**Power BI Project: Global Health Expenditure Analysis**

**Overview:** In this Power BI project, we will analyse global health expenditure data to gain insights into different aspects of health spending across countries and regions. The dataset used in this project will contain information on health expenditure, GDP, population, and other relevant metrics.

**Objective:** The objective of this Power BI project is to analyse global health expenditure data to gain valuable insights into various aspects of health spending across countries and regions. The primary goal is to provide a comprehensive and data-driven view of health expenditure trends, its relationships, and identify key patterns. The analysis aims to answer critical questions and support decision-making in the field of global healthcare

**Data Source:** We will use a dataset that includes the following key columns:

* ***CountryID:*** It contains unique identifiers to different countries
* ***Country:*** Name of the country or region.
* ***YearID:*** It contains unique identifiers to different years
* ***Year:*** Year of the data record.
* ***Health Expenditure:*** Total health expenditure in US dollars.
* ***GDP:*** Gross Domestic Product in US dollars.
* ***Population:*** Total population of the country or region.

**Report Steps:**

**Step 1: Data Loading and Modelling**

In this initial phase of the project, we focus on data preparation and cleansing to ensure the data is ready for analysis.

**Data Loading:** We start by importing the data into Power BI. This data likely consists of information related to countries, GDP amounts, health expenditures, and total populations.

**Data Cleaning:** The data should be cleaned to remove any inconsistencies or missing values. This involves handling duplicate records, correcting data entry errors, and dealing with null or missing values. The goal is to have clean and reliable data.

**Data Type Validation:** After data cleaning, it's crucial to verify the data types for all columns. For example, ensure that numerical values are correctly categorized as numbers, date values are recognized as dates, and text fields are appropriately labeled. This ensures accurate analysis.

**Step 2: Creating DAX Functions**

Data Analysis Expressions (DAX) functions allow us to perform calculations and aggregations on the data. In this step, we define several DAX functions for the analysis.

**Sum of GDP Amount - 9M:** We can create a DAX function that calculates the sum of GDP amounts for all countries while subtracting 9 million. This could be used to analyze the impact of GDP changes.

**Count of Health Expenditure - 573:** Another DAX function can calculate the count of health expenditure records equal to 573. This might be helpful in identifying countries with specific health expenditure characteristics.

**Total Population - 23M:** A DAX function can sum the total population across all countries while subtracting 23 million. This can help us understand population dynamics.

**Step 3: Visualization**

Visualization is a key aspect of data analysis in Power BI. In this step, we create various visualizations to gain insights from the data.

**Line Chart for Health Expenditure:** We can generate a line chart that visualizes the health expenditure for each country over time. This allows us to identify trends and variations in health spending.

**Country-wise Health Expenditure Map:** A map visualization is a powerful tool to represent health expenditure on a geographical basis. Each country can be color-coded or sized based on its health expenditure.

**Bar Chart for 2020 Details:** Using a bar chart, we can display specific details for each country in 2020. This might include health expenditure, GDP, or other relevant data points.

**Average GDP Over the Years:** An aggregated visualization can display the average GDP for each year, offering insights into economic trends.

**Conclusions:**

**GDP and Health Expenditure Connection**: It is evident that there is a strong connection between a country's GDP and its health expenditure. Higher GDP often correlates with increased health spending, indicating the capacity of wealthier nations to allocate more resources to healthcare.

**Healthcare Trends Over Time:** The line chart reveals that healthcare expenditure has generally been increasing over the years, which is a positive sign for overall public health. However, we need to delve deeper into the reasons for these increases.

**Regional Disparities:** The geographical map highlights regional disparities in health expenditure. Some regions may have consistently high spending, while others lag behind. These differences may be influenced by healthcare policies, economic development, and healthcare infrastructure.

**2020 Anomalies:** The bar chart for 2020 may identify countries that had exceptional data that year. Understanding the factors contributing to these anomalies can help us learn from best practices or address potential challenges.

**Economic Growth Trends:** Analysing the average GDP trend, we can conclude whether countries have experienced steady economic growth or encountered economic shocks during certain periods. This information can be vital for economic planning and policy-making.