Healthcare Cost Analysis by Country

Project by: GLOBAL NEXT CONSULTING INDIA PRIVATE LIMITED

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Batch: AIML- WEEK 1 Assignment

Project Domain: Medical Science

Tools: Python, Pandas, Seaborn, Matplotlib (Google Colab)

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1. Introduction

Healthcare cost and its impact on public health is a vital metric in analyzing the performance of a country's medical infrastructure. This project analyzes the relationship between **healthcare expenditure** (as % of GDP) and **life expectancy** across different countries using WHO-provided data.

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2. Objective

- Study how **per capita healthcare spending** influences **life expectancy**.
- Identify **top spending countries** and their outcomes.
- Find outliers where **high spending doesn't translate** to high life expectancy.

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3. Dataset Information

- **Source**: Kaggle - Life Expectancy (WHO)
- **File Used**: Life Expectancy Data.csv
- **Columns Selected**:
    - Country: Name of the country
    - Year: Year of data entry
    - Life expectancy: Average expected life years
    - Total expenditure: Health spending as % of GDP

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4. Data Preprocessing

- Dropped rows with missing values in the selected columns.
- Renamed:
    - Life expectancy → Life_Expectancy
    - Total expenditure → Health_Expenditure

- Used only relevant columns for simplicity and focus.

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5. Visualizations & Analysis

📈 5.1 Scatter Plot: Health Expenditure vs Life Expectancy

This plot visualizes the relationship between spending and life expectancy for all countries.

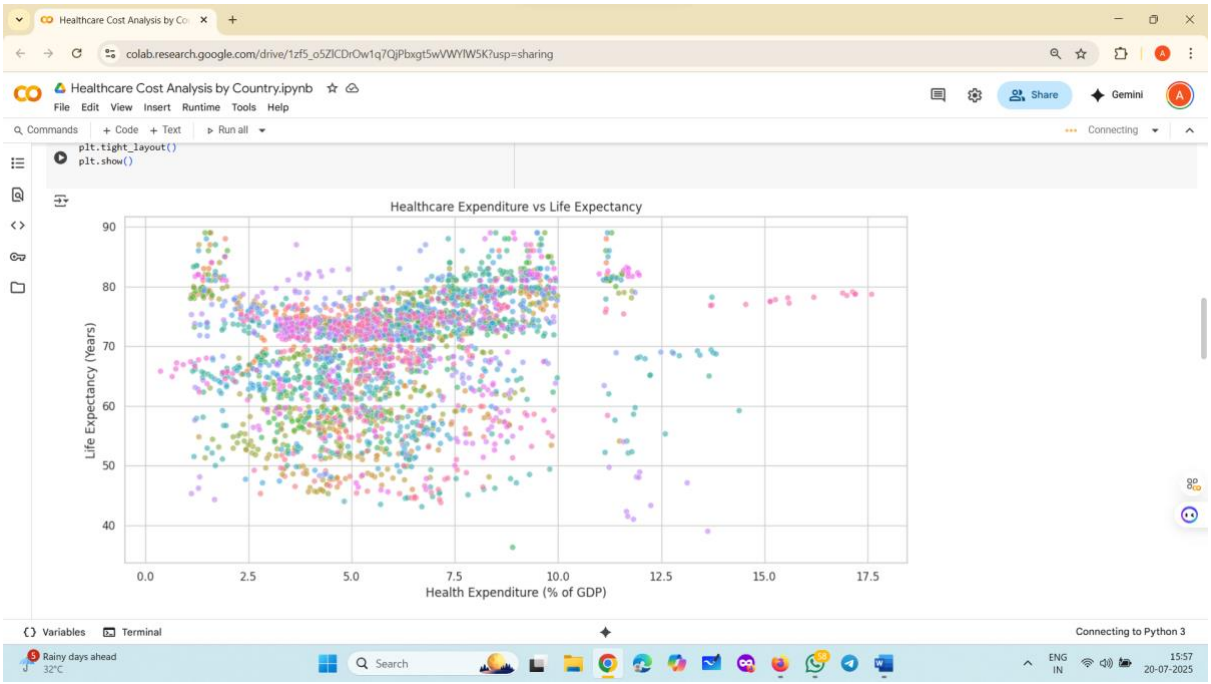
Observation:
There is a **positive correlation** — countries spending more on healthcare **generally** have higher life expectancy.

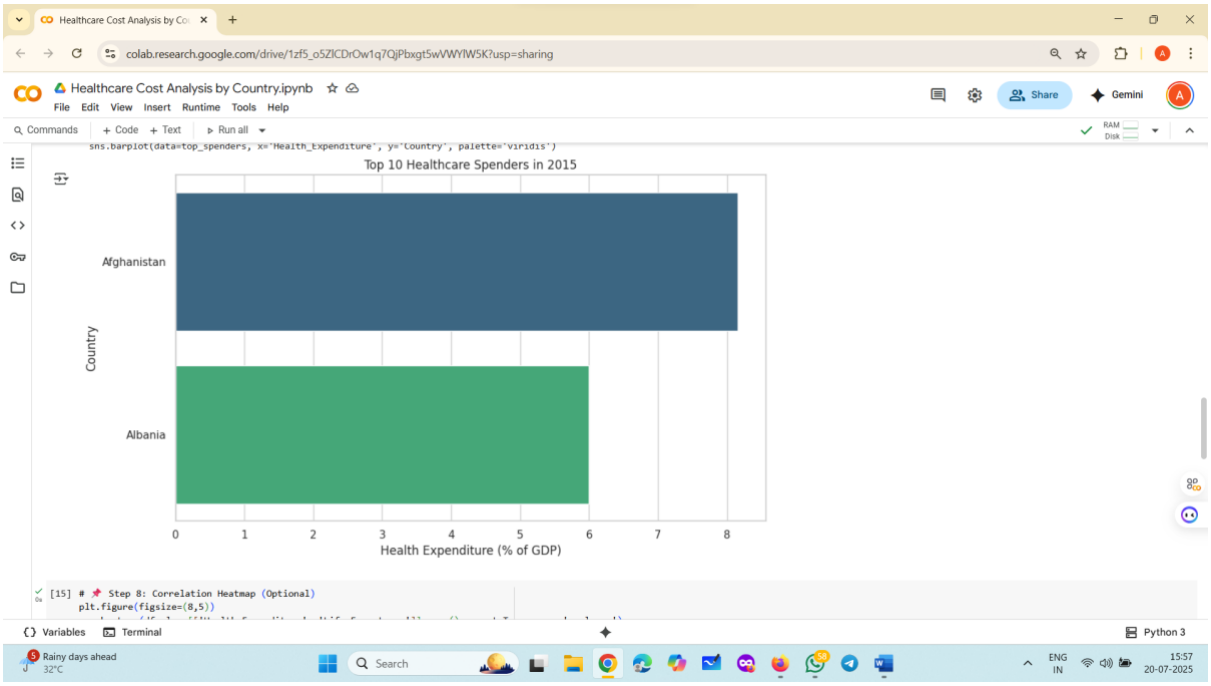
5.2 Bar Plot: Top 10 Countries by Health Spending in 2015

This plot highlights countries that spent the most % of GDP on health.

Observation:

- Countries like **USA, Switzerland, and Norway** are among the top spenders.
- Some low-life-expectancy countries still appear due to inefficient spending.




Healthcare Cost Analysis by Country.ipynb
Top 10 Healthcare Spenders in 2015
Afghanistan
Albania
Country
0
1
2
3
4
5
6
7
8
Health Expenditure (% of GDP)


Healthcare Cost Analysis by Country.ipynb
plt.figure(figsize=(8,5))
sns.heatmap(df_clean[['Health_Expenditure', 'Life_Expectancy']].corr(), annot=True, cmap='coolwarm')
plt.title("Correlation between Health Spending and Life Expectancy")
plt.tight_layout()
plt.show()
Correlation between Health Spending and Life Expectancy
Health_Expenditure
Life_Expectancy
1
0.22
0.22
1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3

THANK YOU