Project portfolio

Global Country Information Dataset 2023

Introduction:

This extensive dataset contains a wealth of information about all countries worldwide. It covers a wide range of indicators and attributes, including demographic statistics, economic indicators, environmental factors, healthcare metrics, education statistics, and much more. With every country represented, this dataset provides a comprehensive global perspective on various aspects of nations, allowing for in-depth analyses and cross-country comparisons.

The following data base are main sources of finding Health care, economic indicators, environmental factors and Education sector.

Sources:

This dataset was collected from the Kaggle website

SQL:

The data is imported into MySQL Workbench for further analysis to identify and address business problems by running specific queries.

Data Cleaning:

In order to conduct our analysis, first start by extracting the data into Excel and then proceed to clean the data by removing duplicates, standardizing it, and verifying its accuracy. Once the data is ready, then will import it into MYSQL Workbench and Power Bi. It thoroughly explains the issues using queries from MYSQL Workbench, accompanied by compelling visuals from the Power Bi dashboard.

SQL Business Problems Queries:

Question 1: How do CO2 emissions, urban population and gasoline prices in different countries correlate? Is there any impact of lower or higher gasoline prices on CO2 emissions?

Trend: countries with more urban population and gasoline prices less than $1 are at the top of CO2 emission.

```
25 •    SELECT
26          Country,
27          Co2_Emissions, Gasoline_Price, Urban_population
28      FROM
29          co2_emission
30      ORDER BY
31          Co2_Emissions DESC
32      LIMIT 3;
```

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

Country	Co2_Emissions	Gasoline_Price	Urban_population
China	9893038	$0.96	842933962
United States	5006302	$0.71	270663028
India	2407672	$0.97	471031528

Question 2: How do CO2 emissions and Forested area in different countries correlate?

Trend: countries with less forested area and more urban population are at the top of CO2 emission.

```
24
25 •    SELECT
26          Country,
27          Co2_Emissions, Urban_population, `Forested_Area(%)`
28      FROM
29          co2_emission
30      ORDER BY
31          Co2_Emissions DESC
32      LIMIT 3;
```

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

Country	Co2_Emissions	Urban_population	Forested_Area(%)
China	9893038	842933962	22.40%
United States	5006302	270663028	33.90%
India	2407672	471031528	23.80%

Question 3: What is the relationship between infant mortality and life expectancy of world countries?

Trend: High infant mortality and decreases life expectancy thus necessitates more health facilities.

```
1 •  SELECT Country,
2           Infantmortality,
3           Lifeexpectancy
4    FROM worlddata.population
5    WHERE Infantmortality > (SELECT AVG(Infantmortality) FROM worlddata.population)
6    AND Lifeexpectancy < (SELECT AVG(Lifeexpectancy) FROM worlddata.population)
7    ORDER BY Infantmortality desc , Lifeexpectancy
8    limit 5;
```

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

Country	Infantmortality	Lifeexpectancy
Central African Republic	84.5	52.8
Sierra Leone	78.5	54.3
Somalia	76.6	57.1
Nigeria	75.7	54.3
Chad	71.4	54

Question 4: Relationship between the size of a country, birthrate and population?

Trend: countries with large land areas and high birth rates have large populations.

```
22  select Country, population, Urban_population, `Land_Area(Km2)`, Birth_Rate
23  from population
24  order by population desc
25  Limit 4;
```

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

Country	population	Urban_population	Land_Area(Km2)	Birth_Rate
China	1397715000	842933962	9596960	10.9
India	1366417754	471031528	3287263	17.86
United States	328239523	270663028	9833517	11.6
Indonesia	270203917	151509724	1904569	18.07

Question 5: Relationship between the urban population and its overall population?

Trend: countries with high urban populations have overall large populations.

```
13  select ï»¿Country, population, Urban_population
14  from population
15  order by Urban_population Desc;
```

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

ï»¿Country	population	Urban_population
China	1397715000	842933962
India	1366417754	471031528
United States	328239523	270663028
Brazil	212559417	183241641
Indonesia	270203917	151509724
Japan	126226568	115782416
Russia	144373535	107683889

Question 6: Relationship between the population labor force participation % and the unemployment rate of a country?

Trend: countries with high unemployment rates have less population labor force participation %.

```
select p.ï»¿Country, r.Unemployment_rate, r.`Population_Labor_force_participation(%)`
from population p
join revenue r on p.ï»¿Country = r.ï»¿Country
order by r.Unemployment_rate Desc
limit 3;
```

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

ï»¿Country	Unemployment_rate	Population_Labor_force_participation(%)
Italy	9.89%	49.60%
Argentina	9.79%	61.30%
Colombia	9.71%	68.80%

Question 7: Relationship between the gross primary and secondary education enrollment of countries and the unemployment rate?

Trend: countries with high unemployment rates have high gross primary and secondary education enrollment.

```
select p.ï»¿Country, p.`Gross_primary_education_enrollment(%)`, p.`Gross_tertiary_education_enrollment(%)`, r.Unemployment_rate
from population p
join revenue r on p.ï»¿Country = r.ï»¿Country
order by r.Unemployment_rate Desc
Limit 3;
```

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

ï»¿Country	Gross_primary_education_enrollment(%)	Gross_tertiary_education_enrollment(%)	Unemployment_rate
Italy	101.90%	61.90%	9.89%
Argentina	109.70%	90.00%	9.79%
Colombia	114.50%	55.30%	9.71%

Question 8: Relationship between the population labor force participation % of countries and minimum wages?

Trend: countries with high population labor force participation % have low minimum wages so are more suitable for industrial setups.

```
29 • select Country, GDP, `Minimum wage`, `Population: Labor force participation (%)`
30   from `world-data-2023- final 1`
31   where `Minimum wage` is not null and `Population: Labor force participation (%)` is not Null
32   order by `Population: Labor force participation (%)` Desc
33   Limit 5;
```

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

Country	GDP	Minimum wage	Population: Labor force participation (%)
Madagascar	$14,083,906,357	$0.21	86.1%
Solomon Islands	$1,425,074,226	$0.40	83.8%
Nepal	$30,641,380,604	$0.36	83.8%
Tanzania	$63,177,068,175	$0.09	83.4%
Zimbabwe	$21,440,758,800	$4.60	83.1%

Question 9: Relationship between urban population, GDP and total tax rate of countries?

Trend: countries with high urban populations have high total tax rates and GDP.

```
35 • select ï»¿Country, GDP, `Tax_revenue(%)`, Urban_population, Total_tax_rate
36   from revenue
37   order by Urban_population desc
38   Limit 3;
```

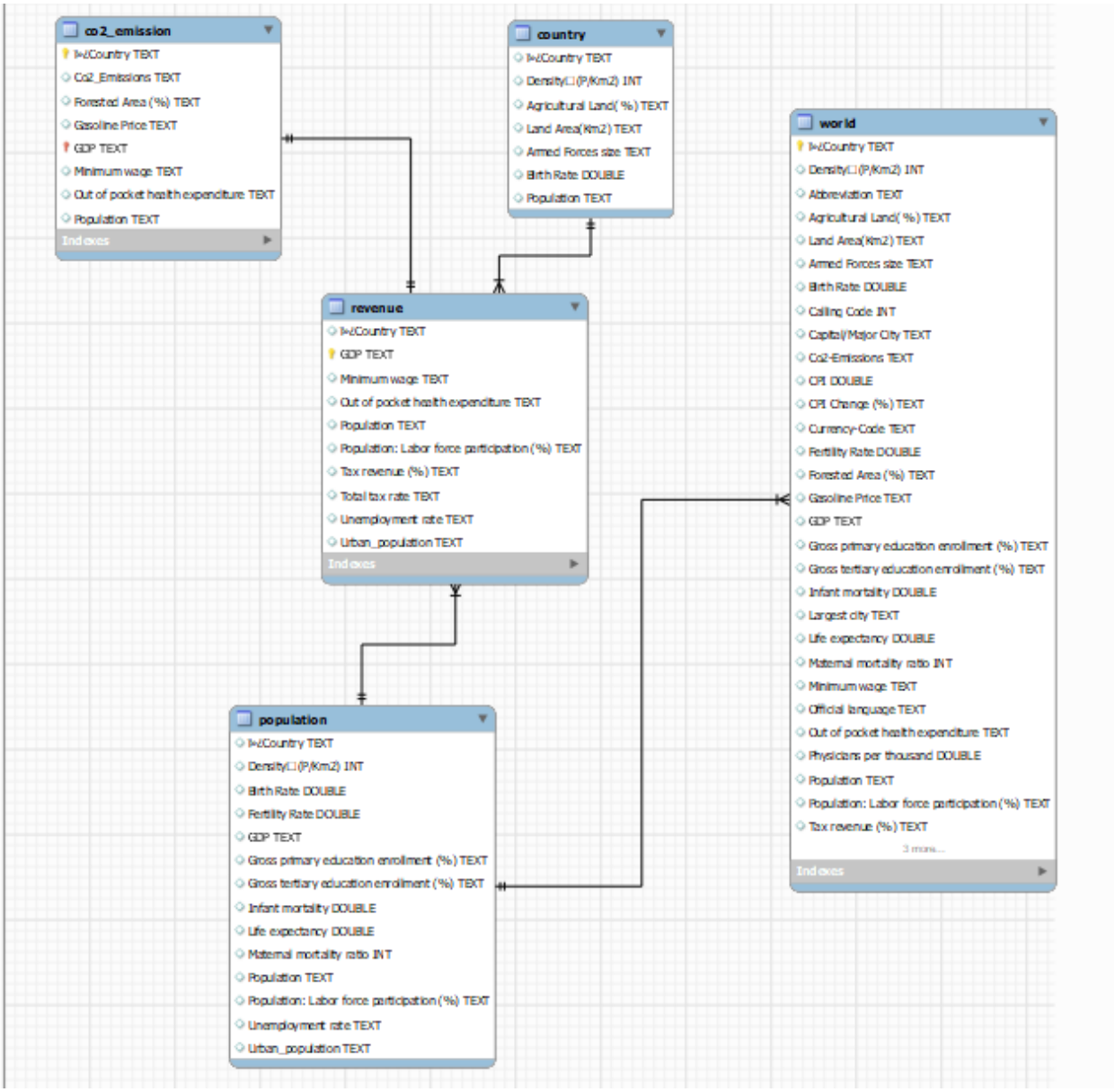
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ï»¿Country	GDP	Tax_revenue(%)	Urban_population	Total_tax_rate
China	$19,910,000,000,000	9.40%	842933962	59.20%
India	$2,611,000,000,000	11.20%	471031528	49.70%
United States	$21,427,700,000,000	9.60%	270663028	36.60%

Data dictionary

Field Name	Data Type	Field Size	Description	Example
Country	Varchar	15	Name of Country	Pakistan
Density	Integer	14	Density of each country	1345823
Agricultural Land(%)	var char	12	Total agriculture Land	59%
Land Area(Km2)	float	15	Total Land area of each country	230079
Armed Forces size	Integer	12	Total Army country have	6500000
Birth Rate	float	10	Total birth Rate of each country	65.8
Capital/Major City	Text	8	capital/major city of country	New York
Co2-Emissions	var char	4	each country produced CO2	43%
CPI	float	15	CPI of every country	29.20%
CPI Change (%)	var char	3	CPI change percentage	23%
Fertility Rate	float	13	Rate of fertility of each country	34%
Forested Area (%)	var char	15	total percent to forest area	22%
Gasoline Price	float	5	Gasoline price of country	372.68
GDP	integer	9	GDP of each country	5500000
Gross primary education enrollment (%)	var char	2	total primary education percentage	27%
Gross tertiary education enrollment (%)	var char	2	Total education for country	78%
Infant mortality	float	9	total infant mortality in each country	800
Life expectancy	float	3	expectancy of life in each country	86.5
Maternal mortality ratio	float	2	ratio of maternity in each country	1:03
Minimum wage	integer	11	Minimum wage each country have	4560000
Out of pocket health expenditure	integer	11	Total expenses covered by people own pocket	60%
Population	integer	10	Total population	8406478
Population: Labor force participation (%)	var char	2	Total lavour forced to work in each country	30%
Tax revenue (%)	var char	2	Revenue of each country got	34%
Total tax rate	integer	2	Tax Rate of each country	22%
Unemployment rate	float	2	Total Unemployed people's	45%
Urban population	integer	10	Urban Popular of country	6755000

Entity Relationship Diagram:



Recommendation

The efficient CO2 reduction strategy for countries with high urbanization levels and low gasoline should therefore focus on funding renewable energy as well as improving on public transport. Countries which have undergone the process of urbanization and have relatively scarce natural resources, should compensate their deficit by planting green areas in cities as well as launching programs of afforestation. It thus suggests that the construction of better health care facilities and provision of enhanced services are indispensable since the infant mortality rate as well as the life expectancy is low. Much attention should be paid to the population and its reasonable number in countries with a large territory and high birth rate. The given inference points at the fact that large populations could always be attributed to growth in the urban populations hence the significance of urban planning. Countries experiencing high unemployment rates and low labor force participation should consider implementing policies to encourage employment and stimulate economic activity. Similarly, nations with high rates of enrollment in education programs should ensure that the skills and knowledge gained translate into meaningful job opportunities. In countries where labor force participation is high but minimum wages are low, it may be necessary to enact policies that safeguard workers' rights, especially if these countries are looking to attract industrial investments. Furthermore, the correlation between high urban populations and high GDP/tax rates underscores the significance of strategic economic planning to leverage urban economic potential while promoting equitable growth.

- The industrial setups in countries with high population labor force participation % and low minimum wages will benefit both the industrialists and the countries
- Enhanced gross primary and secondary education enrolment will reduce unemployment by creating more opportunities apart from labor work
- Education to enhance skilled labor in countries with less population labor force participation will reduce unemployment
- Forestation is the key to overcome CO2 emission problem