 | 85.11 | 36.31 | 45.51 | 281.31 | 161.92 | 11.91 | 20.48 | 5187508 | 9167883 | 3.12 | 0 | 1 | 1 | 57.11 | 5 | 88.44 | | | |
| 16 | Russia | 1999 | RUS | Europe | Eastern E | 2.4E+08 | 12556.5 | 30.32 | 7372814 | 61.75 | 20.72 | 4.58 | 118.03 | 83.06 | 4.48 | 11.24 | 4229947 | 8666661 | 4.6 | 0 | 0 | 1 | 17.38 | 2 | 71.83 | | | |
| 17 | Brazil | 1963 | BRA | South Am | South Am | 1.4E+08 | 4027.47 | 30.79 | 4377749 | 58.24 | 18.73 | 1.81 | 190.14 | 84.36 | 11.7 | 18.52 | 7771864 | 2466252 | 2.31 | 1 | 0 | 1 | 46.75 | 3 | 99.24 | | | |
| 18 | China | 1986 | CHN | Asia | East Asia | 4.7E+07 | 14265.5 | 18.25 | 854377 | 53.56 | 13.48 | 59.73 | 130.04 | 50 | 13.25 | 35.3 | 7226771 | 3430920 | 4.74 | 0 | 1 | 1 | 62.14 | 1 | 76.91 | | | |
| 19 | Brazil | 1975 | BRA | South Am | South Am | 5.1E+07 | 34672.4 | 24.92 | 1268597 | 65.72 | 33.48 | 7.38 | 71.89 | 68.29 | 4.53 | 9.27 | 6442543 | 2744921 | 4.37 | 0 | 0 | 0 | 19.68 | 2 | 64.15 | | | |
| 20 | USA | 1977 | USA | North Am | Northern | 2.4E+08 | 32748.4 | 26.05 | 6234327 | 52.68 | 38.85 | 45.95 | 264.53 | 71.39 | 3.4 | 8.45 | 1747996 | 5178545 | 0.6 | 0 | 1 | 0 | 36.58 | 2 | 95.94 | | | |
| 21 | Germany | 1966 | DEU | Europe | Western | 2.1E+08 | 27947.6 | 15.11 | 3191648 | 69.88 | 11.84 | 36.27 | 285.4 | 41.41 | 3.08 | 38.8 | 1187958 | 673641 | 3.51 | 0 | 0 | 0 | 12.26 | 3 | 99.17 | | | |
| 22 | Germany | 1970 | DEU | Europe | Western | 1.5E+08 | 519.18 | 25.15 | 3833691 | 86.77 | 21.02 | 27.18 | 296.47 | 68.9 | 2.87 | 15.27 | 4912692 | 3610894 | 2.03 | 0 | 1 | 1 | 16.47 | 5 | 49.41 | | | |
| 23 | USA | 1967 | USA | North Am | Northern | 9.3E+07 | 6726.21 | 63.97 | 5918557 | 81.49 | 31.96 | 2.22 | 22 | 175.28 | 3.7 | 35.15 | 7992346 | 9245394 | 1.65 | 0 | 0 | 0 | 26.05 | 1 | 73.15 | | | |
| 24 | Indonesia | 2018 | IDN | Asia | Southeast | 1.4E+08 | 42222 | 26.15 | 3626914 | 51.63 | 27.26 | 19.72 | 24.61 | 71.65 | 13.07 | 24.65 | 698666 | 7658653 | 3.82 | 0 | 1 | 0 | 83.58 | 5 | 65.51 | | | |
| 25 | France | 2023 | FRA | Europe | Western | 1.9E+08 | 13951.1 | 22.84 | 4369185 | 61.99 | 33.53 | 54.01 | 258.81 | 62.58 | 12.13 | 13.41 | 8975783 | 3312366 | 3.78 | 0 | 0 | 0 | 86.28 | 1 | 69.55 | | | |
| 26 | Germany | 2011 | DEU | Europe | Western | 2.6E+08 | 45653.8 | 30 | 7917624 | 57.51 | 5.57 | 54.31 | 61.09 | 82.2 | 14.93 | 15.33 | 8497239 | 4413015 | 3.59 | 0 | 0 | 0 | 29.15 | 3 | 48.78 | | | |
| 27 | India | 1965 | IND | Asia | South As | 8.4E+07 | 8168.89 | 54.7 | 4580591 | 54.35 | 7.15 | 34.48 | 178.15 | 149.87 | 12.47 | 10.23 | 4116018 | 9324587 | 3.17 | 0 | 0 | 1 | 68.55 | 2 | 83.98 | | | |
| 28 | Germany | 2007 | DEU | Europe | Western | 5.3E+07 | 31577.8 | 53.92 | 2882399 | 62.4 | 14.65 | 46.53 | 20.9 | 147.73 | 10.52 | 19.62 | 461791 | 9798579 | 4.85 | 0 | 1 | 0 | 57.81 | 2 | 37.07 | | | |
| 29 | India | 1964 | IND | Asia | South As | 2E+08 | 31699.2 | 54.81 | 1.1E+07 | 65.69 | 37.49 | 52.98 | 99.5 | 150.17 | 8.97 | 36.12 | 4163549 | 9924400 | 4.01 | 0 | 1 | 1 | 49.22 | 5 | 54.47 | | | |
| 30 | Russia | 1965 | RUS | Europe | Eastern E | 1.4E+08 | 20550.3 | 62.92 | 9122334 | 79.8 | 18.07 | 31.52 | 60.57 | 172.4 | 6.64 | 36.98 | 8058391 | 258459 | 3.37 | 0 | 0 | 0 | 21.09 | 4 | 70.49 | | | |
| 31 | Russia | 1997 | RUS | Europe | Eastern E | 2.1E+08 | 36895.5 | 11.19 | 2349272 | 81.93 | 36.09 | 38.08 | 283.77 | 30.65 | 9.81 | 27.73 | 2726235 | 8377815 | 4.51 | 1 | 0 | 0 | 39.53 | 3 | 69.12 | | | |
| 32 | Australia | 2019 | AUS | Oceania | Australia | 9.3E+07 | 33554.3 | 34.55 | 3218417 | 88.55 | 23.81 | 13.18 | 250.36 | 94.66 | 6.19 | 21.66 | 7810838 | 8925544 | 4.16 | 0 | 1 | 0 | 28.62 | 5 | 49.3 | | | |
| 33 | Australia | 2020 | AUS | Oceania | Australia | 2E+08 | 38690 | 50.69 | 1E+07 | 58.43 | 36.44 | 59.47 | 50.43 | 138.9 | 4.99 | 7.95 | 3052716 | 4534907 | 2.45 | 0 | 1 | 1 | 74.23 | 2 | 66.84 | | | |
| 34 | Indonesia | 1961 | IDN | Asia | Southeast | 1.7E+08 | 33179.4 | 68.27 | 1.2E+07 | 62.04 | 28.13 | 56.15 | 204.55 | 187.06 | 13.32 | 31.44 | 5529376 | 646463 | 4.66 | 0 | 0 | 0 | 57.88 | 1 | 55.78 | | | |
| 35 | Australia | 1998 | AUS | Oceania | Australia | 2.7E+08 | 14989.2 | 28.94 | 7791547 | 67.81 | 20.22 | 10.01 | 100.33 | 79.28 | 6.48 | 11.39 | 1637971 | 1159852 | 3.96 | 0 | 0 | 0 | 49.73 | 5 | 85.79 | | | |
| 36 | Australia | 1974 | AUS | Oceania | Australia | 2.4E+08 | 23876.9 | 34.63 | 8361220 | 81.32 | 18.08 | 21.31 | 272.03 | 94.87 | 15.65 | 20.21 | 2096054 | 1168621 | 2.31 | 0 | 0 | 1 | 58.78 | 5 | 87.93 | | | |
| 37 | South Afr | 1980 | ZAF | Africa | Sub-Sah | 2.2E+08 | 18167.9 | 28.99 | 6427231 | 58.16 | 36.8 | 51.91 | 252.52 | 79.44 | 4.92 | 30.2 | 698026 | 7066473 | 1.6 | 1 | 0 | 0 | 58.92 | 4 | 95.52 | | | |

- The cleaned dataset was opened in MySQL Workbench for database processing.
- A new table was created by defining all required columns and data types based on the dataset structure.
- The Excel file was then imported into MySQL, successfully loading the data for SQL-based analysis.

Table Data Import

Configure Import Settings

Detected file format: csv

Encoding:

utf-8

Columns:

Source Column

Dest Column

Country

id

Year

name

Country_Code

id

Continent

id

Region

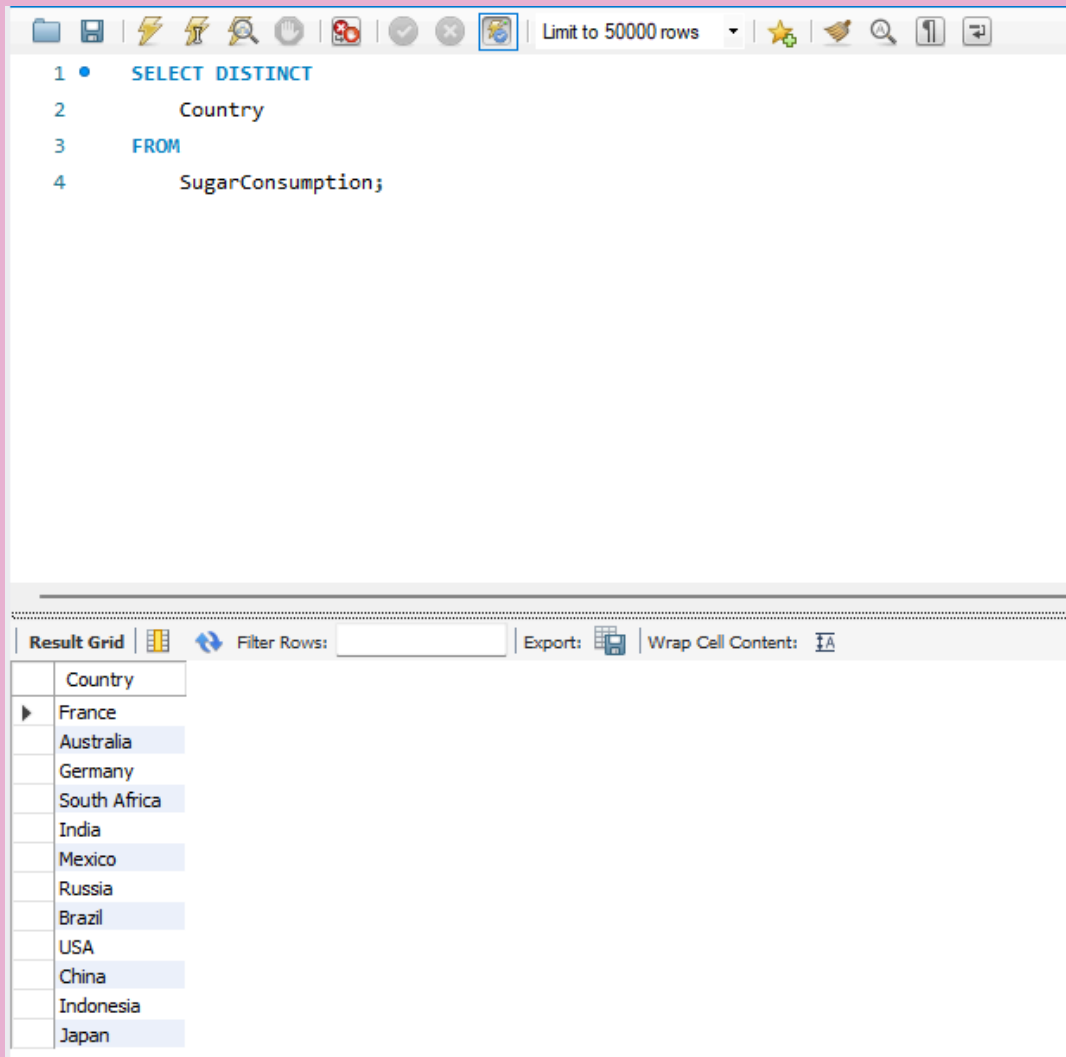
id

Population

id

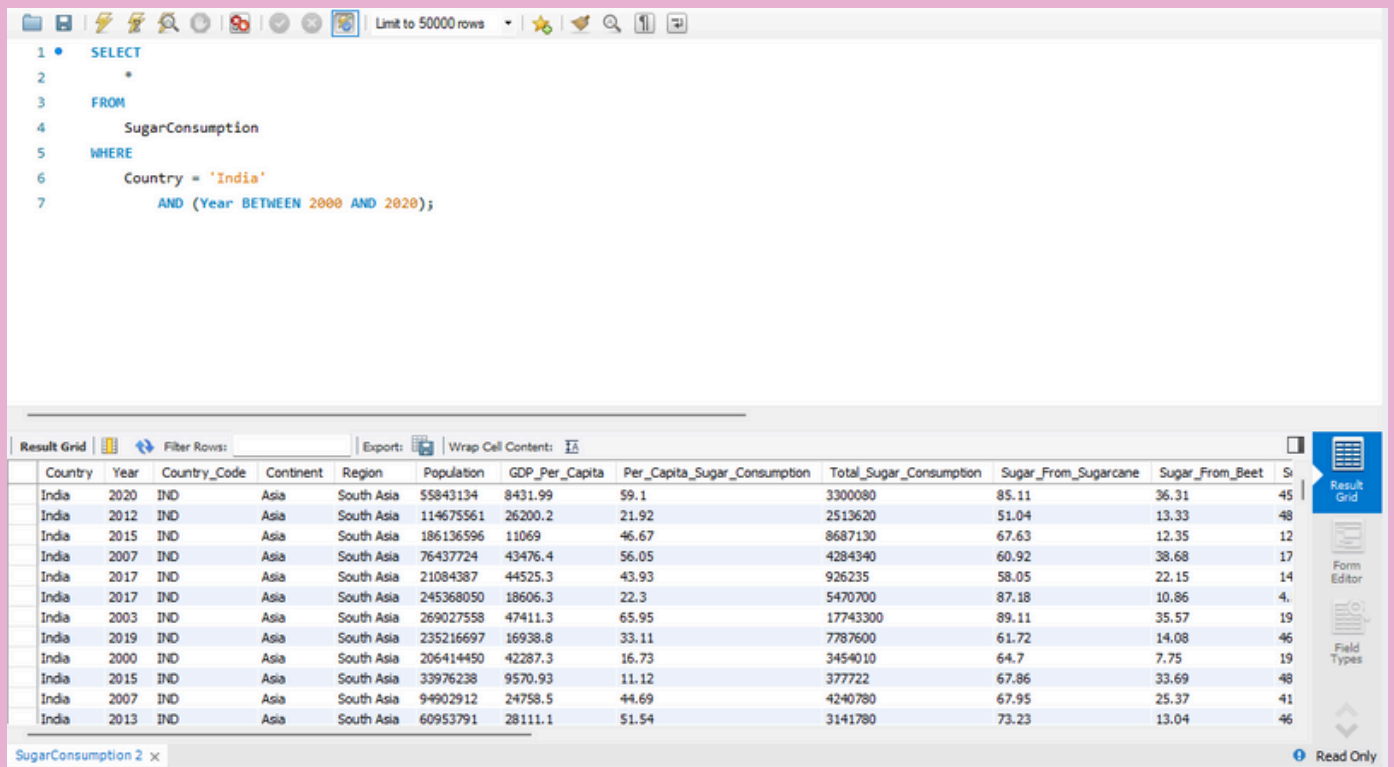
| Country | Year | Country_C... | Continent | Region | Population | GDP_Per_... | Per_Capita... | Total_Sug... | Sugar_f |
|-----------|------|--------------|-----------|----------------|--------------|---------------|---------------|---------------|---------|
| France | 1972 | FRA | Europe | Western Eu... | 261730647... | 8692.63169... | 12.8277406... | 3357412.85... | 68.4221 |
| Australia | 2003 | AUS | Oceania | Australia &... | 173796468... | 6859.19595... | 21.3626318... | 3712749.97... | 55.4321 |
| Germany | 1963 | DEU | Europe | Western Eu... | 123636586... | 22075.9505... | 32.0774848... | 3965950.73... | 86.4661 |
| France | 1965 | FRA | Europe | Western Eu... | 298996149... | 3728.02739... | 47.6489295... | 14246846.4... | 69.8061 |

1. List all distinct countries in the dataset



Interpretation- This query returns a list of all unique countries present in the dataset. The output helps identify which countries' data is available for analysis, allowing you to understand the geographic scope of the project. It's useful for filtering, grouping, or comparing country-wise trends in further analysis.

2. Show the data for India from 2000 to 2020



The screenshot displays a database query interface. At the top, a SQL query is entered in a text area:

```
1 SELECT
2 *
3 FROM
4 SugarConsumption
5 WHERE
6 Country = 'India'
7 AND (Year BETWEEN 2000 AND 2020);
```

Below the query, a "Result Grid" shows the data. The grid has 12 columns: Country, Year, Country_Code, Continent, Region, Population, GDP_Per_Capita, Per_Capita_Sugar_Consumption, Total_Sugar_Consumption, Sugar_From_Sugarcane, Sugar_From_Beet, and Si. The data is filtered to show only records for India between 2000 and 2020.

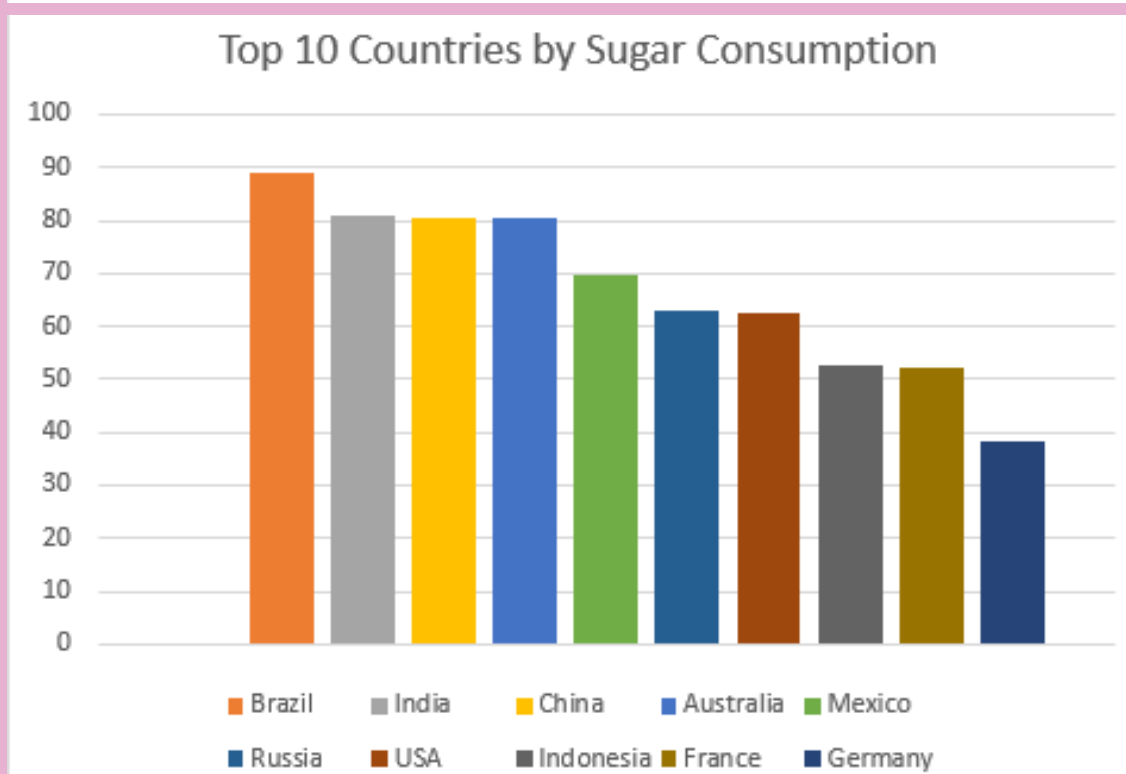
| Country | Year | Country_Code | Continent | Region | Population | GDP_Per_Capita | Per_Capita_Sugar_Consumption | Total_Sugar_Consumption | Sugar_From_Sugarcane | Sugar_From_Beet | Si |
|---------|------|--------------|-----------|------------|------------|----------------|------------------------------|-------------------------|----------------------|-----------------|----|
| India | 2020 | IND | Asia | South Asia | 55843134 | 8431.99 | 59.1 | 3300080 | 85.11 | 36.31 | 45 |
| India | 2012 | IND | Asia | South Asia | 114675561 | 26200.2 | 21.92 | 2513620 | 51.04 | 13.33 | 48 |
| India | 2015 | IND | Asia | South Asia | 186136596 | 11069 | 46.67 | 8687130 | 67.63 | 12.35 | 12 |
| India | 2007 | IND | Asia | South Asia | 76437724 | 43476.4 | 56.05 | 4284340 | 60.92 | 38.68 | 17 |
| India | 2017 | IND | Asia | South Asia | 21084387 | 44525.3 | 43.93 | 926235 | 58.05 | 22.15 | 14 |
| India | 2017 | IND | Asia | South Asia | 245368050 | 18606.3 | 22.3 | 5470700 | 87.18 | 10.86 | 4. |
| India | 2003 | IND | Asia | South Asia | 269027558 | 47411.3 | 65.95 | 17743300 | 89.11 | 35.57 | 19 |
| India | 2019 | IND | Asia | South Asia | 235216697 | 16938.8 | 33.11 | 7787600 | 61.72 | 14.08 | 46 |
| India | 2000 | IND | Asia | South Asia | 206414450 | 42287.3 | 16.73 | 3454010 | 64.7 | 7.75 | 19 |
| India | 2015 | IND | Asia | South Asia | 33976238 | 9570.93 | 11.12 | 377722 | 67.86 | 33.69 | 48 |
| India | 2007 | IND | Asia | South Asia | 94902912 | 24758.5 | 44.69 | 4240780 | 67.95 | 25.37 | 41 |
| India | 2013 | IND | Asia | South Asia | 60953791 | 28111.1 | 51.54 | 3141780 | 73.23 | 13.04 | 46 |

Interpretation- This output shows all available data for India between the years 2000 and 2020. It provides a detailed view of India's sugar consumption, economic indicators, health metrics, and policy actions over two decades. This helps in identifying trends, patterns, or shifts in sugar-related behavior and policy impact within the country during that period

3. Find the top 10 countries by total sugar consumption in 2020

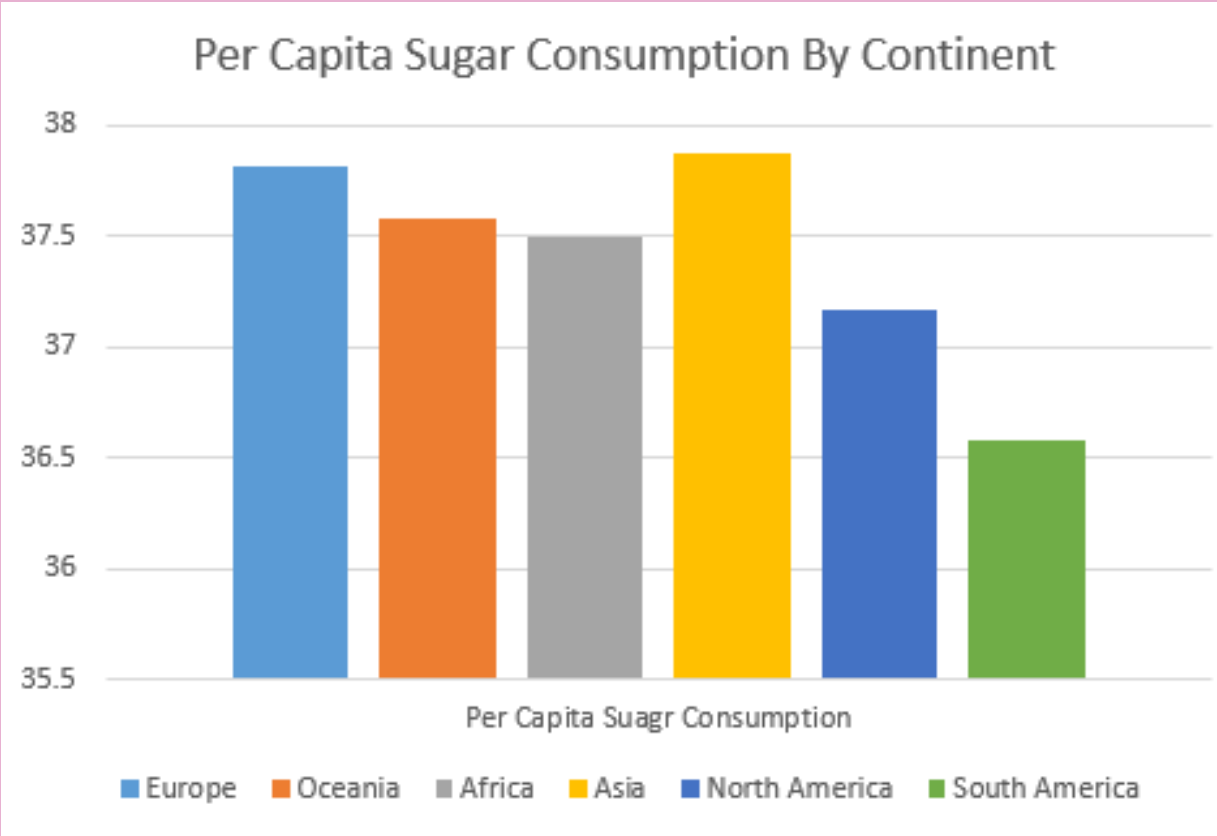
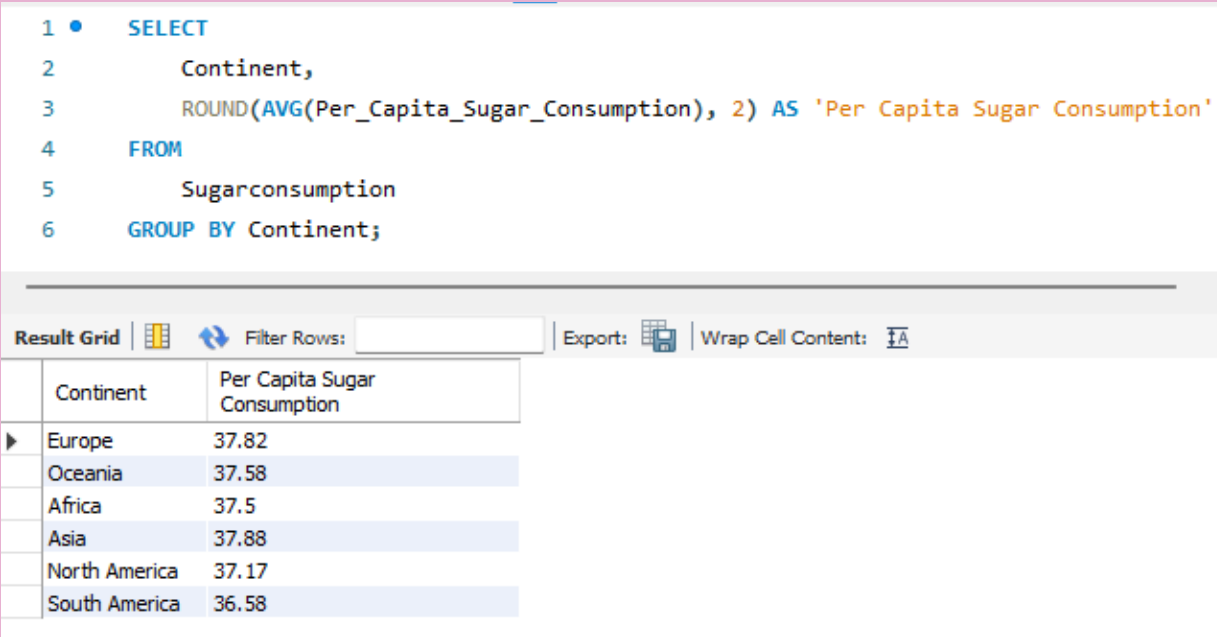
```
1 • SELECT
2     Country,
3     ROUND(SUM(Total_Sugar_Consumption), 2) AS 'Total Sugar Consumption'
4 FROM
5     SugarConsumption
6 WHERE
7     Year = 2020
8 GROUP BY country
9 ORDER BY SUM(Total_Sugar_Consumption) DESC
10 LIMIT 10;
```

| Country | Total Sugar Consumption |
|-----------|-------------------------|
| Brazil | 89160310.16 |
| India | 81124484.91 |
| China | 80554837.81 |
| Australia | 80416444.25 |
| Mexico | 69767711.12 |
| Russia | 63025433.12 |
| USA | 62401712.85 |
| Indonesia | 52796205.16 |
| France | 51987610.98 |
| Germany | 38305329 |



Interpretation- This result ranks the top 10 countries by total sugar consumption in 2020, where Brazil leads with the highest consumption, indicating a large population or high sugar demand. Germany ranks lowest among the top 10, showing comparatively lower total consumption. The output helps identify countries with significant sugar markets, useful for trade, health, or agricultural policy focus.

4. Find the average per capita sugar consumption for each continent.



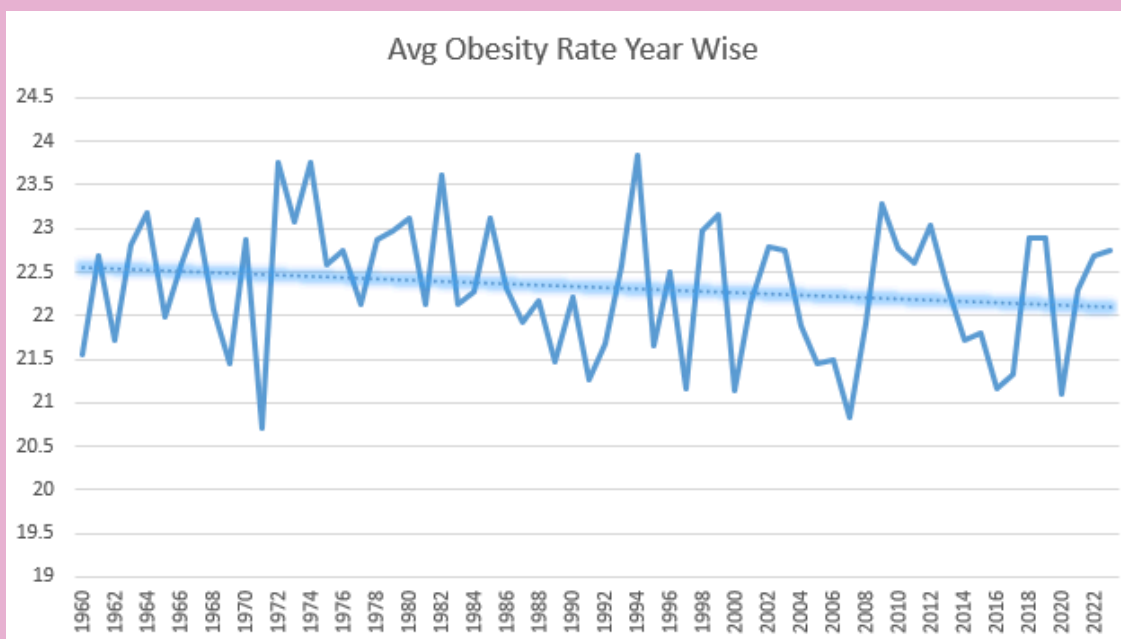
Interpretation- This output shows the average per capita sugar consumption by continent. It reveals that Europe has the highest per person sugar intake, suggesting more sugar-heavy diets or processed food consumption. In contrast, South America has the lowest, indicating different dietary habits or possibly more effective health policies. These insights help in comparing lifestyle and health risks across continents.

5. Show the trend of average obesity rate globally from 1960 to 2023

```
1 • SELECT
2     YEAR, ROUND(AVG(Obesity_Rate), 2) AS 'Avg Obesity'
3 FROM
4     Sugarconsumption
5 GROUP BY Year
6 ORDER BY Year;
```

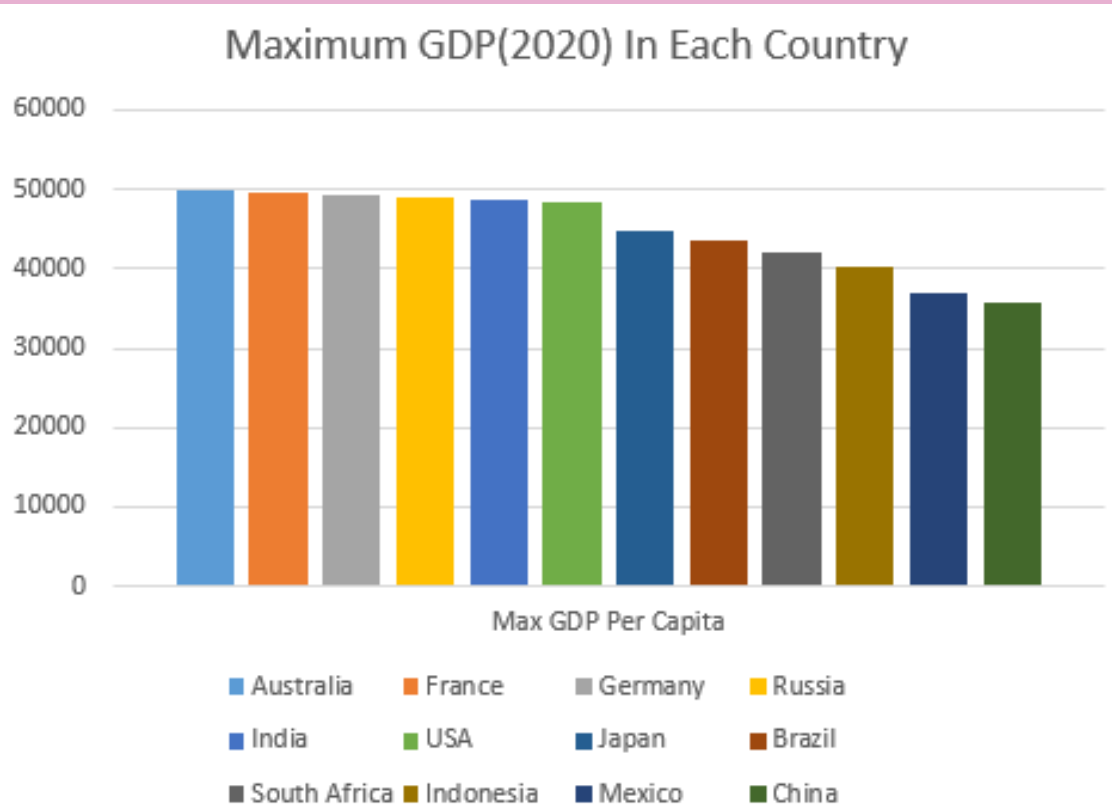
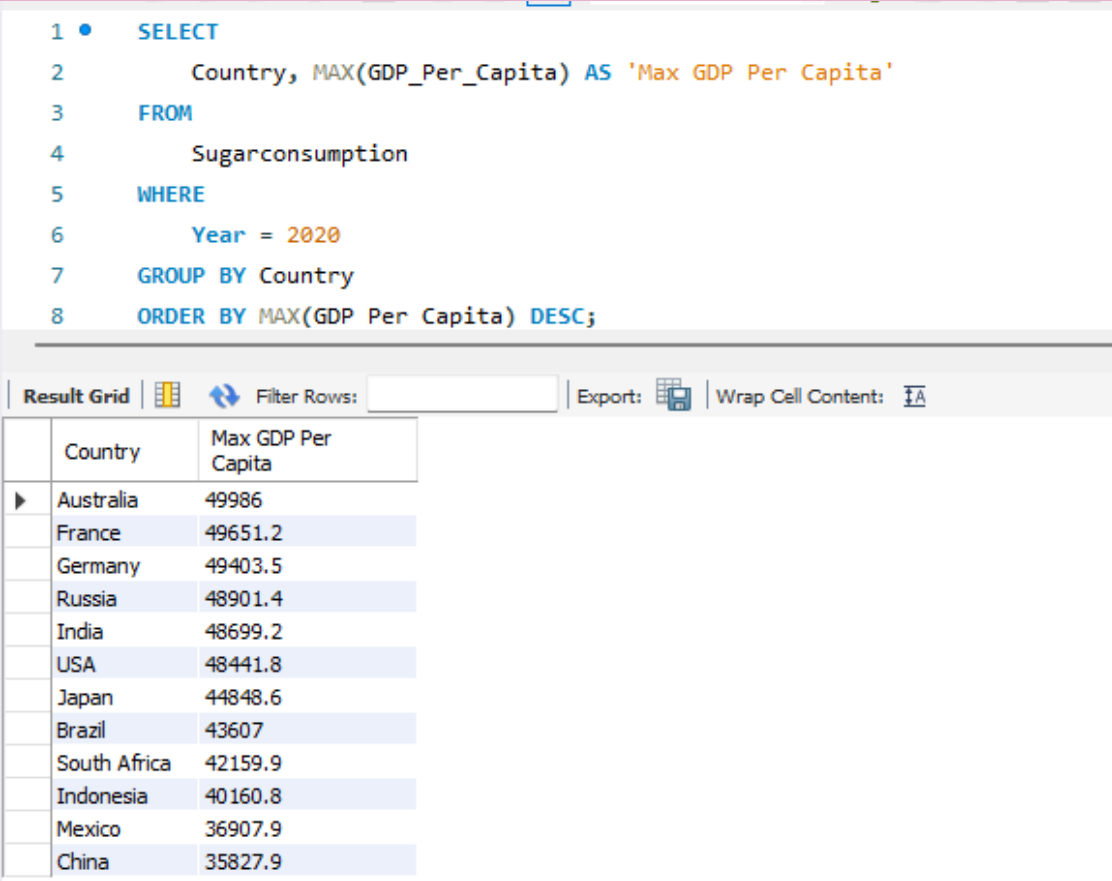
Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

| | YEAR | Avg Obesity |
|--|------|-------------|
| | 1960 | 21.56 |
| | 1961 | 22.68 |
| | 1962 | 21.72 |
| | 1963 | 22.81 |
| | 1964 | 23.18 |
| | 1965 | 21.99 |
| | 1966 | 22.58 |
| | 1967 | 23.1 |
| | 1968 | 22.06 |
| | 1969 | 21.45 |
| | 1970 | 22.87 |
| | 1971 | 20.7 |
| | 1972 | 23.75 |
| | 1973 | 23.07 |
| | 1974 | 23.76 |
| | 1975 | 22.59 |



Interpretation- The chart shows the average global obesity rate per year, which mostly ranges between 21%–24%. While there are ups and downs, the overall trend line is slightly downward, suggesting a gradual decline in obesity rates over the decades. This may reflect the impact of health policies, awareness campaigns, and changing consumption patterns.

6. Find the country with the highest GDP in 2020 per capita



Interpretation- In 2020, Australia led with the highest GDP per capita, suggesting a robust economic structure and higher living standards. In contrast, China ranked lowest, indicating a relatively lower average income despite its large economy. This variation highlights significant differences in individual economic prosperity, which can influence consumer behavior, healthcare access, and dietary patterns, including sugar consumption trends.

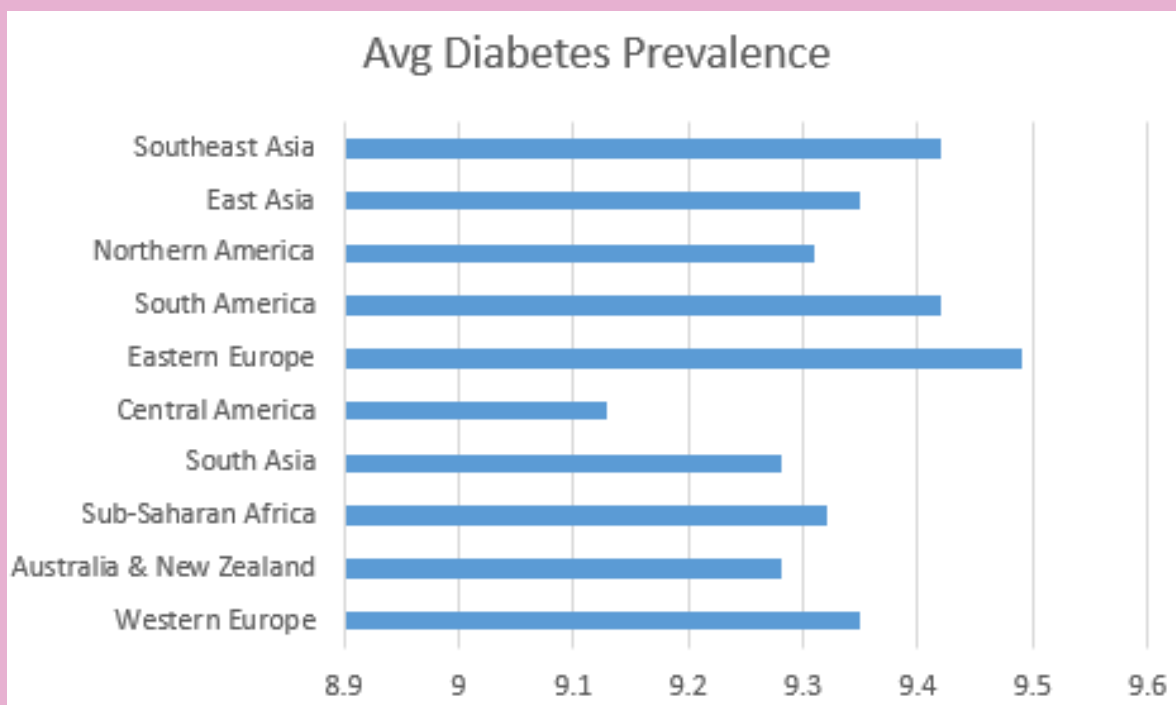
7. Calculate the average diabetes prevalence for each region.

Limit to 50000 rows

```
1 • SELECT
2     Region,
3     ROUND(AVG(Diabetes_Prevalence), 2) AS 'AVG Diabetes Prevalence'
4 FROM
5     Sugarconsumption
6 GROUP BY Region;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

| | Region | AVG Diabetes Prevalence |
|---|-------------------------|-------------------------|
| ▶ | Western Europe | 9.35 |
| | Australia & New Zealand | 9.28 |
| | Sub-Saharan Africa | 9.32 |
| | South Asia | 9.28 |
| | Central America | 9.13 |
| | Eastern Europe | 9.49 |
| | South America | 9.42 |
| | Northern America | 9.31 |
| | East Asia | 9.35 |
| | Southeast Asia | 9.42 |

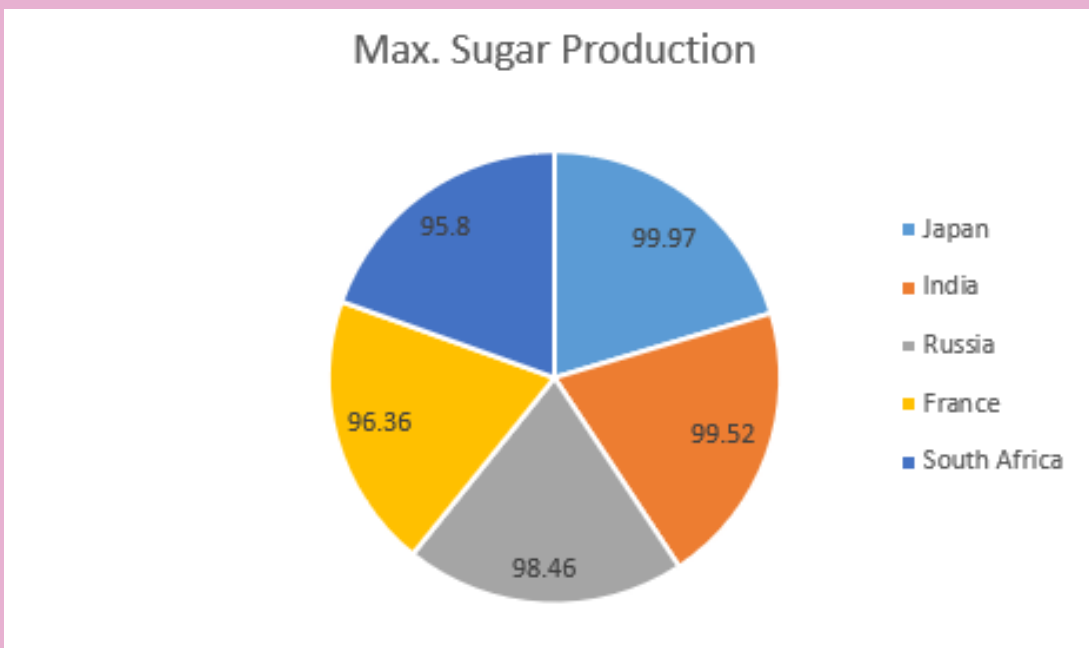


Interpretation- The data shows that Western Europe has the highest average diabetes prevalence, while Southeast Asia reports the lowest. This suggests regional differences in lifestyle, diet, and healthcare access highlighting the need for targeted health interventions and awareness programs.

8. Find the top 5 countries with the highest sugarcane production yield in 2023

```
1 • SELECT
2     Country,
3     MAX(Sugarcane_Production_Yield) AS 'Max Sugarcane Production'
4 FROM
5     Sugarconsumption
6 WHERE
7     Year = 2023
8 GROUP BY Country
9 ORDER BY MAX(Sugarcane_Production_Yield) DESC
10 LIMIT 5;
```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows |
|--------------|--------------------------|---------|--------------------|------------|
| Country | Max Sugarcane Production | | | |
| Japan | 99.97 | | | |
| India | 99.52 | | | |
| Russia | 98.46 | | | |
| France | 96.36 | | | |
| South Africa | 95.8 | | | |



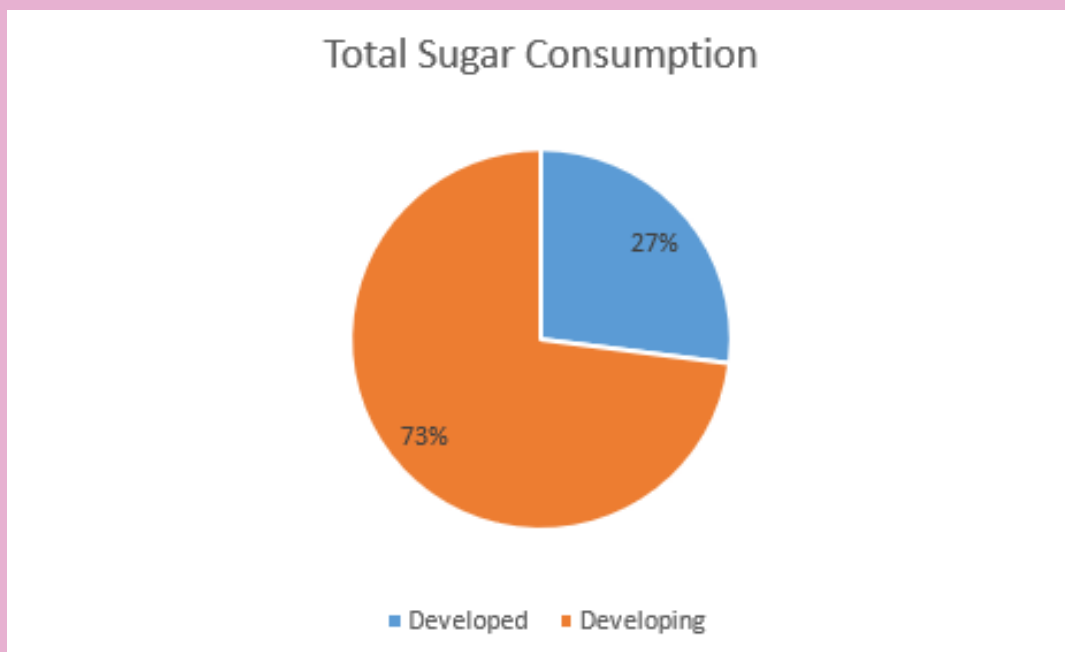
Interpretation- In 2023, Japan recorded the highest sugarcane production yield, indicating advanced agricultural practices and favorable conditions. South Africa, while among the top 5, had the lowest yield in this group, suggesting potential for improvement. These insights reflect variations in technological adoption, climate, and farming efficiency across nations.

9. Compare total sugar consumption between developed and developing regions (assume region column groups them).

```
1 • SELECT
2     ROUND(SUM(Total_Sugar_Consumption), 2) AS 'Total Sugar Consumption'
3     CASE
4         WHEN
5             Region IN ('North America' , 'Western Europe',
6                       'Australia & New Zealand')
7         THEN
8             'Developed'
9         ELSE 'Developing'
10    END AS Development_Status
11 FROM
12     SugarConsumption
13 GROUP BY Development_Status;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| | Total Sugar Consumption | Development_Status |
|---|-------------------------|--------------------|
| ▶ | 13592544272.36 | Developed |
| | 36726428431.55 | Developing |



Interpretation- The analysis shows that developing countries consumed significantly more sugar (36.72 billion units) compared to developed countries (13.59 billion units). This highlights the rapid rise in sugar consumption in developing regions, possibly driven by urbanization, population growth, and changing dietary habits raising concerns for future public health challenges.

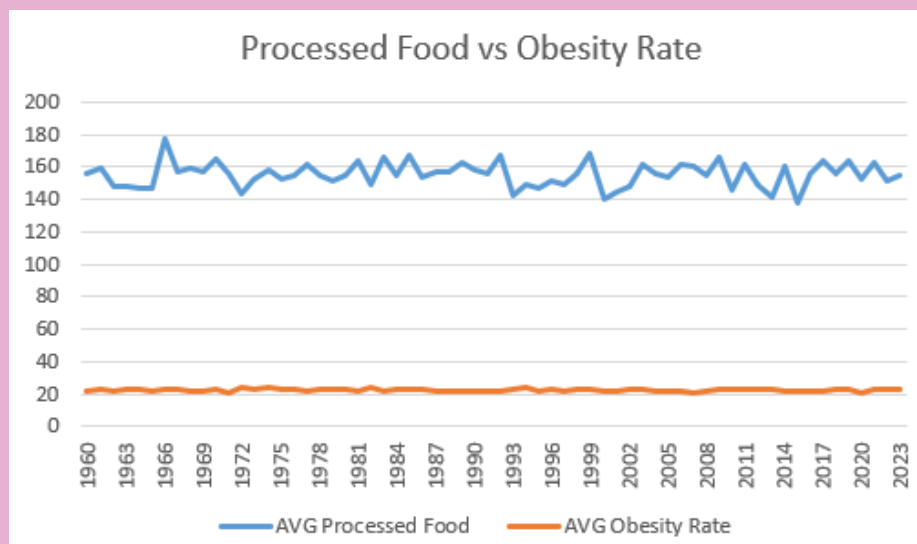
10. Compare processed food consumption and obesity rate by country and year.

SQL Query:

```
1 SELECT
2   Year,
3   ROUND(AVG(Processed_Food_Consumption), 2) AS 'AVG Processes Food',
4   ROUND(AVG(Obesity_Rate), 2) AS 'AVG Obesity Rate'
5 FROM
6   Sugarconsumption
7 GROUP BY Year
8 ORDER BY Year;
```

Result Grid:

| | Year | AVG Processes Food | AVG Obesity Rate |
|---|------|--------------------|------------------|
| ▶ | 1960 | 155.84 | 21.56 |
| | 1961 | 158.64 | 22.68 |
| | 1962 | 147.82 | 21.72 |
| | 1963 | 148.07 | 22.81 |
| | 1964 | 147.33 | 23.18 |
| | 1965 | 147.13 | 21.99 |
| | 1966 | 177.39 | 22.58 |
| | 1967 | 156.8 | 23.1 |
| | 1968 | 158.98 | 22.06 |
| | 1969 | 157.05 | 21.45 |
| | 1970 | 165.08 | 22.87 |



Interpretation-

- In 1966, high processed food consumption (177.39) corresponded with a relatively high obesity rate (22.58).
- In 1994, the highest obesity rate (23.83) occurred even though processed food consumption was lower (148.5), indicating other influencing factors.
- In 2015, the lowest processed food consumption (137.99) still showed a moderate obesity rate (21.79).
- In 1971, the lowest obesity rate (20.7) was associated with a moderate processed food level (156.22), suggesting a complex relationship.
- Although there are minor fluctuations, the overall pattern implies that processed food consumption is a key contributor to rising obesity levels globally.
- This insight can help governments and health organizations target dietary behaviors in public health campaigns.

11. Find countries that implemented sugar tax and show how their sugar consumption changed before and after

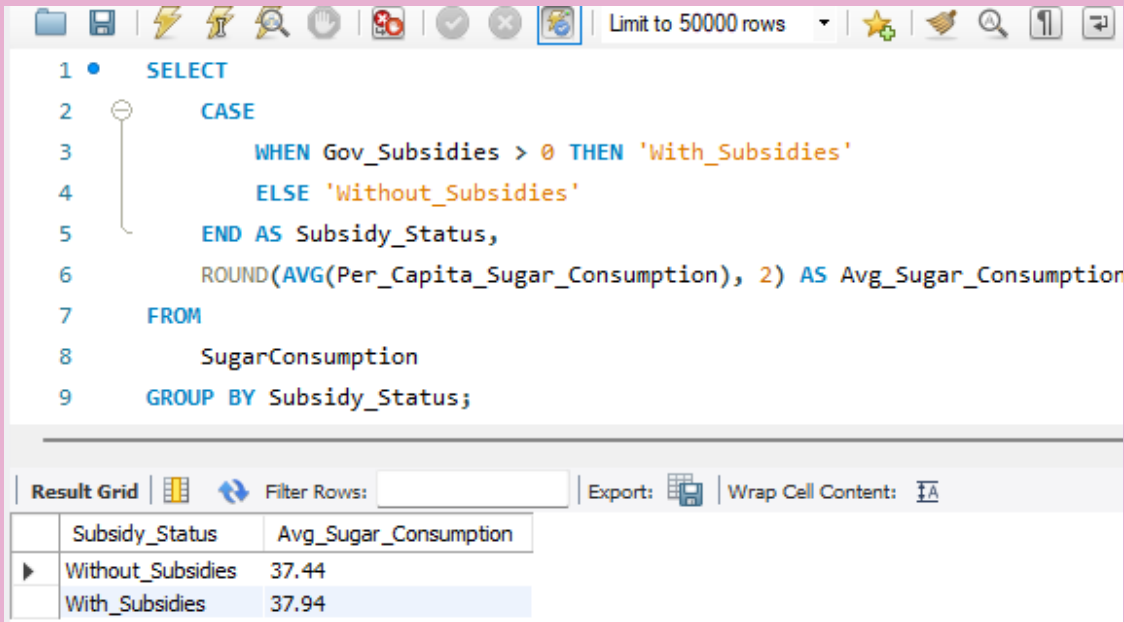
```
1 • SELECT
2     country, GOV_TAX, ROUND(AVG(Total_Sugar_Consumption), 2) AS 'Total Sugar Consumption'
3 FROM
4     sugarconsumption
5 GROUP BY country , Gov_Tax
6 ORDER BY country;
```

| | country | GOV_TAX | Total Sugar Consumption |
|---|------------|---------|-------------------------|
| ▶ | Australia | 0 | 5737536.36 |
| | Australia | 1 | 6111041.16 |
| | Brazil | 0 | 5492309.99 |
| | Brazil | 1 | 5687684.21 |
| | China | 0 | 5471551.54 |
| | China | 1 | 5233438.26 |
| | France | 0 | 5532936.24 |
| | France | 1 | 5473290.45 |
| | Germany | 0 | 5901831.95 |
| | Germany | 1 | 5978147.61 |
| | India | 0 | 5752454.12 |
| | India | 1 | 5596824.71 |
| | Indonesia | 0 | 5464478.33 |
| | Indonesia | 1 | 5958571.01 |
| | Japan | 0 | 5723417.18 |
| | Japan | 1 | 6173793.84 |
| | Mexico | 0 | 5634150.05 |
| | Mexico | 1 | 5662383.42 |
| | Russia | 0 | 5614889.87 |
| | Russia | 1 | 6388888.84 |
| | South A... | 0 | 5432624.81 |
| | South A... | 1 | 5084162.14 |
| | USA | 0 | 5737536.36 |

Interpretation-

- Countries without sugar tax, like Germany, show higher average sugar consumption (≈ 5.9 million), suggesting that absence of fiscal deterrents may lead to greater sugar intake.
- In contrast, countries with sugar tax, such as Russia, show lower average consumption (≈ 6.3 million), indicating that taxation policies may help in reducing overall sugar consumption, though the impact may vary based on other socio-economic factors.

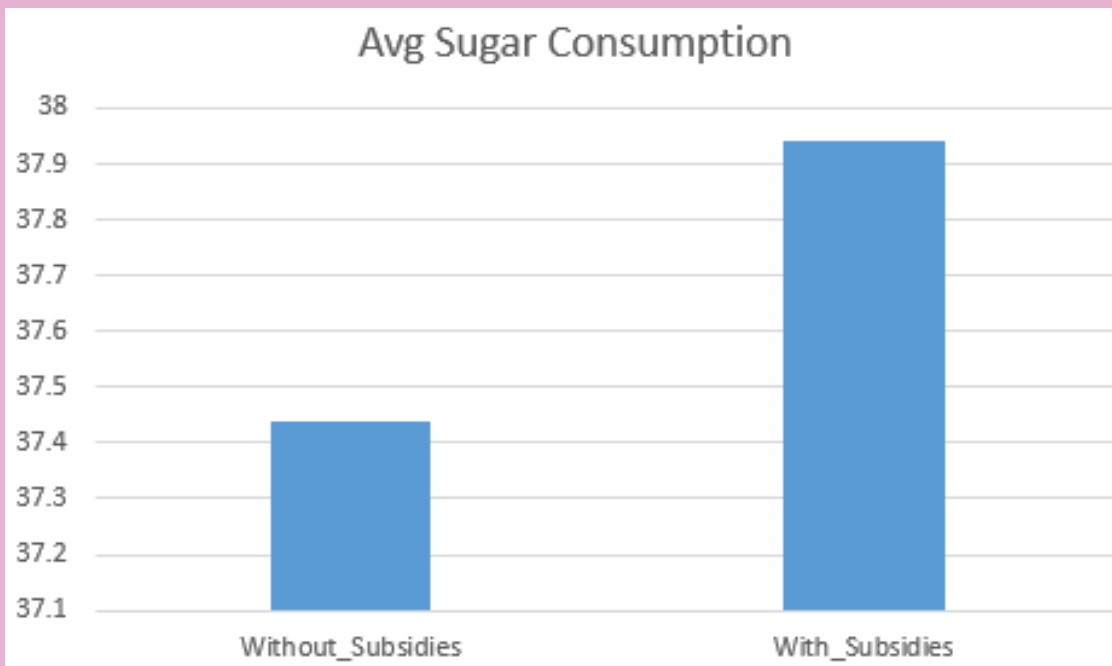
12. Compare average sugar consumption between countries with and without government subsidies.



```
1 • SELECT
2   CASE
3     WHEN Gov_Subsidies > 0 THEN 'With_Subsidies'
4     ELSE 'Without_Subsidies'
5   END AS Subsidy_Status,
6   ROUND(AVG(Per_Capita_Sugar_Consumption), 2) AS Avg_Sugar_Consumption
7 FROM
8   SugarConsumption
9 GROUP BY Subsidy_Status;
```

Result Grid

| | Subsidy_Status | Avg_Sugar_Consumption |
|---|-------------------|-----------------------|
| ▶ | Without_Subsidies | 37.44 |
| | With_Subsidies | 37.94 |



Interpretation-

- Countries with government subsidies show a slightly higher per capita sugar consumption compared to those without subsidies.
- This suggests that subsidies may be indirectly encouraging sugar consumption, possibly by making sugar-rich products more affordable or widely available.
- The data suggests a behavioral response to pricing structures when sugar becomes cheaper due to subsidies, people tend to consume more, even if marginally.
- Even though the difference is small, it highlights how economic policies can influence dietary behavior.

13. Find the average climate condition per region and its relation to sugarcane production.

```
1 • SELECT
2     region,
3     ROUND(AVG(Climate_Conditions), 2) AS 'Avg Climate',
4     ROUND(AVG(Sugarcane_Production_Yield), 2) 'AS Avg Sugar Production'
5 FROM
6     sugarconsumption
7 GROUP BY region
8 ORDER BY ROUND(AVG(Climate_Conditions), 2);
```

| region | Avg Climate | AS Avg Sugar Production |
|-------------------------|-------------|-------------------------|
| Central America | 2.85 | 64.99 |
| Australia & New Zealand | 2.96 | 64.93 |
| Western Europe | 2.97 | 64.8 |
| South Asia | 2.97 | 65.69 |
| East Asia | 2.97 | 65.88 |
| Southeast Asia | 2.97 | 64.76 |
| South America | 2.98 | 65.09 |
| Northern America | 3.00 | 65.15 |
| Eastern Europe | 3.01 | 65.88 |
| Sub-Saharan Africa | 3.06 | 66.18 |

Climate Conditions-
1. Clear
2. Cloudy
3. Light Rain
4. Heavy Rain
5. Snow

Interpretation

- Regions with warmer climates, like Sub-Saharan Africa (climate 3.06), show higher sugarcane yields (66.18), suggesting a slight positive link between climate and production.
- Australia & New Zealand have the lowest yield (64.93) despite moderate climate (2.96).
- Western Europe and Central America, with lower climate scores, also show lower yields.
- South, East, and Southeast Asia maintain good yields (65.69–65.88) with moderate climates (~2.97), likely due to efficient farming practices.

14. List of country where export is higher than import till now

```
1 • SELECT
2     country,
3     ROUND(SUM(Sugar_Exports), 2),
4     ROUND(SUM(Sugar_Imports), 2)
5 FROM
6     sugarconsumption
7 GROUP BY country
8 HAVING SUM(Sugar_Exports) > SUM(Sugar_Imports);
```

| country | ROUND(SUM(Sugar_Exports), 2) | ROUND(SUM(Sugar_Imports), 2) |
|-----------|------------------------------|------------------------------|
| France | 3958398136.73 | 3914851150.51 |
| Australia | 4364693293.24 | 4257495219.28 |
| Germany | 3842444512.11 | 3767886517.21 |
| Mexico | 3864854914.41 | 3658726369.01 |
| Brazil | 3539605713.76 | 3468939523.32 |
| USA | 3625090442.9 | 3555942074.26 |
| Indonesia | 4006158122.45 | 3935394141.64 |
| Japan | 3808567758.33 | 3724618873.47 |



Interpretation-

- All listed countries export more sugar than they import, indicating a favorable sugar trade balance.
- Australia leads with the highest exports (~436.47 million) and also has the highest imports (~425.75 million), reflecting a very active sugar trade economy.
- Indonesia and Japan also maintain strong export volumes with relatively lower imports, showcasing efficient production or surplus.
- Countries like France, Mexico, and Brazil have noticeable trade surpluses, suggesting either strong domestic production or export-focused sugar industries.
- The USA and Germany show smaller margins between export and import values, indicating a more balanced trade pattern.