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DATA ANALYSIS HACKATHON

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Global Health Insights Analysis

Project Overview:

This project aims to explore global causes of death and uncover trends across different regions and time periods. By leveraging data analysis and visualization tools, the project will focus on providing a comprehensive understanding of mortality patterns. The analysis will use Python (Pandas, Matplotlib, Seaborn), Excel, and Power BI to process and visualize the dataset, offering key insights that can help inform public health strategies.

Key Features:

- **Data Cleaning & Processing:** Clean and organize the dataset to ensure accuracy and consistency for further analysis.
- **Exploratory Data Analysis (EDA):** Use Python for in-depth analysis to identify top causes of death globally and regionally.
- **Trend Analysis:** Evaluate trends over time, highlighting increases or decreases in specific causes of death.
- **Advanced Visualizations:** Create informative and aesthetically appealing graphs using Matplotlib and Seaborn to visualize the data clearly.
- **Excel Pivot Analysis:** Use Excel to generate pivot tables and conditional formatting to identify key patterns.
- **Power BI Dashboard:** Develop an interactive and dynamic dashboard in Power BI that provides an overview of mortality trends, allowing for filtering by year, region, and cause of death.
- **Presentation:** A clear and concise presentation of findings and recommendations based on the analysis.

Project Requirements:

1. **Python Analysis:**
    - Data loading, cleaning, and preparation using Pandas.
    - Statistical analysis and identification of key trends.
    - Data visualizations with Matplotlib and Seaborn.

2. **Excel Workbook:**
    - Pivot tables analyzing key aspects of the dataset.
    - Visual charts (e.g., pie charts, bar charts) to showcase specific causes of death.
3. **Power BI Dashboard:**
    - Interactive features such as filtering by year, region, and causes.
    - Geographical maps and summary statistics.
4. **Final Presentation:**
    - A comprehensive presentation highlighting insights, backed by data and visualizations.

Criteria for Evaluation:

- **Data Accuracy & Preparation (25%):** Quality of data cleaning and preparation, ensuring that the dataset is ready for analysis without errors.
- **Analysis & Insights (30%):** The depth of the analysis and the ability to draw meaningful and actionable insights from the dataset.
- **Visualization Quality (25%):** Effectiveness of the visualizations in conveying information clearly and accurately. This includes the design, layout, and choice of visual elements.
- **Dashboard Usability (15%):** How well the Power BI dashboard facilitates interactive exploration of the data and highlights key findings.
- **Presentation (5%):** Clarity and professionalism of the presentation in summarizing key insights, visualizations, and recommendations.

Bonus Points:

- **Predictive Analysis (Optional):** Use Python to develop a simple model predicting future trends based on historical data.
- **Additional Visualizations:** Going beyond the standard charts by incorporating innovative visual techniques (e.g., animation, heatmaps, etc.).
- **Regional Comparisons:** Perform a detailed comparison of causes of death between different regions, identifying specific health challenges unique to each area.
- **Advanced Excel Features:** Utilize advanced Excel functionalities like macros or custom formulas for deeper analysis.

GOOD LUCK