**COVID-19 SQL Data Analysis**

**📌 Project Purpose**

This project analyzes the global impact of COVID-19 using SQL queries. The aim is to extract meaningful insights from the dataset, such as total cases, recovery trends, and country-level comparisons. By solving different analytical queries, the project demonstrates how SQL can be applied to explore, clean, and summarize real-world data.

**🛠️ Tools & Technologies**

* **SQL** (for querying and analysis)
* **Relational Database** (COVID-19 dataset + supporting tables)
* **Excel / CSV Exports** (for saving results)
* **GitHub** (for project showcase)

**🎯 Skills Showcased**

* Writing **SQL queries** to extract and aggregate insights.
* Performing **data filtering, grouping, and ordering**.
* Using **aggregate functions** (SUM, AVG, MAX).
* Implementing **JOIN operations** across multiple tables.
* Presenting analysis results with **screenshots and merged reports**.
* Demonstrating **problem-solving with structured datasets**.

**📊 SQL Queries Implemented**

1. **Select all records from covid\_data**
   * Verified dataset integrity and explored structure of records.
2. **Select all countries with their total cases**
   * Aggregated cases by country for a global summary.
3. **Get countries with more than 3,000,000 cases**
   * Filtered dataset to identify the most affected countries.
4. **Find the average of population density (per country)**
   * Applied AVG() function to analyze demographic factors.
5. **Find the country with the highest recovered cases**
   * Used MAX() to determine recovery leaders globally.
6. **Show total cases grouped by country, ordered by highest cases**
   * Ranked countries based on confirmed cases.
7. **Which 5 countries reported the lowest total COVID-19 cases?**
   * Extracted least-affected regions using ORDER BY ASC LIMIT 5.
8. **Join covid\_data with country\_region table**
   * Demonstrated relational database skills by combining two tables for richer insights (country-level metadata + COVID data).

**📖 Key Insights**

* SQL can highlight both **high-risk** and **low-risk** countries effectively.
* Aggregate queries provide clarity on **recovery performance**.
* Joining multiple tables enriches the dataset and supports **multi-dimensional analysis**.

**🚀 Conclusion**This project demonstrates proficiency in **SQL fundamentals** (SELECT, WHERE, GROUP BY, ORDER BY, LIMIT, JOIN) and how they can be applied to real-world datasets like COVID-19. The merged PDF and structured outputs help in showcasing results clearly, making the project suitable for professional portfolios and recruiter visibility