UNEARTHING THA ENVIRONMENTAL IMPACT OF HUMAN ACTIVITY: A GOBAL CO2 EMISSION ANALYSIS

INTRODUCTION

- Global warming is one of the biggest challenges currently being faced by the human race ,although correlation is not causation ,a likely cause of global warming is due to increased atmospheric carbon dioxide from human activities.
- CO2 Emission refers to the carbon dioxide emitted throughout the world.
- Analysing Global CO2 Emission across countries from 1975 to 2020. This dataset contains a record of CO2 Emission by each country and Region of Earth, have we are going to analysis and visualise country wise, Region wise and Overall Co2 Emission on Earth.

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Team Size:4

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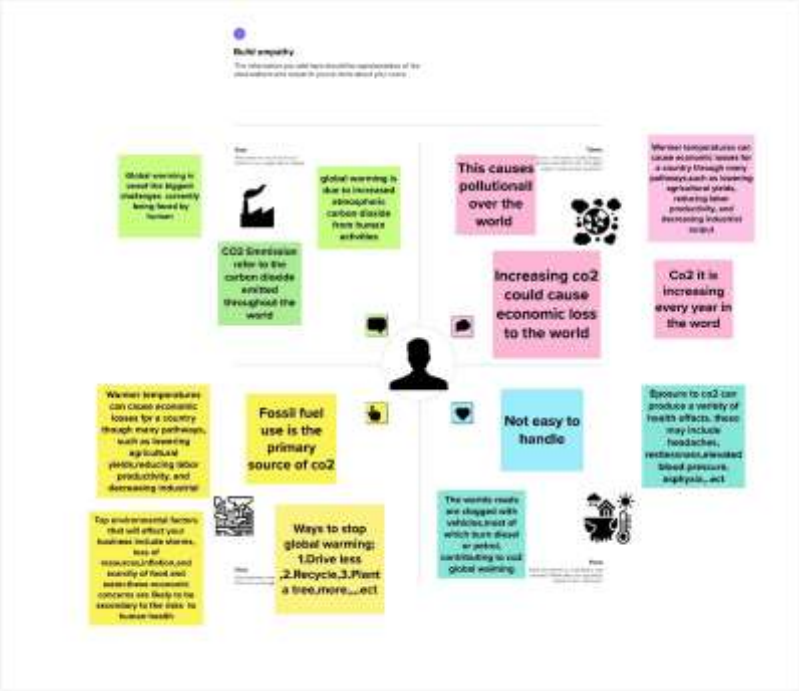
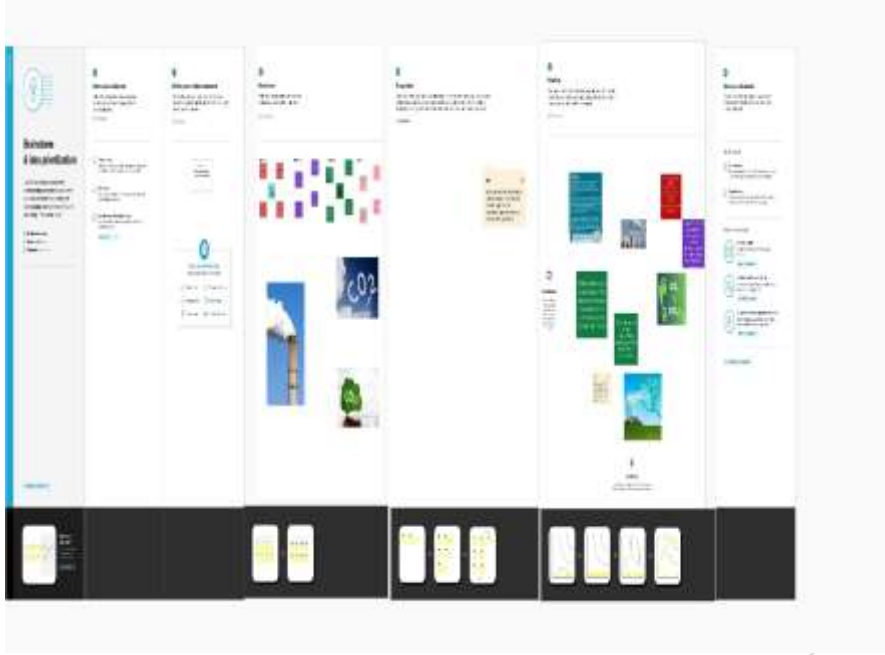
TASK 1

Empathy Map

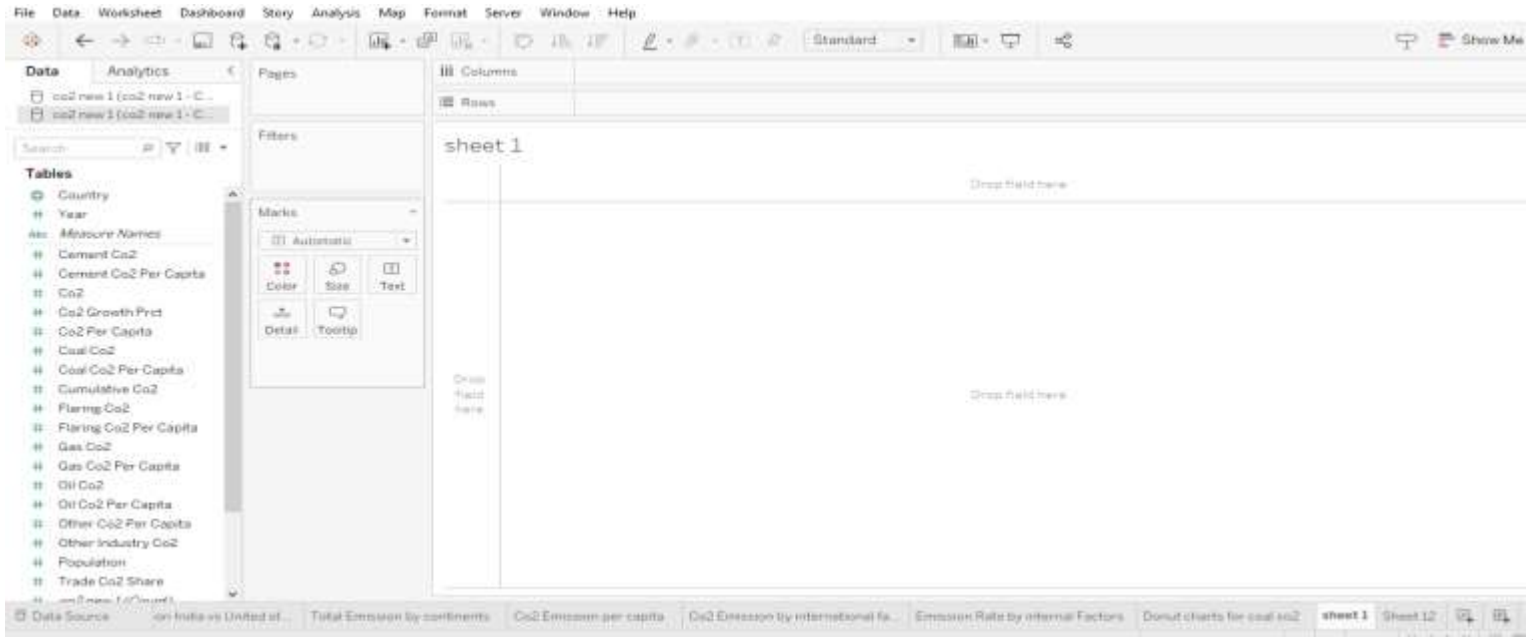


Brainstorm & idea prioritization

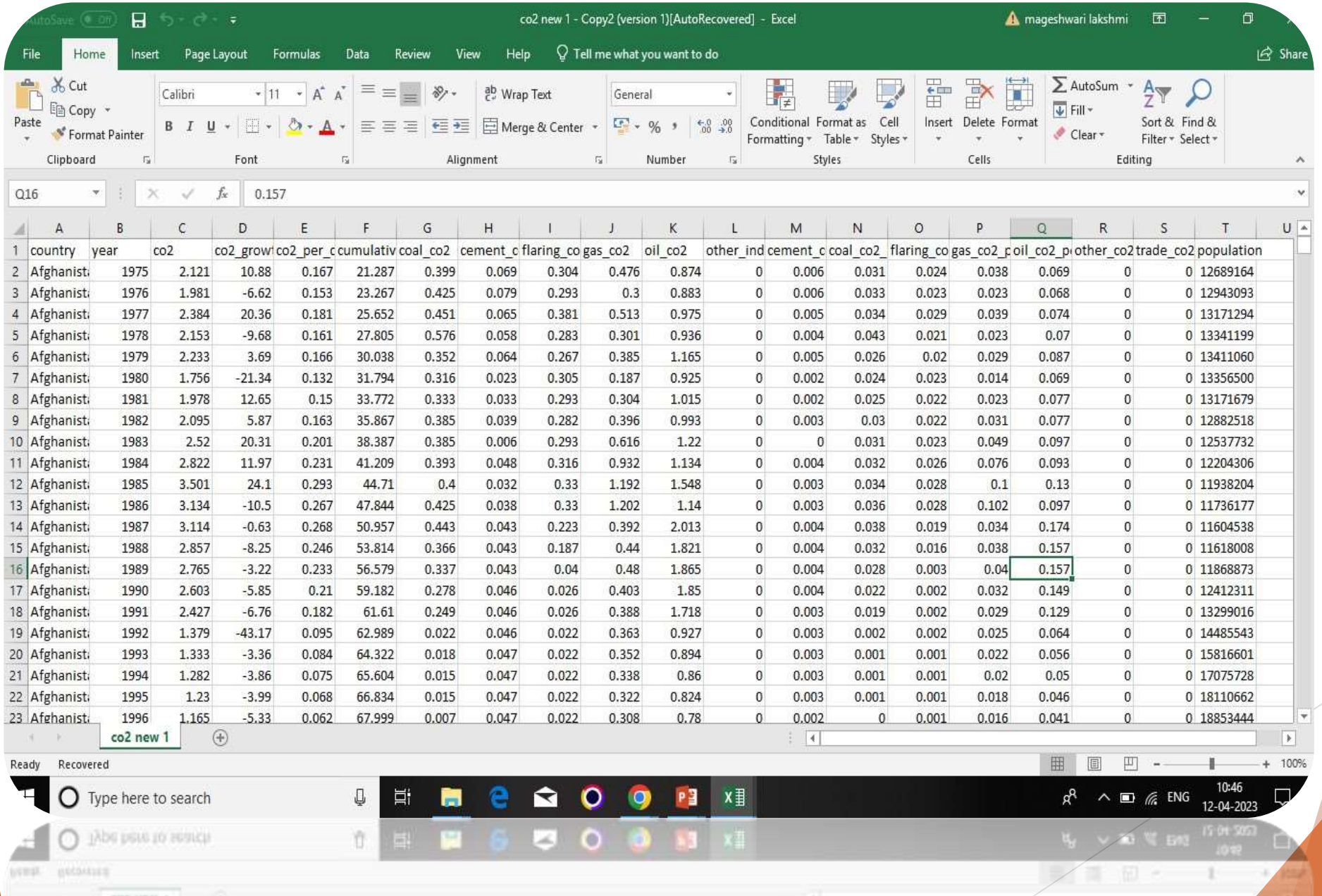


TASK 2

- **The second steps of the project is the data collection and extraction from the date base. The date sheets is collect the project manual**



Collect the Datased



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	country	year	co2	co2_grow	co2_per_c	cumulativ	coal_co2	cement_c	flaring_co	gas_co2	oil_co2	other_ind	cement_c	coal_co2_	flaring_co	gas_co2_p	oil_co2_p	other_co2	trade_co2	population
2	Afghanist	1975	2.121	10.88	0.167	21.287	0.399	0.069	0.304	0.476	0.874	0	0.006	0.031	0.024	0.038	0.069	0	0	12689164
3	Afghanist	1976	1.981	-6.62	0.153	23.267	0.425	0.079	0.293	0.3	0.883	0	0.006	0.033	0.023	0.023	0.068	0	0	12943093
4	Afghanist	1977	2.384	20.36	0.181	25.652	0.451	0.065	0.381	0.513	0.975	0	0.005	0.034	0.029	0.039	0.074	0	0	13171294
5	Afghanist	1978	2.153	-9.68	0.161	27.805	0.576	0.058	0.283	0.301	0.936	0	0.004	0.043	0.021	0.023	0.07	0	0	13341199
6	Afghanist	1979	2.233	3.69	0.166	30.038	0.352	0.064	0.267	0.385	1.165	0	0.005	0.026	0.02	0.029	0.087	0	0	13411060
7	Afghanist	1980	1.756	-21.34	0.132	31.794	0.316	0.023	0.305	0.187	0.925	0	0.002	0.024	0.023	0.014	0.069	0	0	13356500
8	Afghanist	1981	1.978	12.65	0.15	33.772	0.333	0.033	0.293	0.304	1.015	0	0.002	0.025	0.022	0.023	0.077	0	0	13171679
9	Afghanist	1982	2.095	5.87	0.163	35.867	0.385	0.039	0.282	0.396	0.993	0	0.003	0.03	0.022	0.031	0.077	0	0	12882518
10	Afghanist	1983	2.52	20.31	0.201	38.387	0.385	0.006	0.293	0.616	1.22	0	0	0.031	0.023	0.049	0.097	0	0	12537732
11	Afghanist	1984	2.822	11.97	0.231	41.209	0.393	0.048	0.316	0.932	1.134	0	0.004	0.032	0.026	0.076	0.093	0	0	12204306
12	Afghanist	1985	3.501	24.1	0.293	44.71	0.4	0.032	0.33	1.192	1.548	0	0.003	0.034	0.028	0.1	0.13	0	0	11938204
13	Afghanist	1986	3.134	-10.5	0.267	47.844	0.425	0.038	0.33	1.202	1.14	0	0.003	0.036	0.028	0.102	0.097	0	0	11736177
14	Afghanist	1987	3.114	-0.63	0.268	50.957	0.443	0.043	0.223	0.392	2.013	0	0.004	0.038	0.019	0.034	0.174	0	0	11604538
15	Afghanist	1988	2.857	-8.25	0.246	53.814	0.366	0.043	0.187	0.44	1.821	0	0.004	0.032	0.016	0.038	0.157	0	0	11618008
16	Afghanist	1989	2.765	-3.22	0.233	56.579	0.337	0.043	0.04	0.48	1.865	0	0.004	0.028	0.003	0.04	0.157	0	0	11868873
17	Afghanist	1990	2.603	-5.85	0.21	59.182	0.278	0.046	0.026	0.403	1.85	0	0.004	0.022	0.002	0.032	0.149	0	0	12412311
18	Afghanist	1991	2.427	-6.76	0.182	61.61	0.249	0.046	0.026	0.388	1.718	0	0.003	0.019	0.002	0.029	0.129	0	0	13299016
19	Afghanist	1992	1.379	-43.17	0.095	62.989	0.022	0.046	0.022	0.363	0.927	0	0.003	0.002	0.002	0.025	0.064	0	0	14485543
20	Afghanist	1993	1.333	-3.36	0.084	64.322	0.018	0.047	0.022	0.352	0.894	0	0.003	0.001	0.001	0.022	0.056	0	0	15816601
21	Afghanist	1994	1.282	-3.86	0.075	65.604	0.015	0.047	0.022	0.338	0.86	0	0.003	0.001	0.001	0.02	0.05	0	0	17075728
22	Afghanist	1995	1.23	-3.99	0.068	66.834	0.015	0.047	0.022	0.322	0.824	0	0.003	0.001	0.001	0.018	0.046	0	0	18110662
23	Afghanist	1996	1.165	-5.33	0.062	67.999	0.007	0.047	0.022	0.308	0.78	0	0.002	0	0.001	0.016	0.041	0	0	18853444

Understand the data

- Dataset consists CO2 emissions in metric ton per capita of every country around the world. The data is collected from 1975 to 2020. In this dataset Countries and regions are included. Data is initially pre-processed using excel.

The dataset contains

- Country- Country for which Co2 is Recorded
- Year- Year the data was recorded
- Co2 Emission (In Million Metric Tons)
- Co2 Growth per Capita
- Co2 Per Capita
- Cumulative Co2
- Several Fossil Fuels rate of Emission

Data Preparation

Activity: Prepare the Data for Visualization

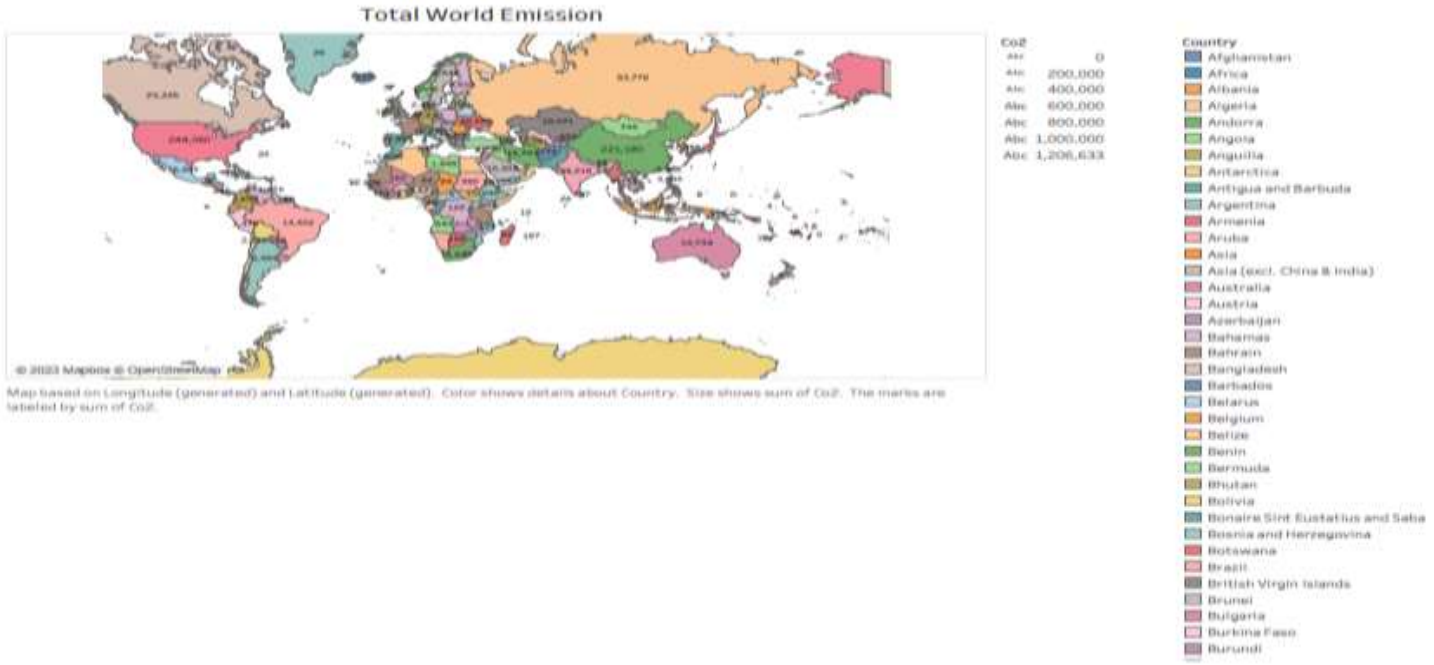
- Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. Since the Data is initially pre-processed we can skip this step. Basically this process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Data Visualization

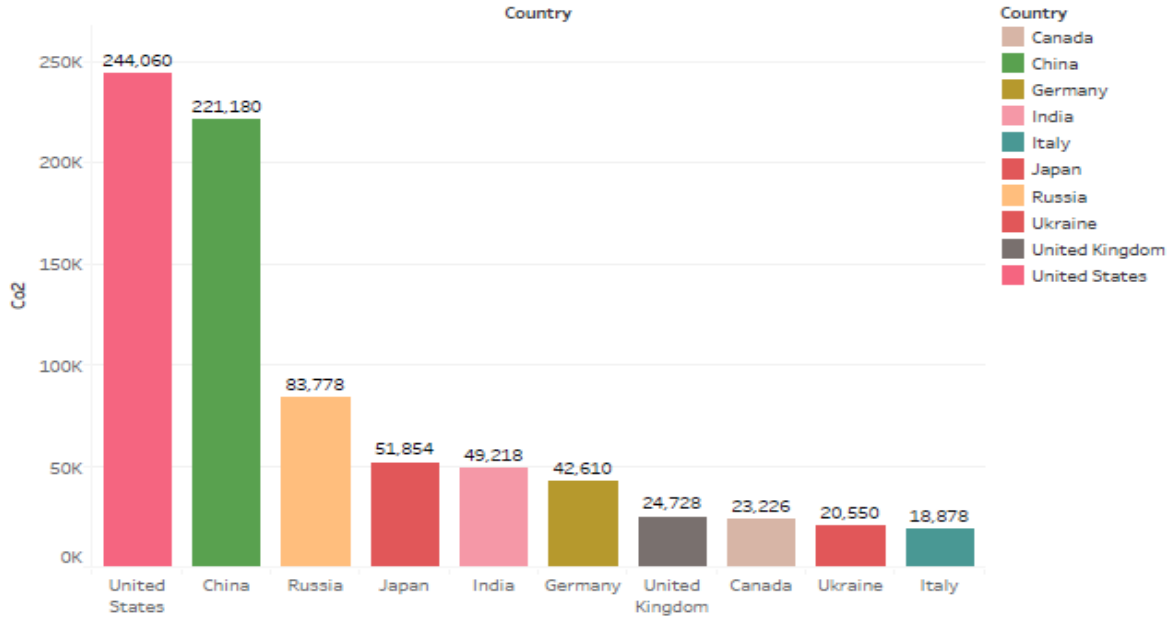
- Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

TASK 3
DATA VISUALIZATION

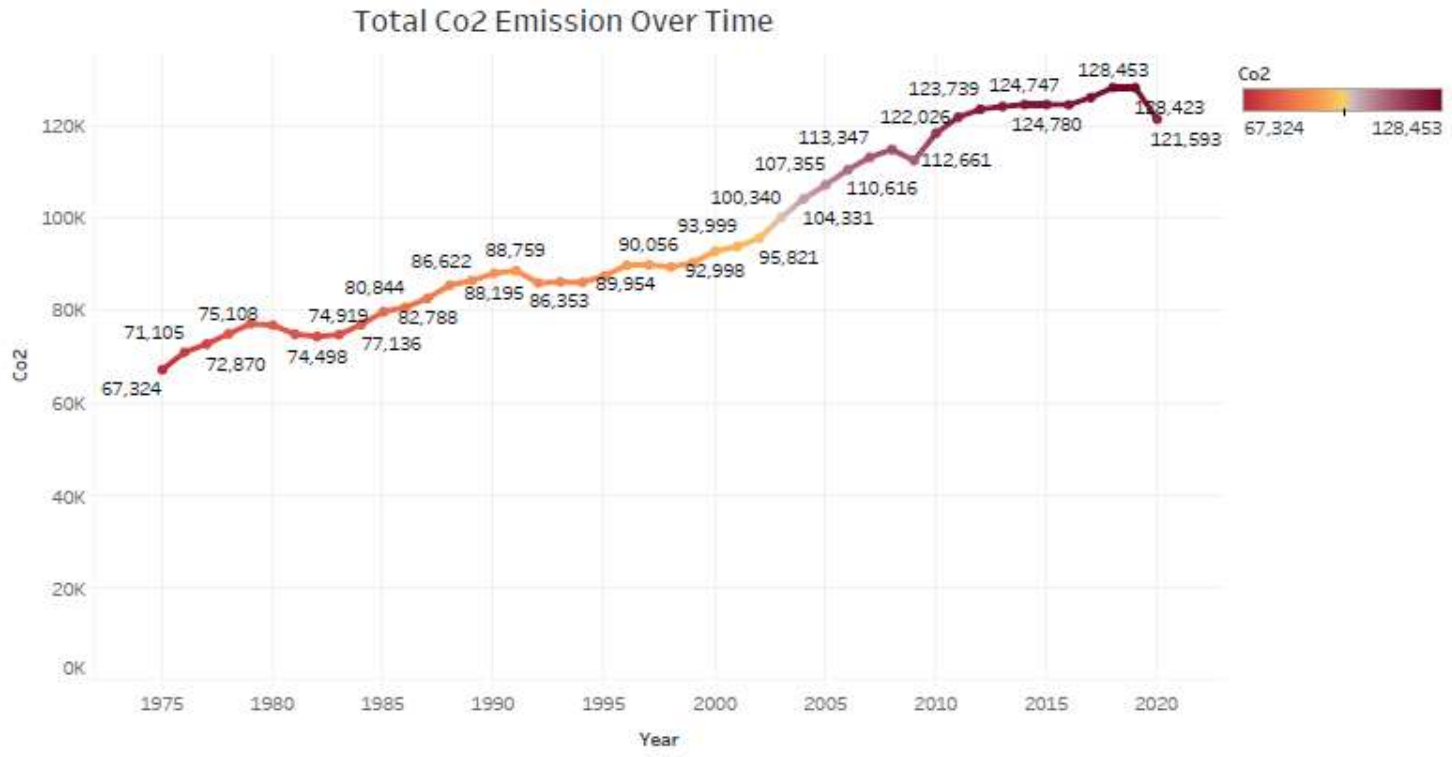
- **The data visualization there are the number of unique visualization**



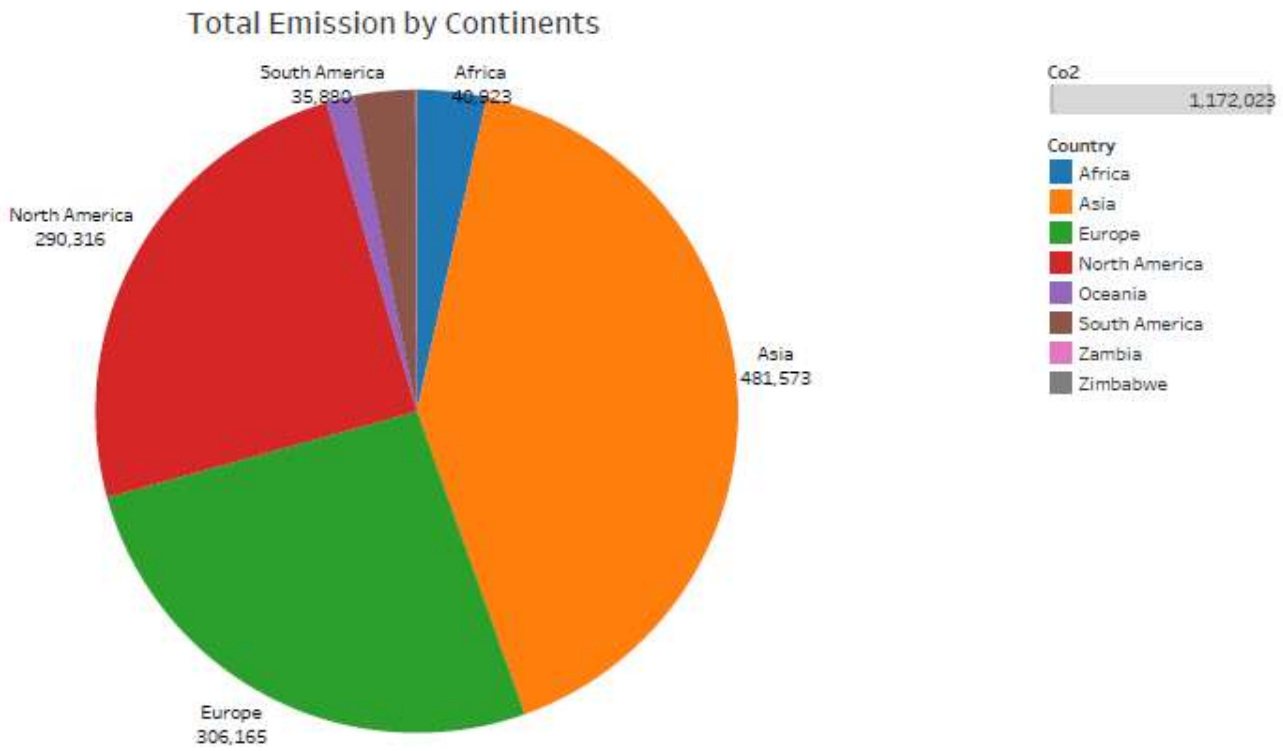
Top 10 Emitting Countries



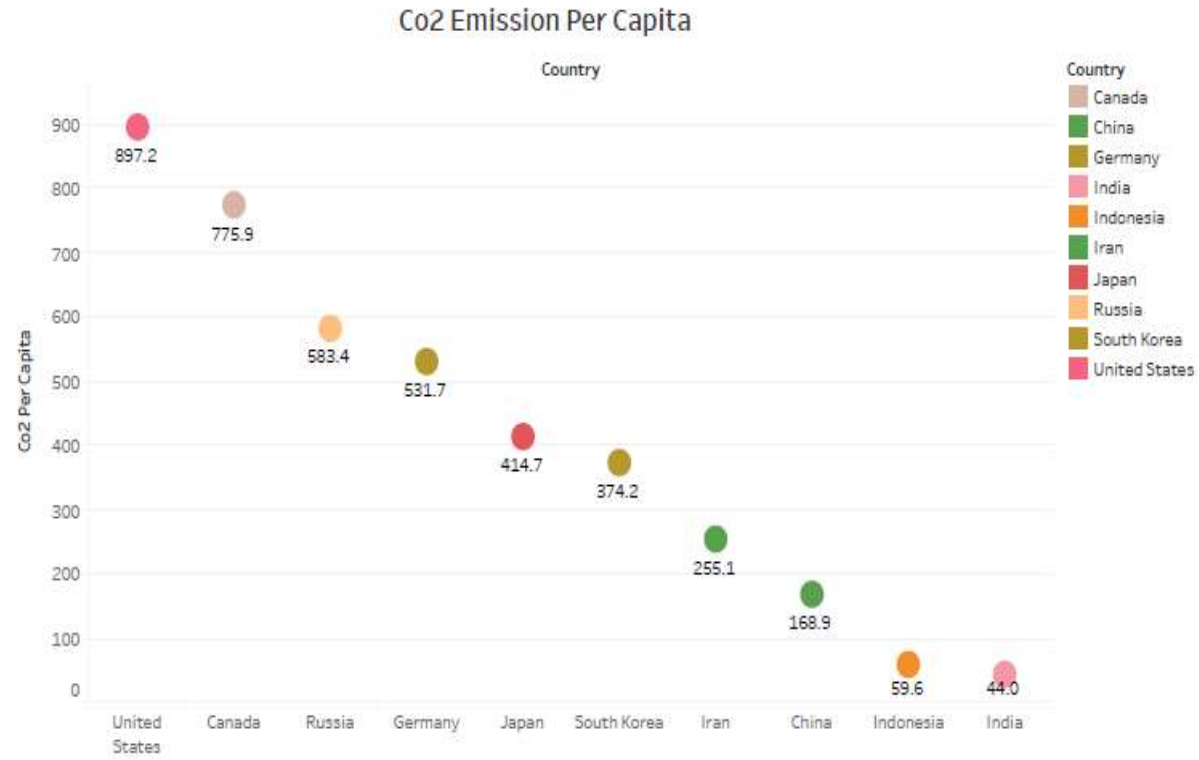
Sum of Co2 for each Country. Color shows details about Country. Details are shown for Country. The view is filtered on Country, which keeps 10 of 244 members.



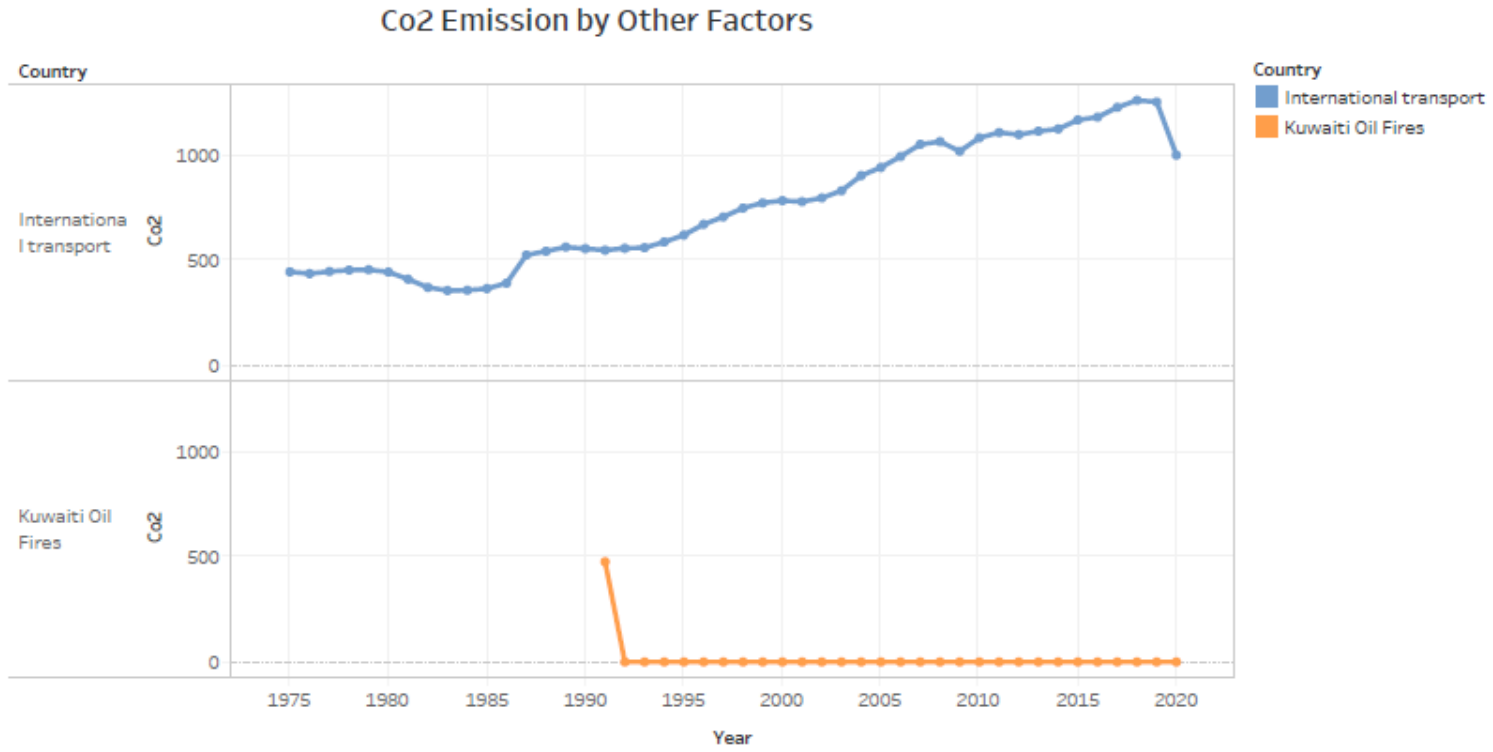
The trend of sum of Co2 for Year. Color shows sum of Co2.



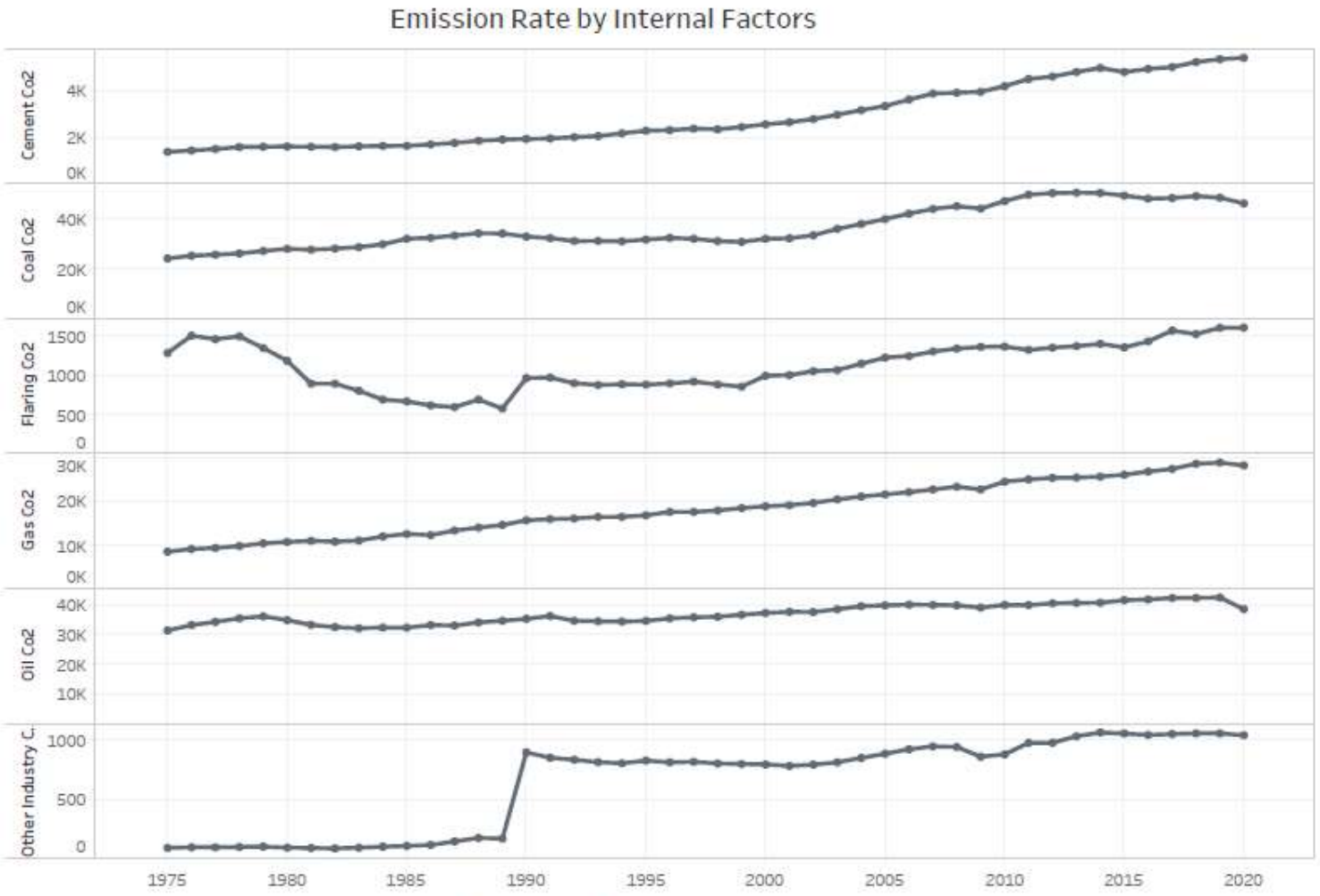
Country and sum of Co2. Color shows details about Country. Size shows sum of Co2. The marks are labeled by Country and sum of Co2. The view is filtered on Country, which keeps 8 of 244 members.



Sum of Co2 Per Capita for each Country. Color shows details about Country. The view is filtered on Country, which keeps 10 of 244 members.

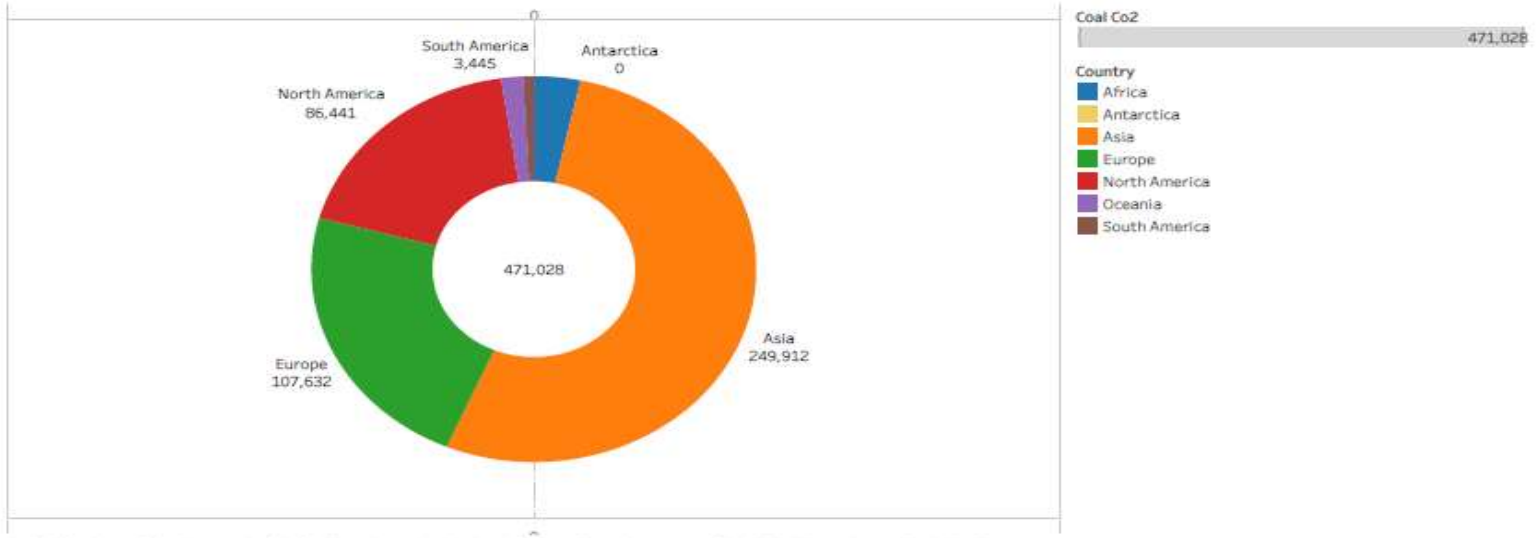


The trend of sum of Co2 for Year broken down by Country. Color shows details about Country. The view is filtered on Country, which keeps International transport and Kuwaiti Oil Fires.



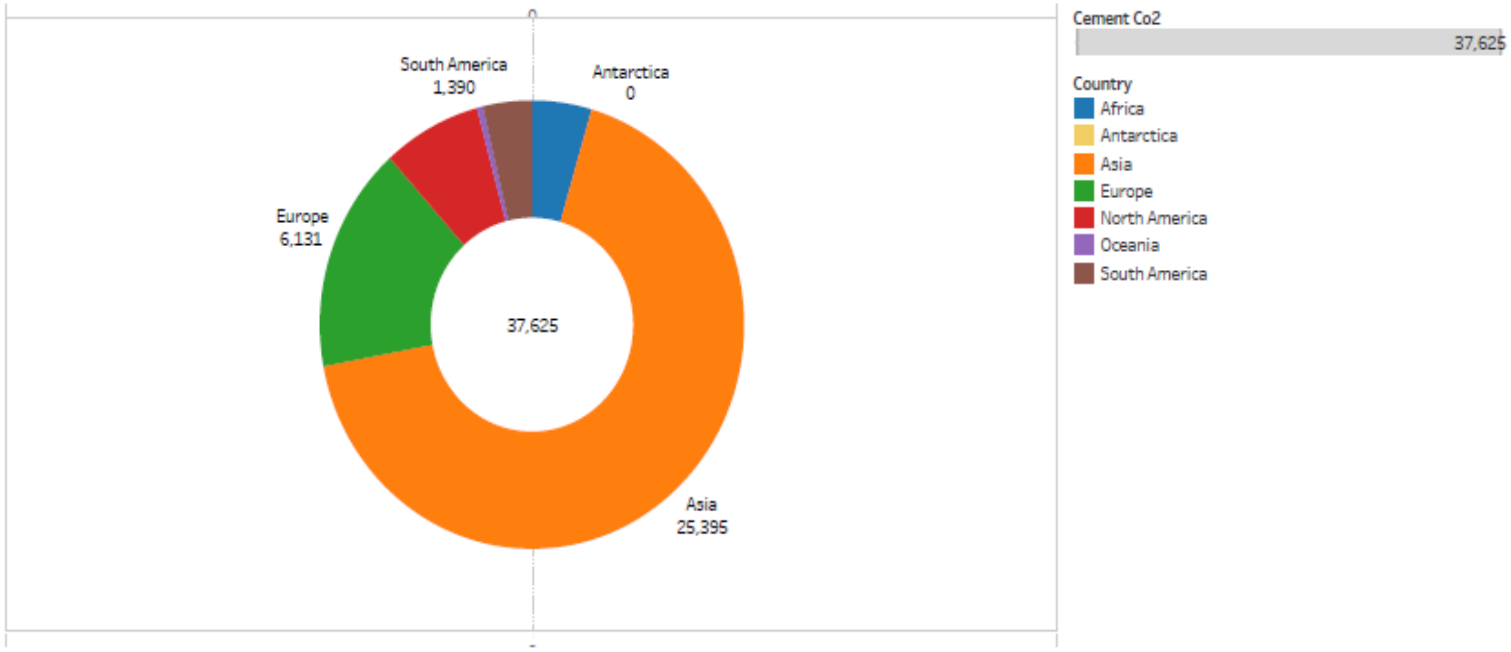
The trends of sum of Cement Co2, sum of Coal Co2, sum of Flaring Co2, sum of Gas Co2, sum of Oil Co2 and sum of Other Industry Co2 for Year.

Donut Chart for Coal Co2 Emission



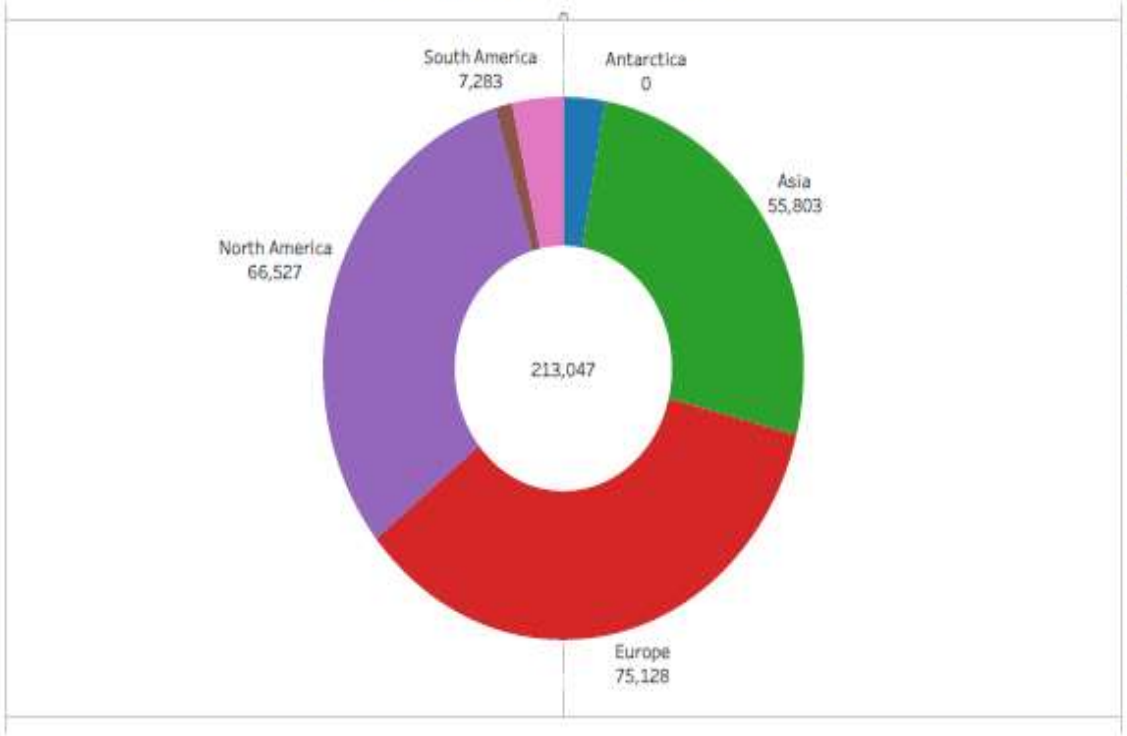
Avg(0.0) and avg(0.0). For pane Avg(0.0): Color shows details about Country. Size shows sum of Coal Co2. The marks are labeled by Country and sum of Coal Co2. The view is filtered on Country, which keeps 7 of 244 members.

Donut Chart For Cement Co2 Emission



Avg(0.0) and avg(0.0). For pane Avg(0.0): Color shows details about Country. Size shows sum of Cement Co2. The marks are labeled by Country and sum of Cement Co2. The view is filtered on Country, which keeps 7 of 244 members.

Donut Chart For Gas Co2 Emission

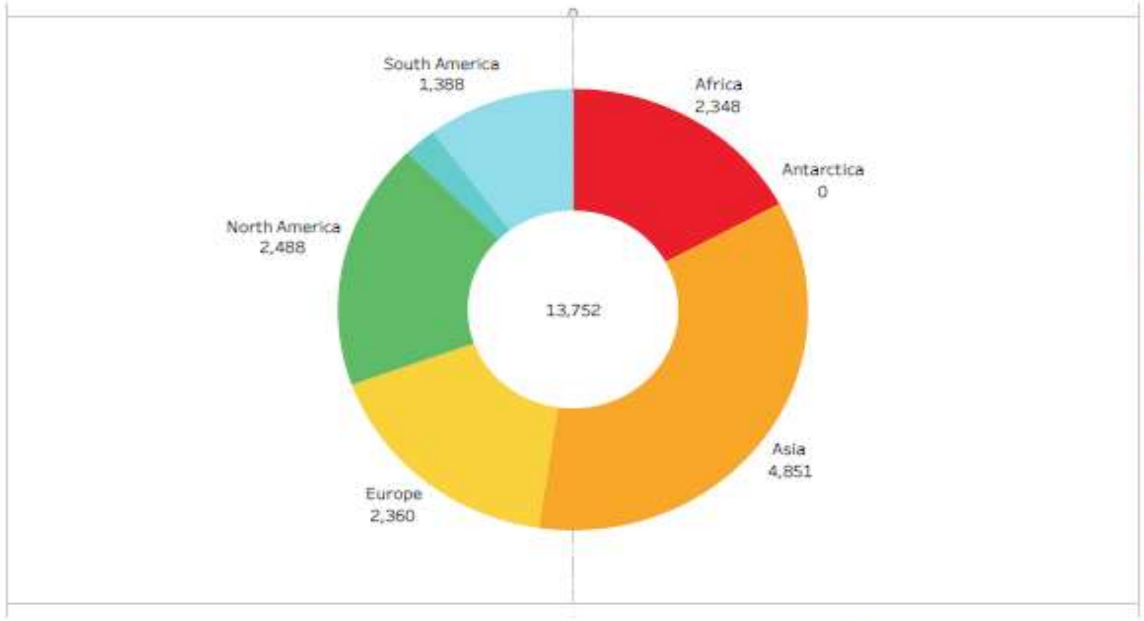


Gas Co2
213,047

Country
- Africa
- Antarctica
- Asia
- Europe
- North America
- Oceania
- South America

Avg(0.0) and avg(0.0). For pane Avg(0.0): Color shows details about Country. Size shows sum of Gas Co2. The marks are labeled by Country and sum of Gas Co2. The view is filtered on Country, which keeps 7 of 244 members.

Donut Chart for Flaring Co2 Emission

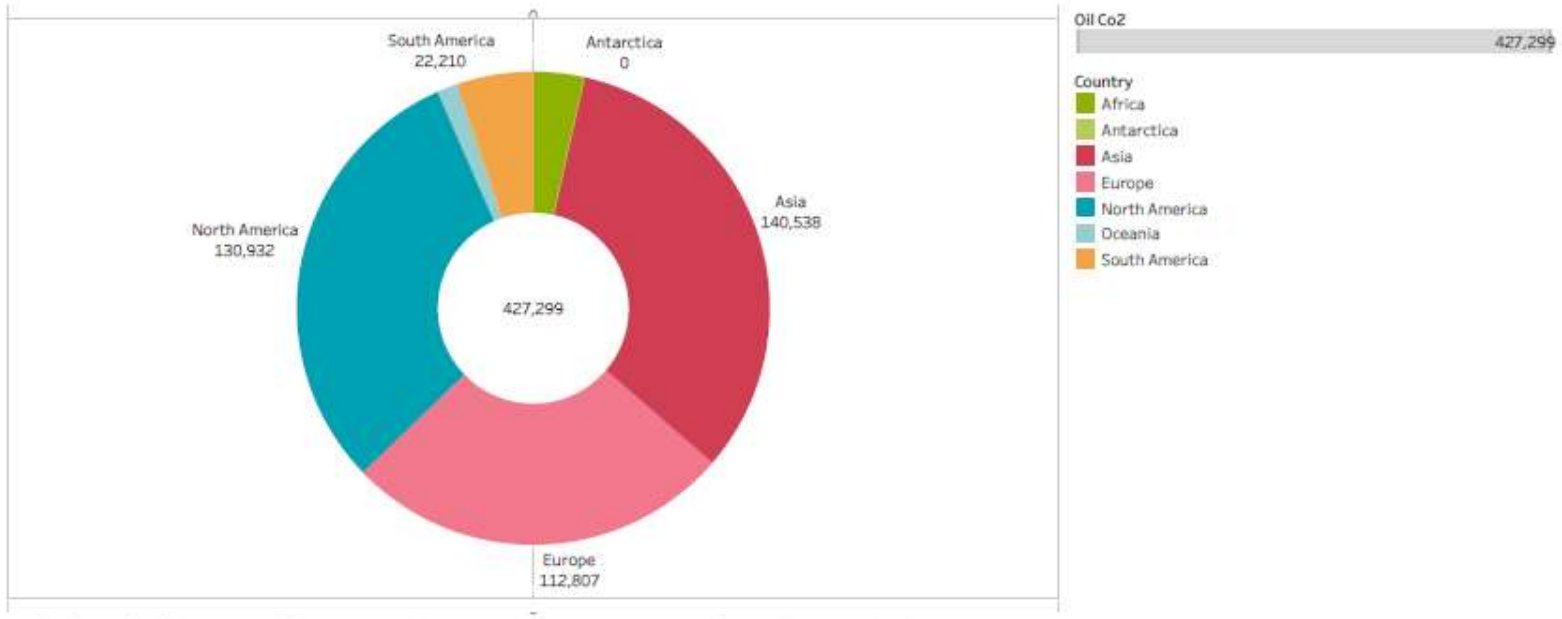


Flaring Co2
13,752

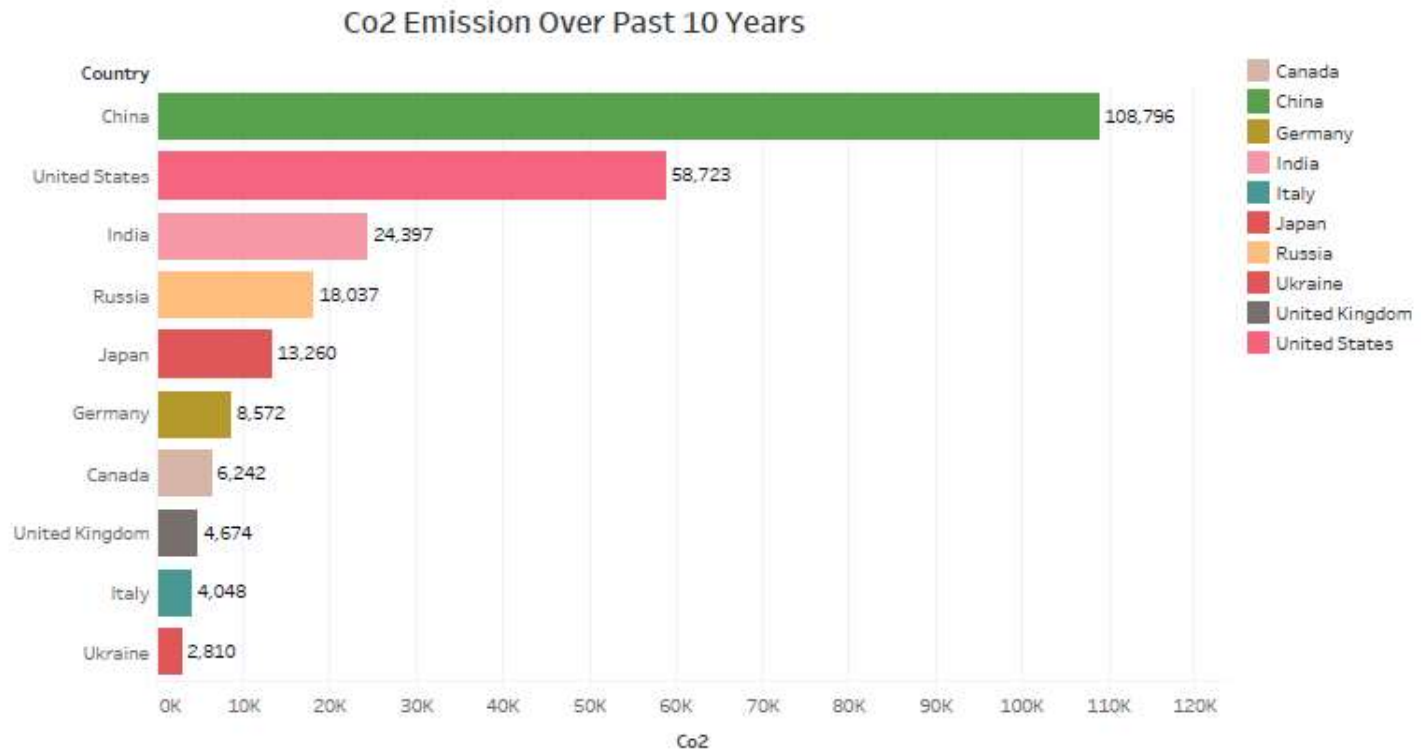
Country
- Africa
- Antarctica
- Asia
- Europe
- North America
- Oceania
- South America

Avg(0.0) and avg(0.0). For pane Avg(0.0): Color shows details about Country. Size shows sum of Flaring Co2. The marks are labeled by Country and sum of Flaring Co2. The view is filtered on Country, which keeps 7 of 244 members.

Donut Chart for Oil Co2 Emission

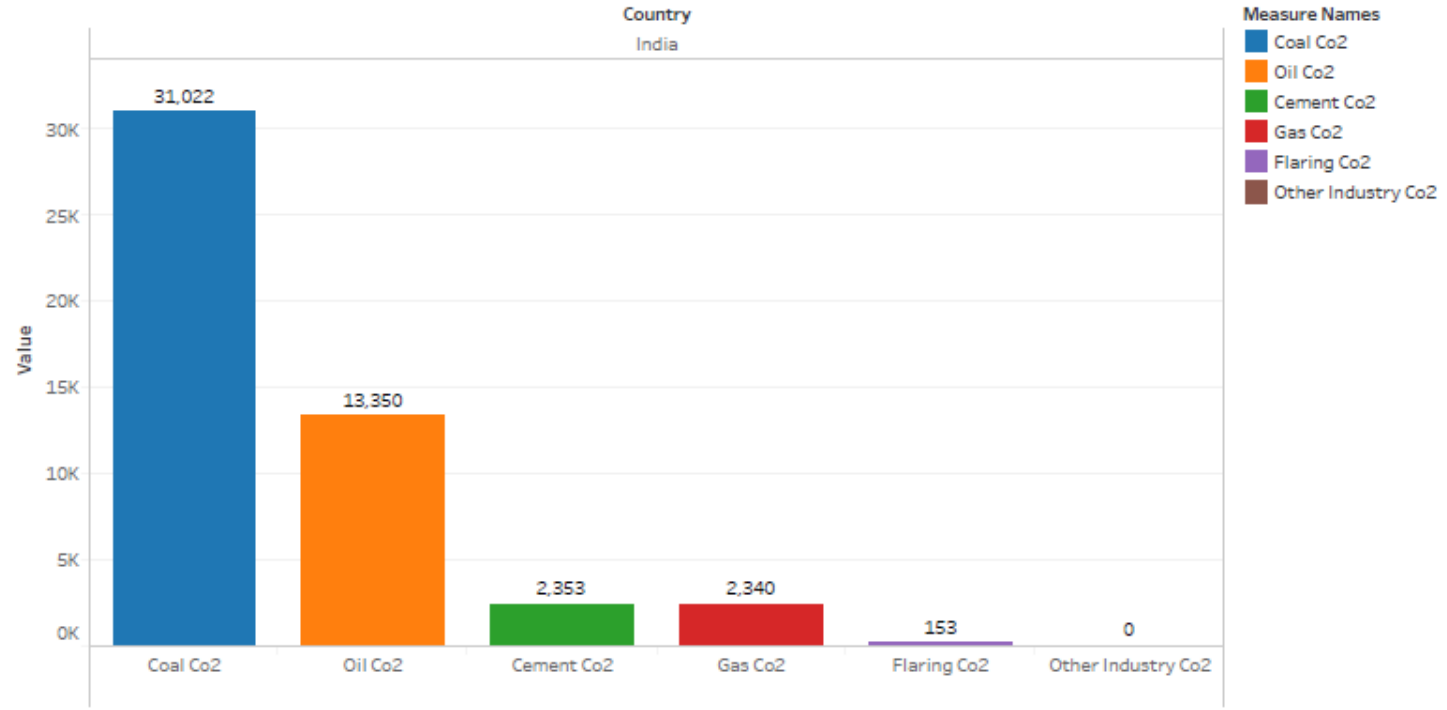


Avg(0.0) and avg(0.0). For pane Avg(0.0): Color shows details about Country. Size shows sum of Oil Co2. The marks are labeled by Country and sum of Oil Co2. The view is filtered on Country, which keeps 7 of 244 members.



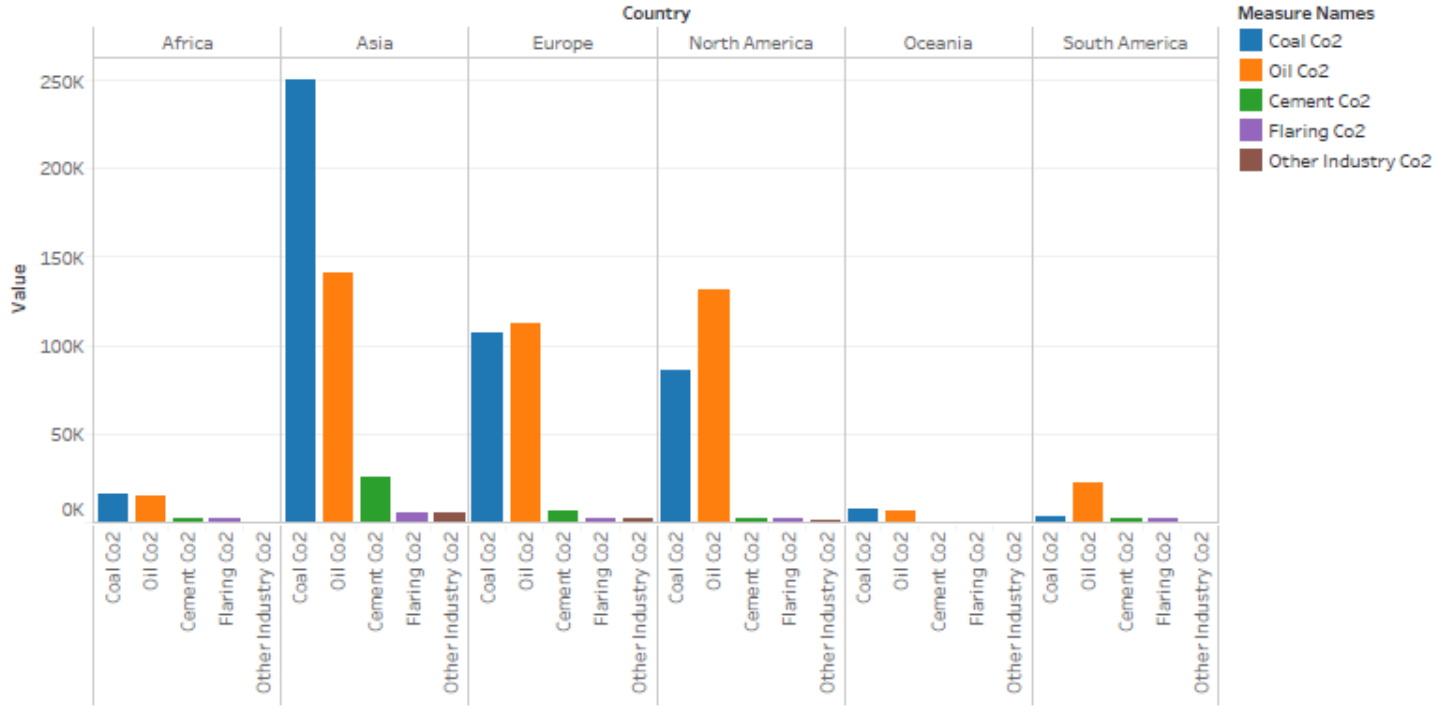
Sum of Co2 for each Country. Color shows details about Country. The data is filtered on Year, which ranges from 2010 to 2020. The view is filtered on Country, which keeps 10 of 244 members.

Overall Contribution by India in Co2 Emission

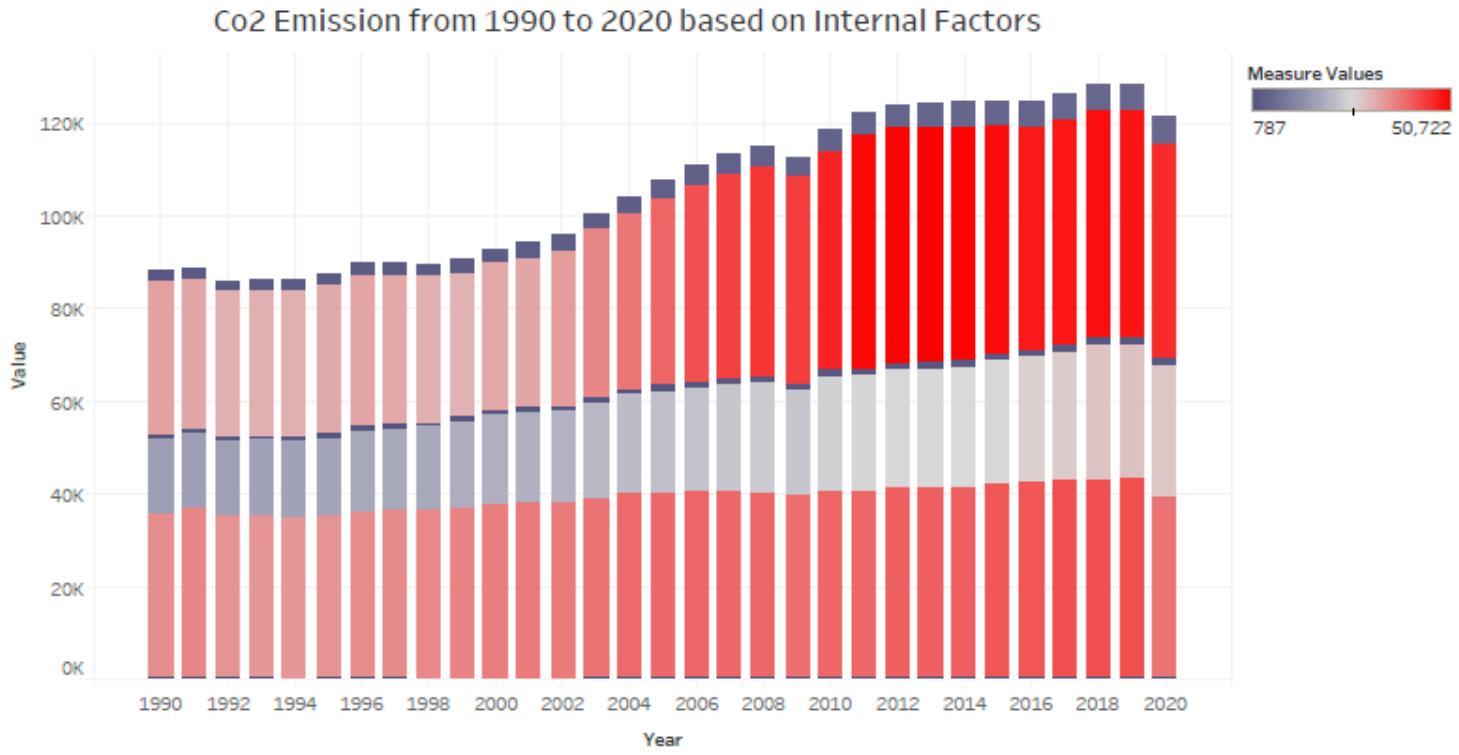


Coal Co2, Oil Co2, Cement Co2, Gas Co2, Flaring Co2 and Other Industry Co2 for each Country. Color shows details about Coal Co2, Oil Co2, Cement Co2, Gas Co2, Flaring Co2 and Other Industry Co2. The view is filtered on Country, which keeps India.

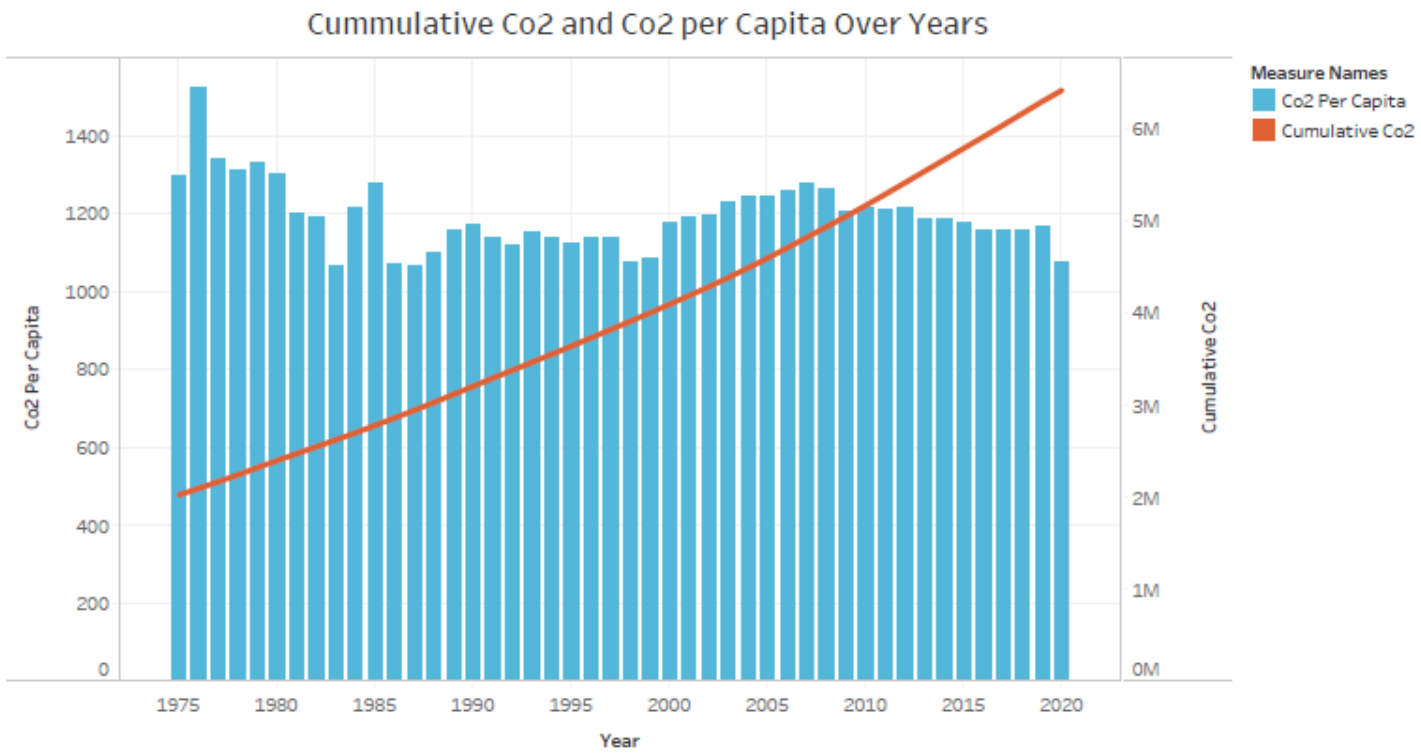
Continent Wise Contibution by Internal Factors



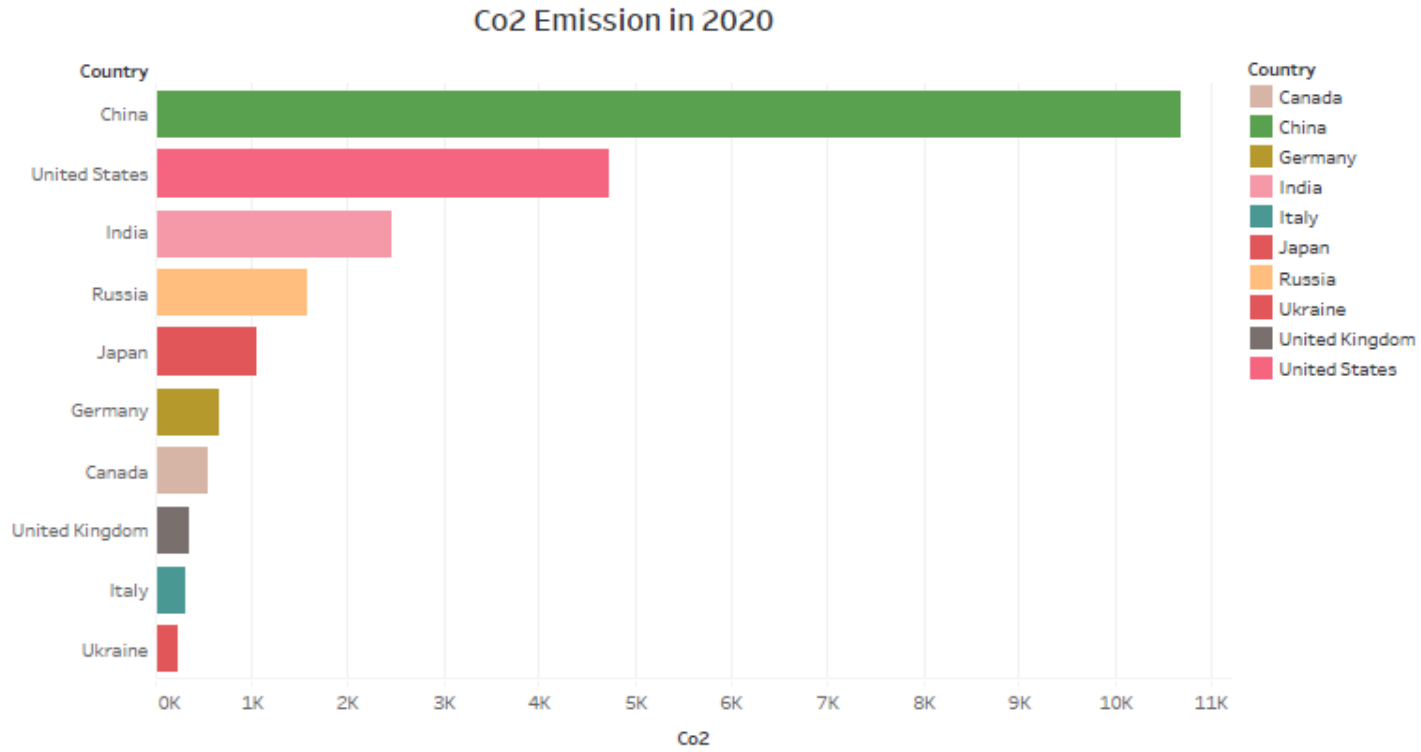
Coal Co2, Oil Co2, Cement Co2, Flaring Co2 and Other Industry Co2 for each Country. Color shows details about Coal Co2, Oil Co2, Cement Co2, Flaring Co2 and Other Industry Co2. The view is filtered on Country, which keeps 6 of 244 members.



The plots of Cement Co2, Coal Co2, Flaring Co2, Gas Co2, Oil Co2 and Other Industry Co2 for Year. Color shows Cement Co2, Coal Co2, Flaring Co2, Gas Co2, Oil Co2 and Other Industry Co2. Details are shown for Cement Co2, Coal Co2, Flaring Co2, Gas Co2, Oil Co2 and Other Industry Co2. The view is filtered on Year, which ranges from 1990 to 2020.



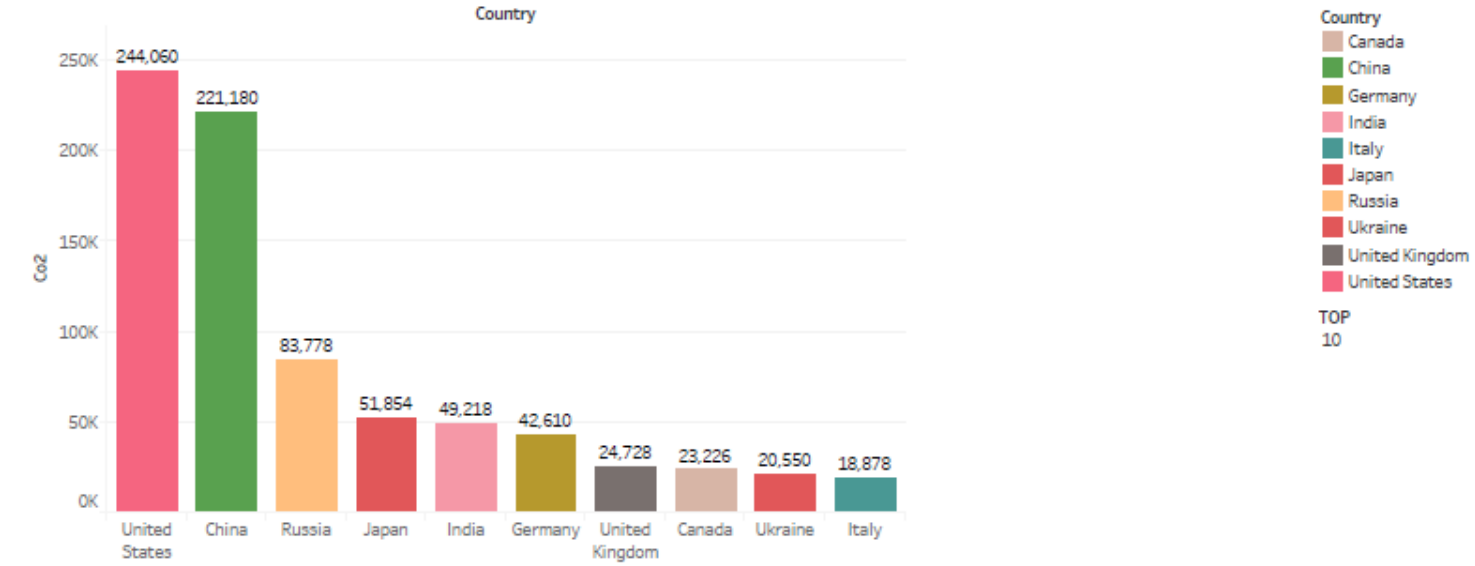
The trends of Co2 Per Capita and Cumulative Co2 for Year. Color shows details about Co2 Per Capita and Cumulative Co2. The view is filtered on Year, which ranges from 1975 to 2020.



Sum of Co2 for each Country. Color shows details about Country. The data is filtered on Year, which ranges from 2020 to 2020. The view is filtered on Country, which keeps 10 of 244 members.

Co2 Emission Story

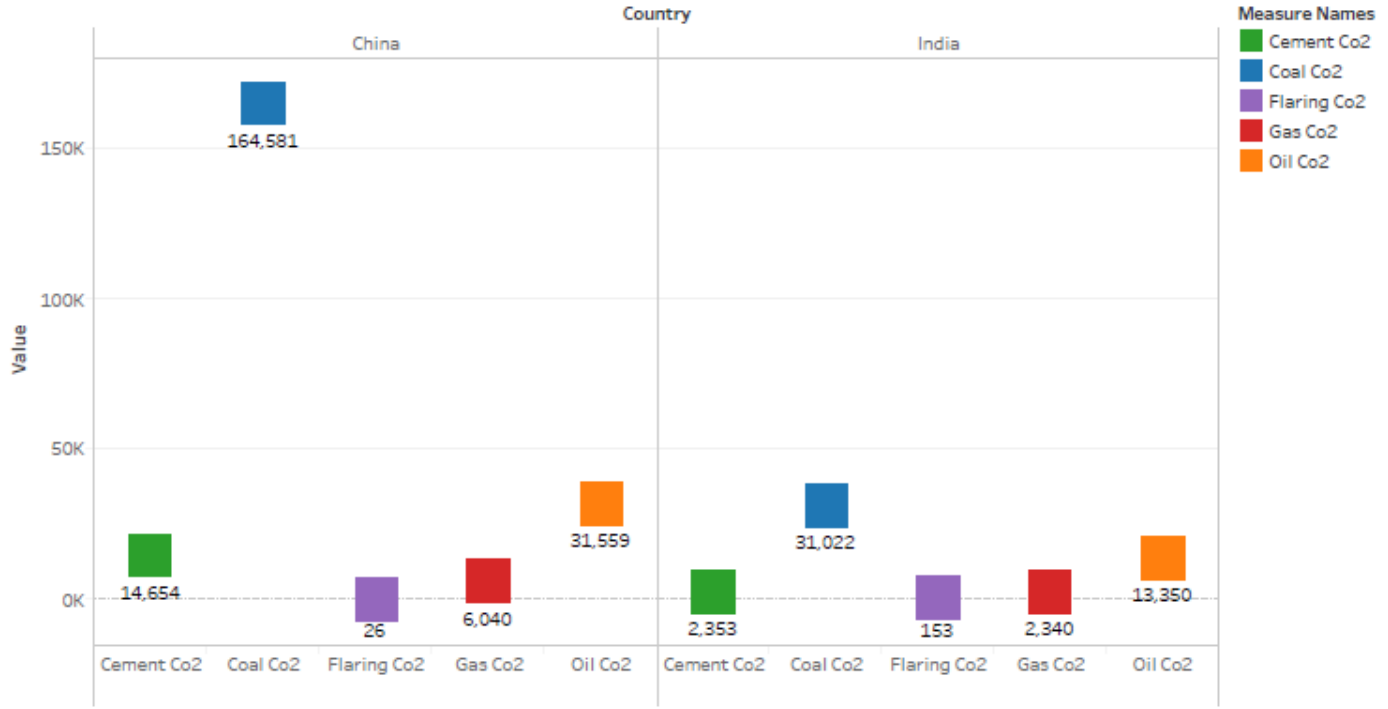
Countries Emitting Highest Co2	Total Co2 Emission from 1975 to 2020	Total Co2 Emission by	Co2 Emission due to Internal	Co2 Emission due to External	Continents Contribution due to coal Co2 Emission	Continents Contribution due to Cement Co2 Emission	Continents Contribution due to Gas C..



Country
Canada
China
Germany
India
Italy
Japan
Russia
Ukraine
United Kingdom
United States

TOP
10

China vs India Internal Factors

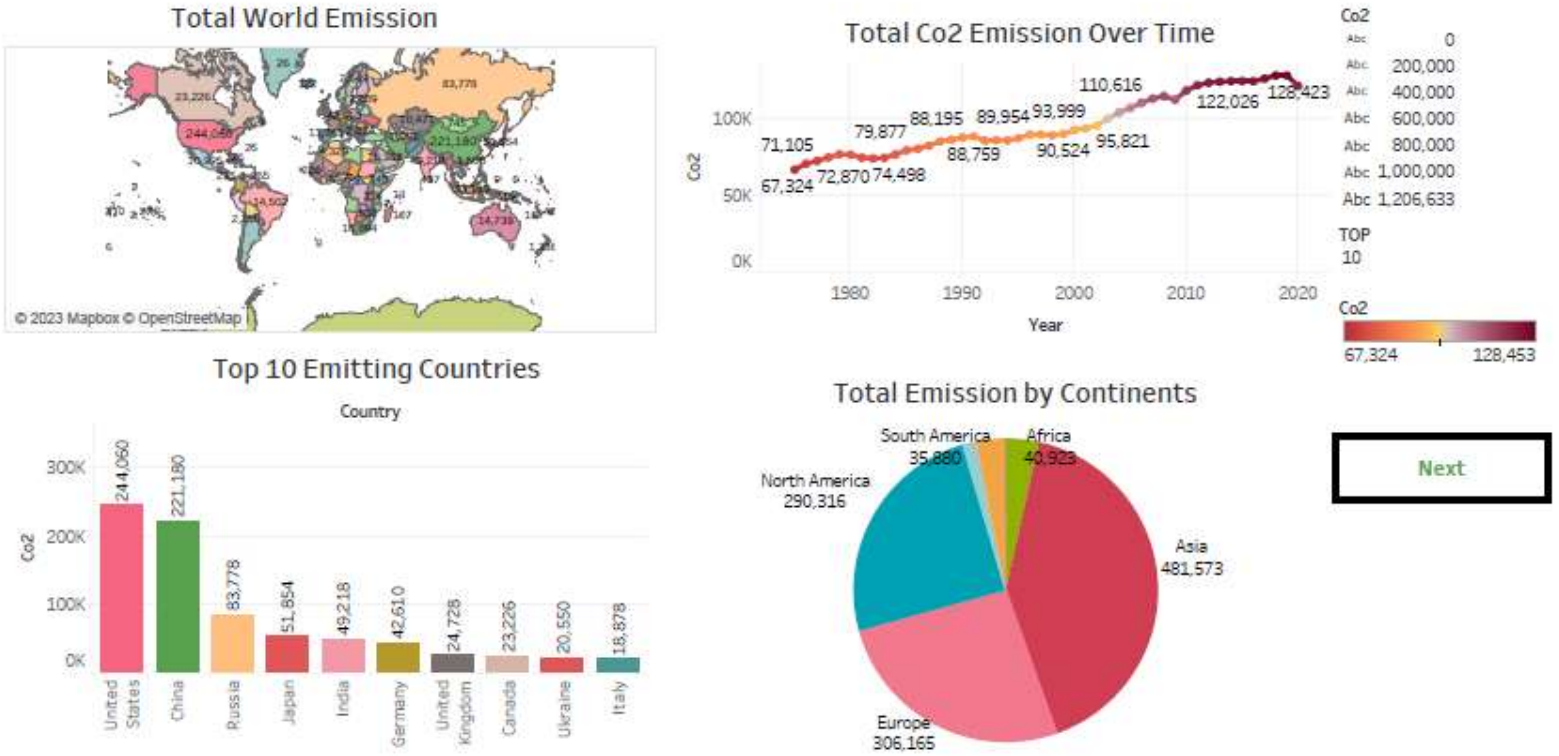


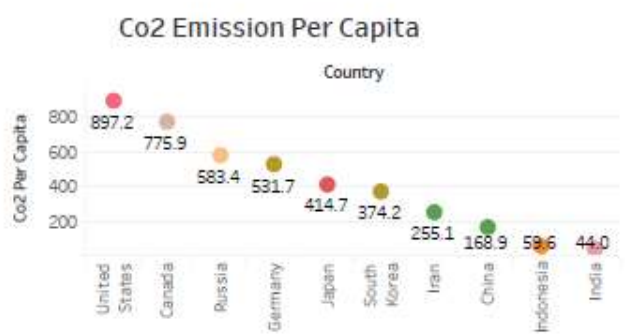
Cement Co2, Coal Co2, Flaring Co2, Gas Co2 and Oil Co2 for each Country. Color shows details about Cement Co2, Coal Co2, Flaring Co2, Gas Co2 and Oil Co2. The view is filtered on Country, which keeps China and India.

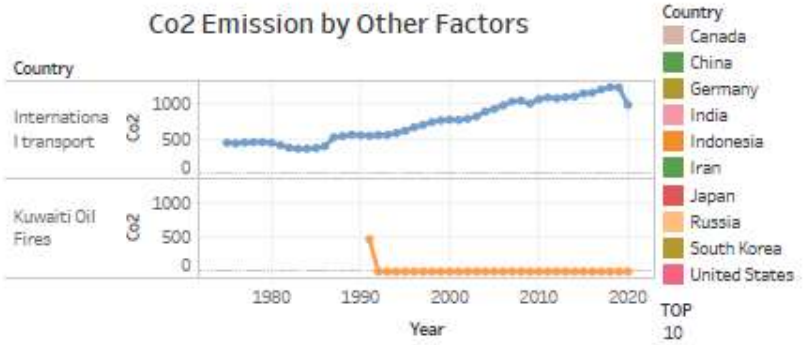
Dashboard

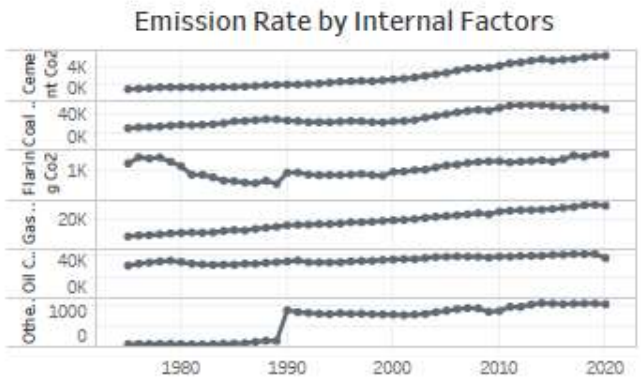
- A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

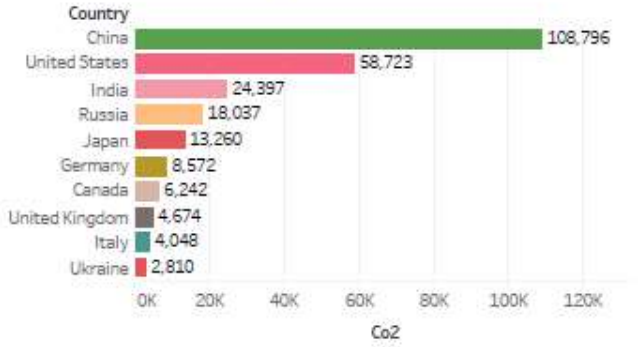
TASK 4
DASHBOARD







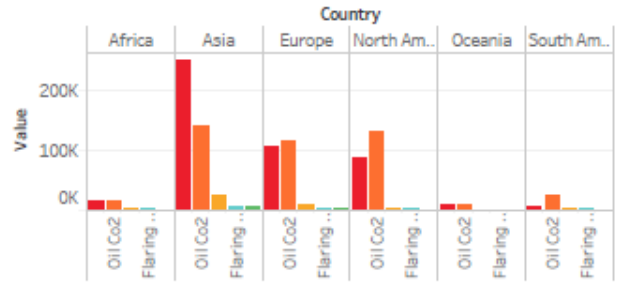




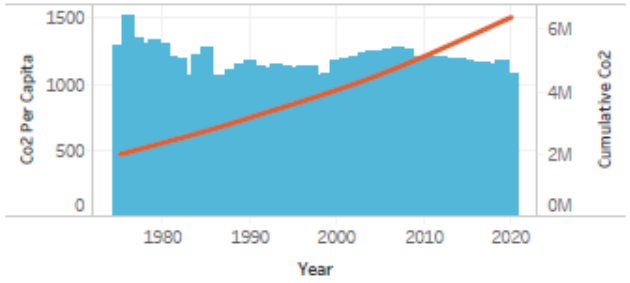
previous

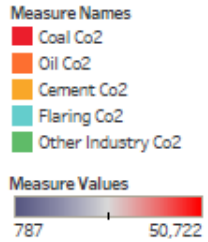
Next

Continent Wise Contibution by Internal Factors

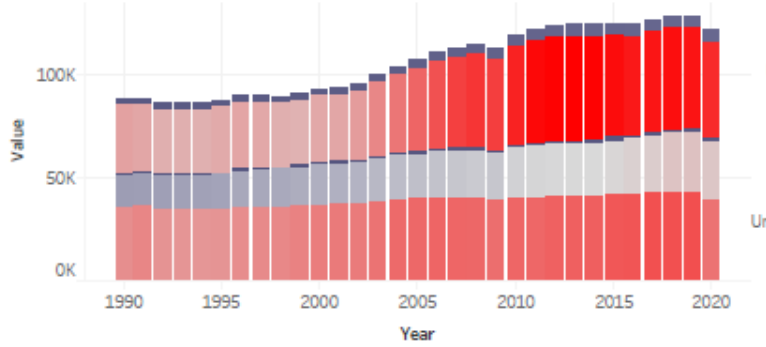


Cummulative Co2 and Co2 per Capita Over Years

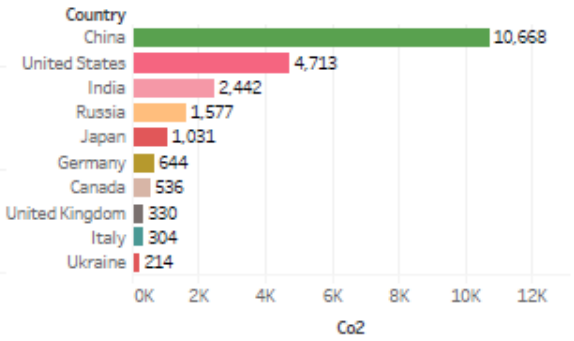




Co2 Emission from 1990 to 2020 based on Internal Factors



Co2 Emission in 2020

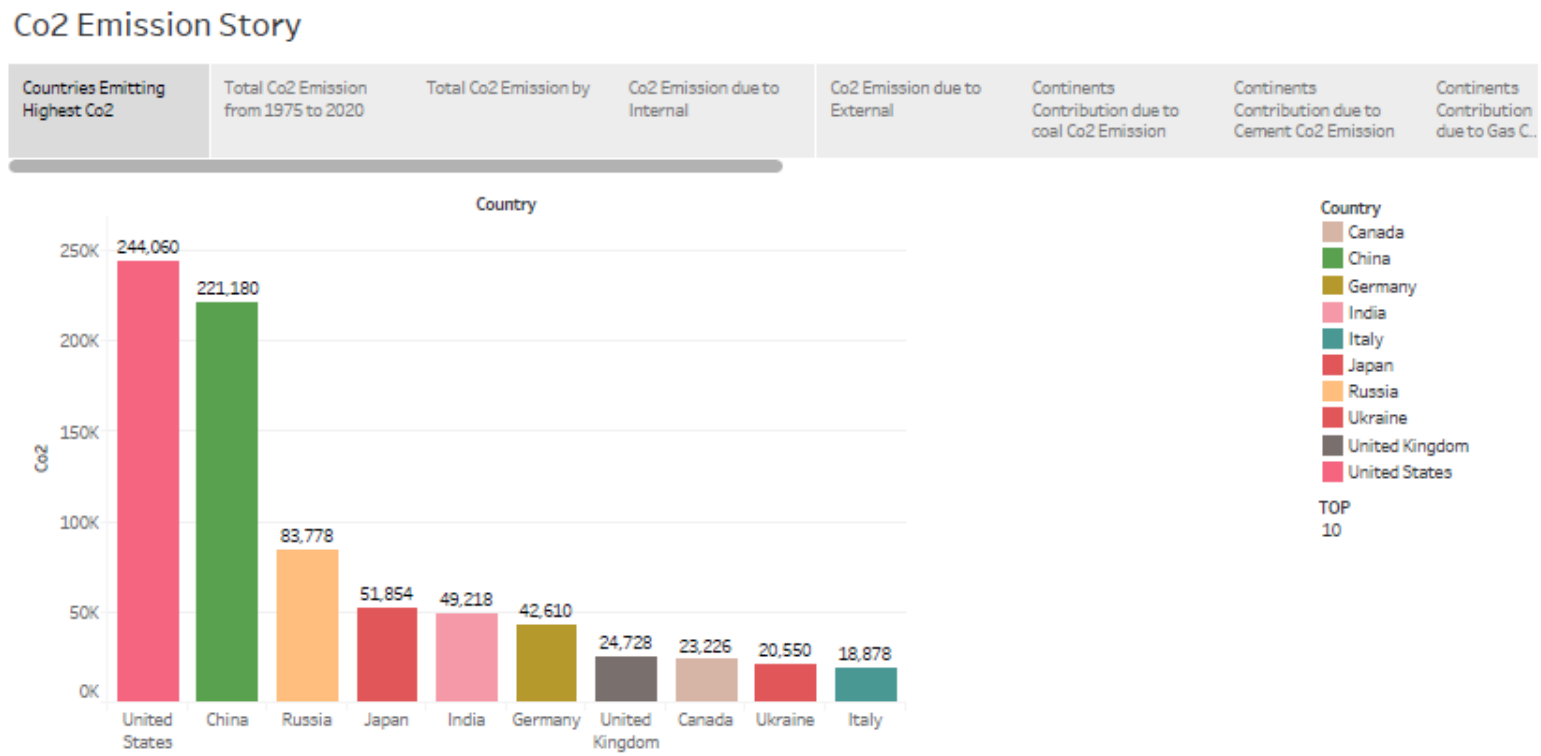


Home

Story

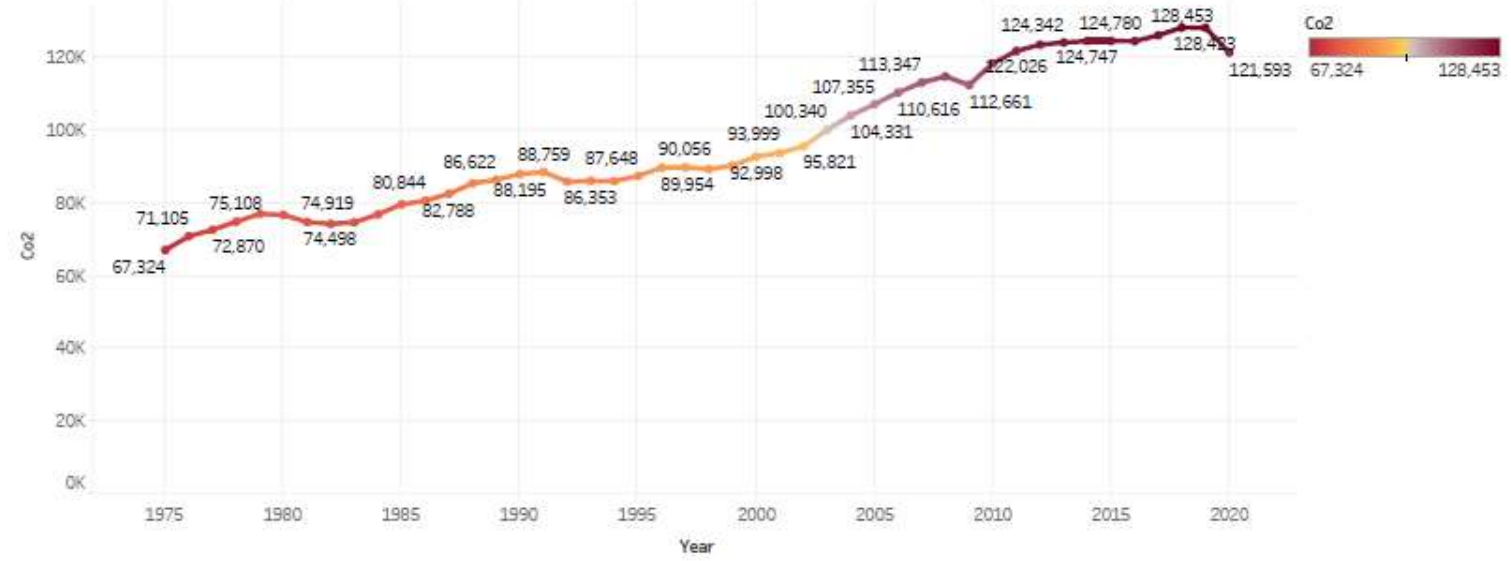
- A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

TASK 5 STORY


Co2 Emission Story
Countries Emitting Highest Co2
Total Co2 Emission from 1975 to 2020
Total Co2 Emission by
Co2 Emission due to Internal
Co2 Emission due to External
Continents Contribution due to coal Co2 Emission
Continents Contribution due to Cement Co2 Emission
Continents Contribution due to Gas C..
Country
Co2
250K
200K
150K
100K
50K
0K
244,060
221,180
83,778
51,854
49,218
42,610
24,728
23,226
20,550
18,878
United States
China
Russia
Japan
India
Germany
United Kingdom
Canada
Ukraine
Italy
Country
Canada
China
Germany
India
Italy
Japan
Russia
Ukraine
United Kingdom
United States
TOP
10

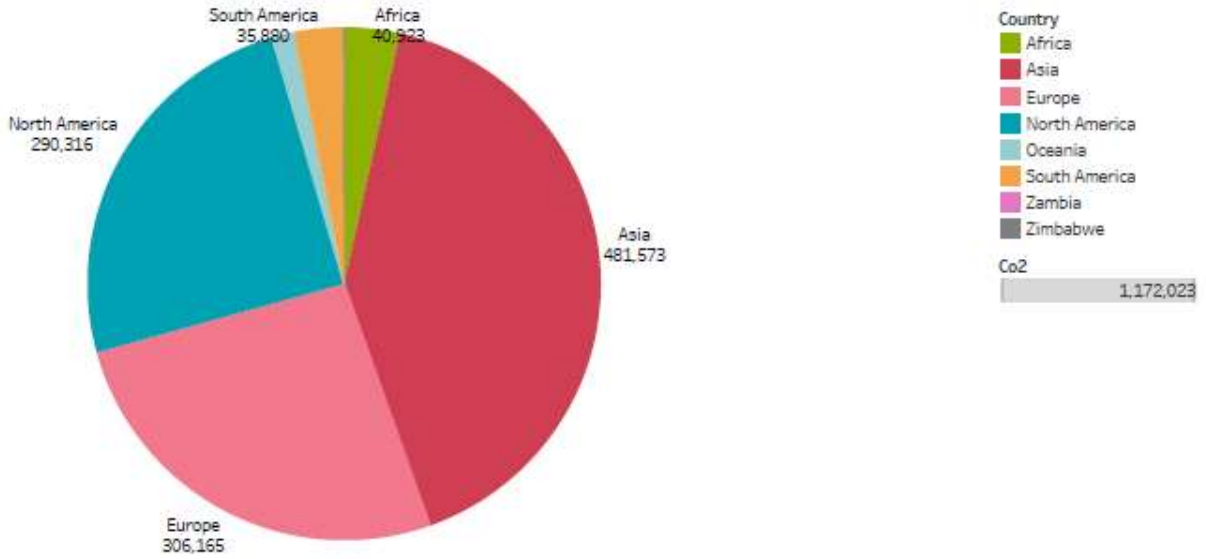
Co2 Emission Story

Countries Emitting Highest Co2 | **Total Co2 Emission from 1975 to 2020** | Total Co2 Emission by | Co2 Emission due to Internal | Co2 Emission due to External | Continents Contribution due to coal Co2 Emission | Continents Contribution due to Cement Co2 Emission | Continents Contribution due to Gas C..



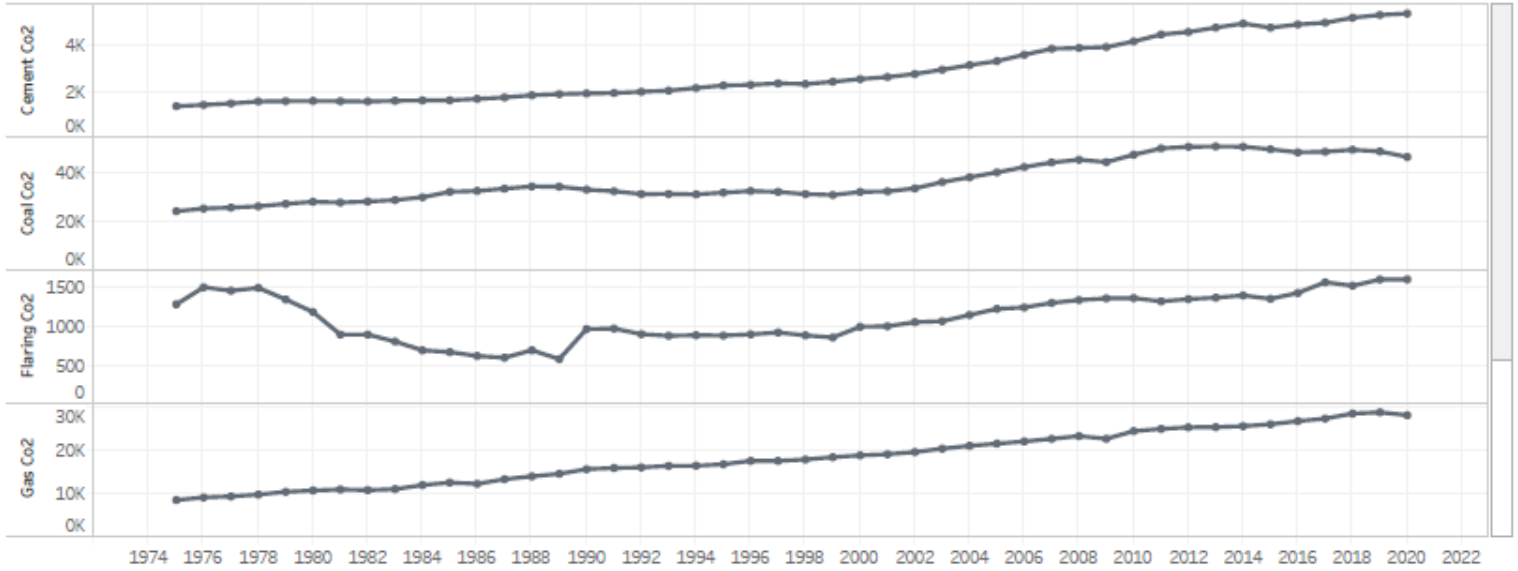
Co2 Emission Story

Countries Emitting Highest Co2	Total Co2 Emission from 1975 to 2020	Total Co2 Emission by	Co2 Emission due to Internal	Co2 Emission due to External	Continents Contribution due to coal Co2 Emission	Continents Contribution due to Cement Co2 Emission	Continents Contribution due to Gas C..



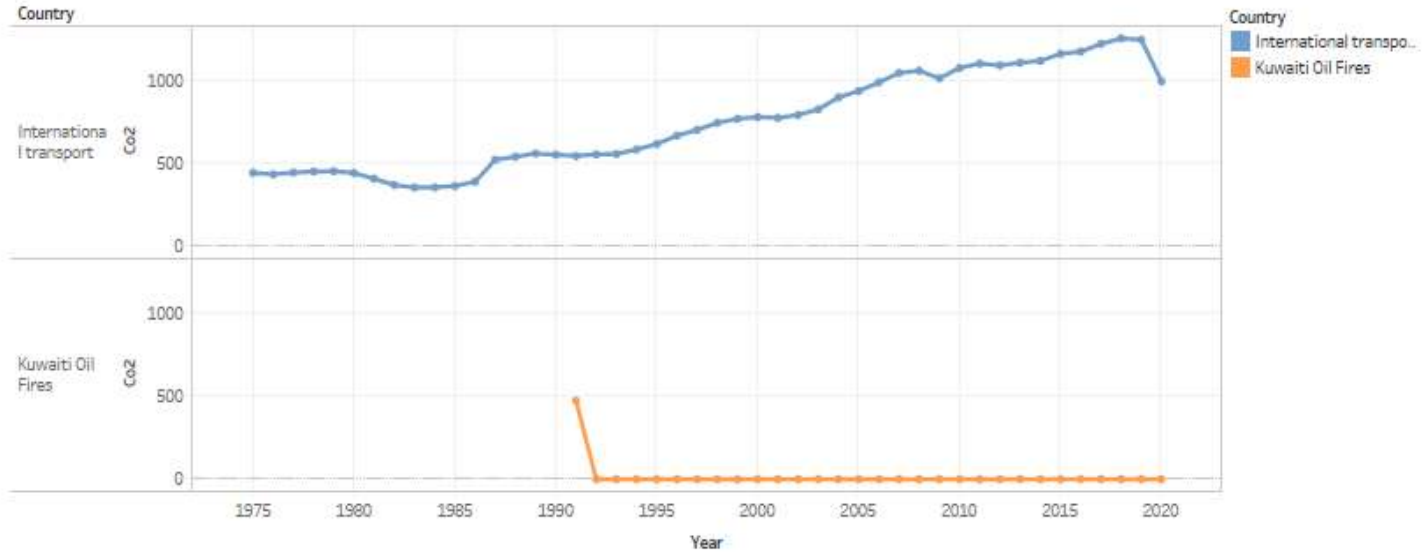
Co2 Emission Story

Countries Emitting Highest Co2 | Total Co2 Emission from 1975 to 2020 | Total Co2 Emission by | **Co2 Emission due to Internal** | Co2 Emission due to External | Continents Contribution due to coal Co2 Emission | Continents Contribution due to Cement Co2 Emission | Continents Contribution due to Gas C..



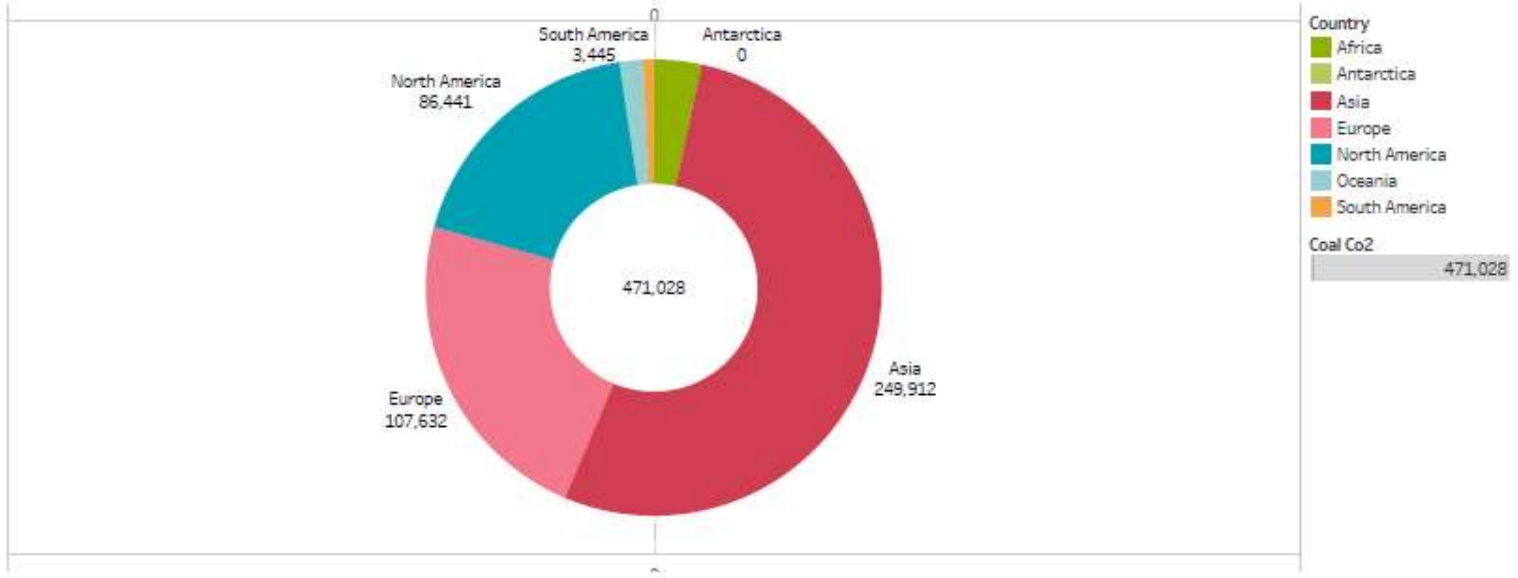
Co2 Emission Story

Cou ntri es ..	Total Co2 Emission from 1975 to 2020	Total Co2 Emission by	Co2 Emission due to Internal	Co2 Emission due to External	Continents Contribution due to coal Co2 Emission	Continents Contribution due to Cement Co2 Emission	Continents Contribution due to Gas Co2 Emission	Contin ents C ontri..



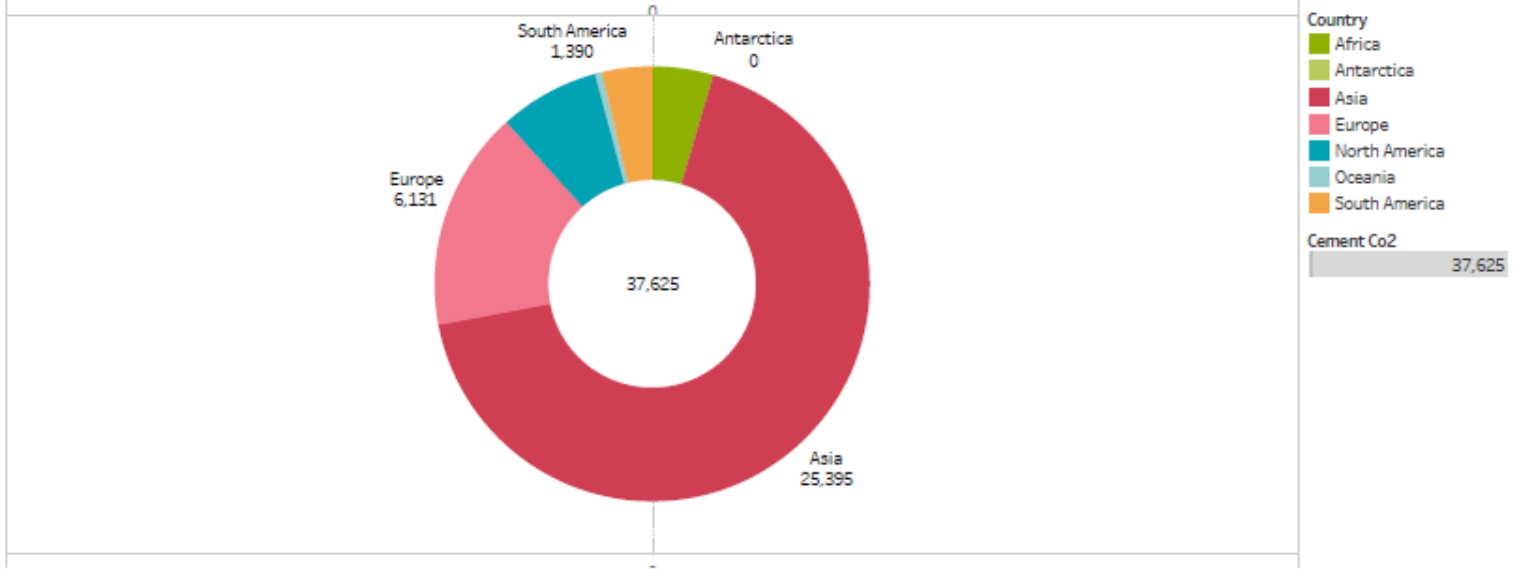
Co2 Emission Story

Tot al C o2 .. | Total Co2 Emission by | Co2 Emission due to Internal | Co2 Emission due to External | **Continents Contribution due to coal Co2 Emission** | Continents Contribution due to Cement Co2 Emission | Continents Contribution due to Gas Co2 Emission | Continents Contribution due toFlaring Co2 Emission | Contin ents C ontri..



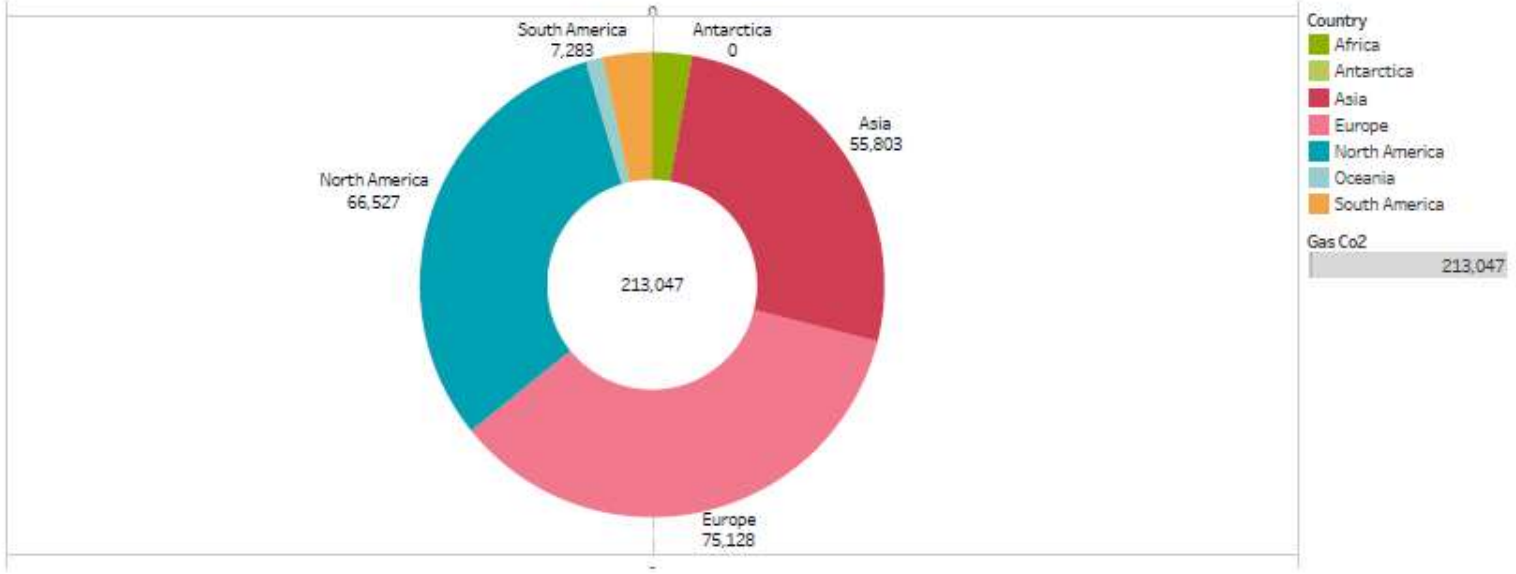
Co2 Emission Story

Total Co2 ..	Co2 Emission due to Internal	Co2 Emission due to External	Continents Contribution due to coal Co2 Emission	**Continents Contribution due to Cement Co2 Emission**	Continents Contribution due to Gas Co2 Emission	Continents Contribution due toFlaring Co2 Emission	Continents Contribution due to Oil Co2 Emission	Co2 Emission Ove..



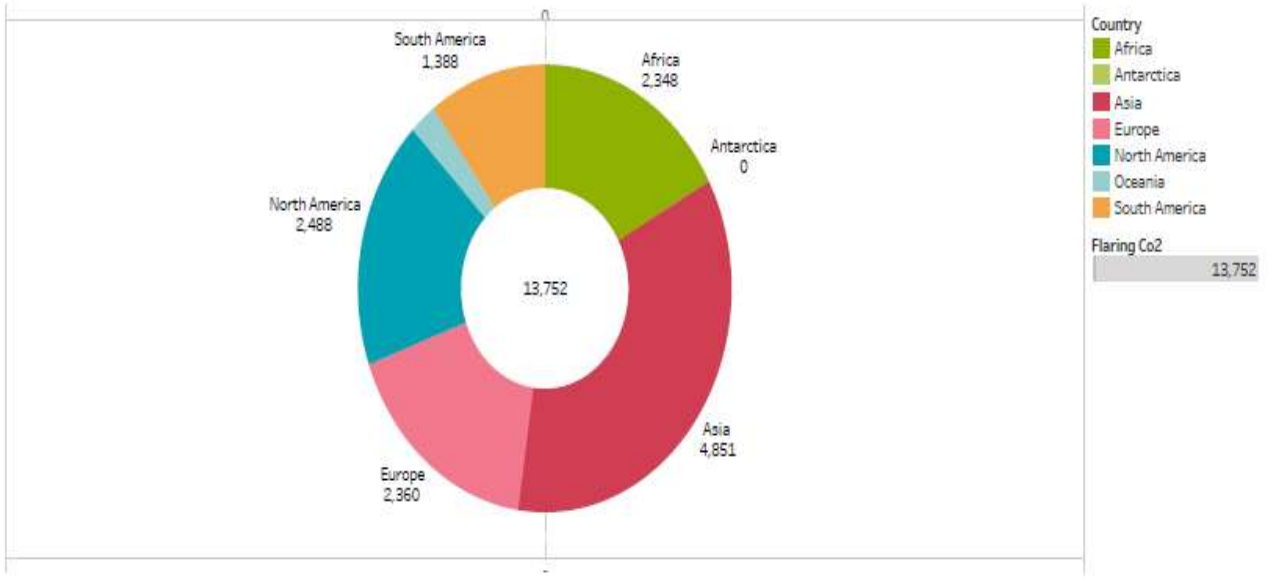
Co2 Emission Story

Co2 Emi ssi... | Co2 Emission due to External | Continents Contribution due to coal Co2 Emission | Continents Contribution due to Cement Co2 Emission | **Continents Contribution due to Gas Co2 Emission** | Continents Contribution due toFlaring Co2 Emission | Continents Contribution due to Oil Co2 Emission | Co2 Emission Over past 10 years | Co2 E missio n Indi...



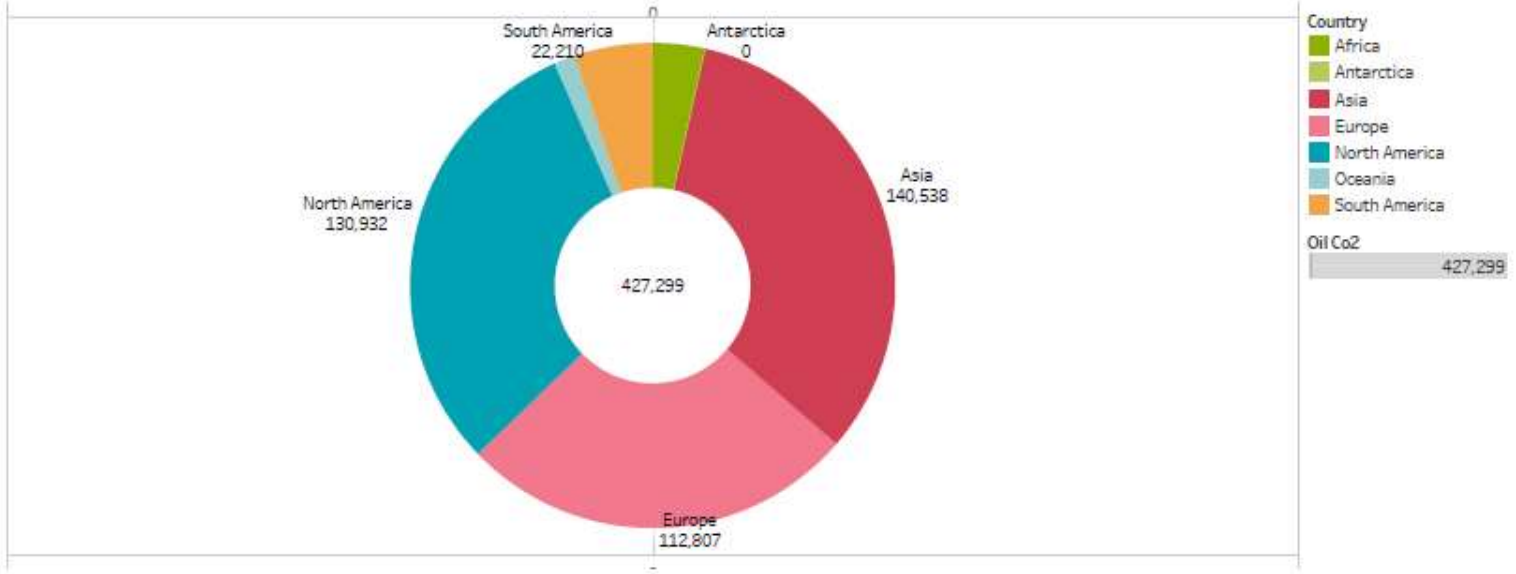
Co2 Emission Story

Co2 Emi ssi.. | Continents Contribution due to coal Co2 Emission | Continents Contribution due to Cement Co2 Emission | Continents Contribution due to Gas Co2 Emission | **Continents Contribution due toFlaring Co2 Emission** | Continents Contribution due to Oil Co2 Emission | Co2 Emission Over past 10 years | Co2 Emission India vs United States | Overal Contri butio..



Co2 Emission Story

Con tine nt.. | Continents Contribution due to Cement Co2 Emission | Continents Contribution due to Gas Co2 Emission | Continents Contribution due toFlaring Co2 Emission | **Continents Contribution due to Oil Co2 Emission** | Co2 Emission Over past 10 years | Co2 Emission India vs United States | Overal Contribution by India and China in Co2 Emission | Cumm ulative Co2 v..



Co2 Emission Story

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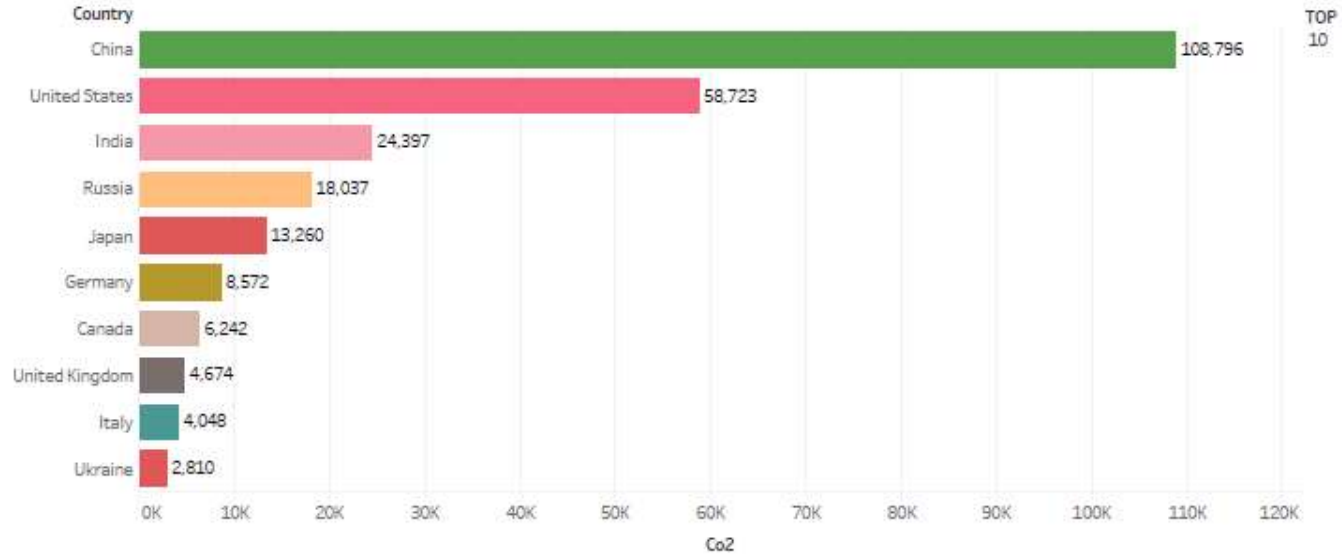

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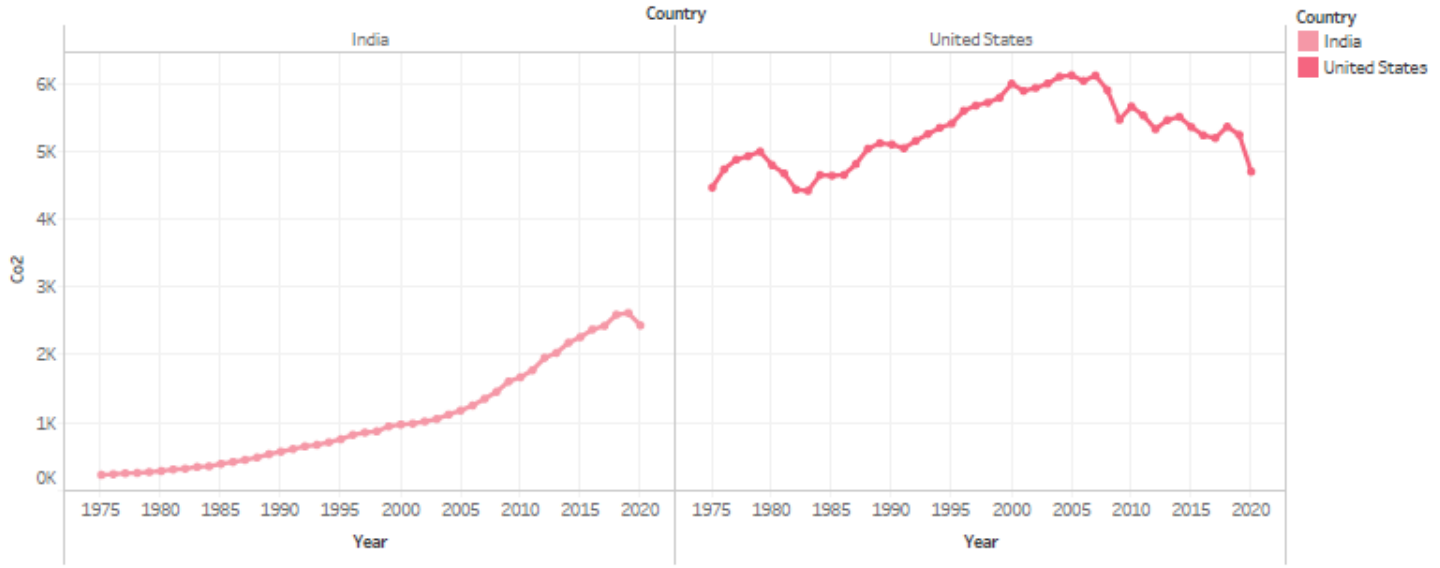
Continents Contribution due to Gas C.. | Continents Contribution due toFlaring Co2 Emission | Continents Contribution due to Oil Co2 Emission | Co2 Emission Over past 10 years | **Co2 Emission India vs United States** | Overal Contribution by India and China in Co2 Emission | Cummulative Co2 vs Co2 per capita Over years | Co2 Emission in 2020



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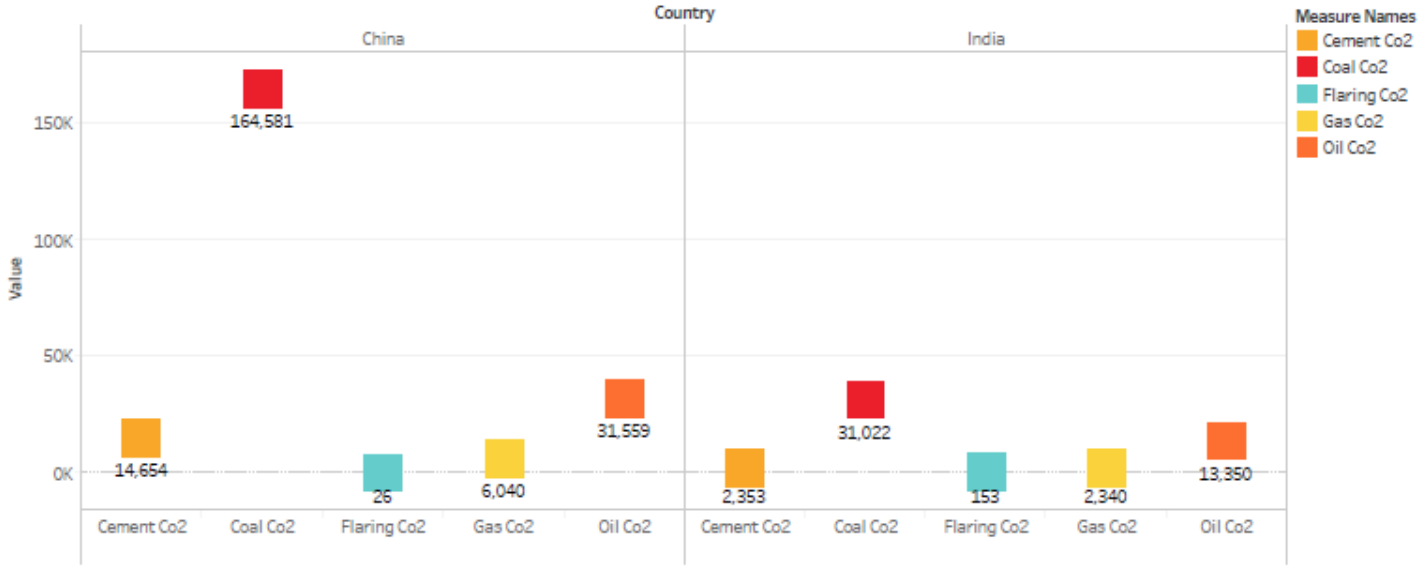
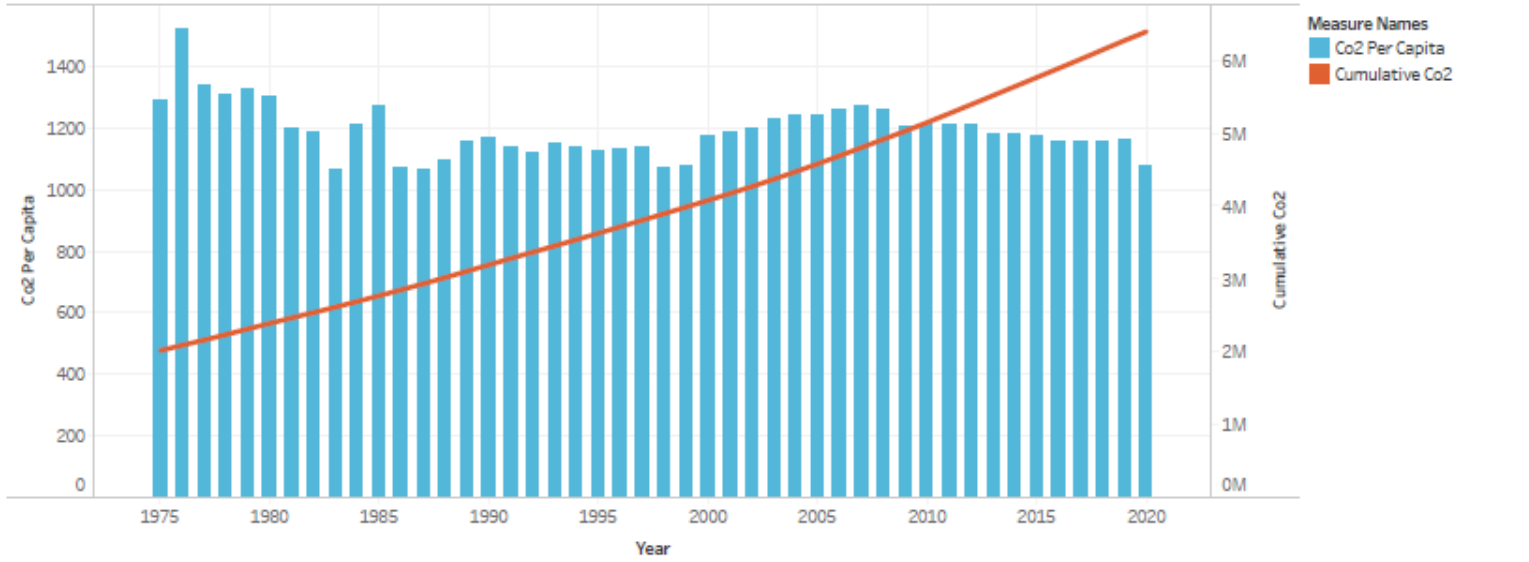


Co2 Emission Story

Continents Contribution due to Gas C.. | Continents Contribution due toFlaring Co2 Emission | Continents Contribution due to Oil Co2 Emission | Co2 Emission Over past 10 years | Co2 Emission India vs United States | Overal Contribution by India and China in Co2 Emission | **Cummulative Co2 vs Co2 per capita Over years** | Co2 Emission in 2020



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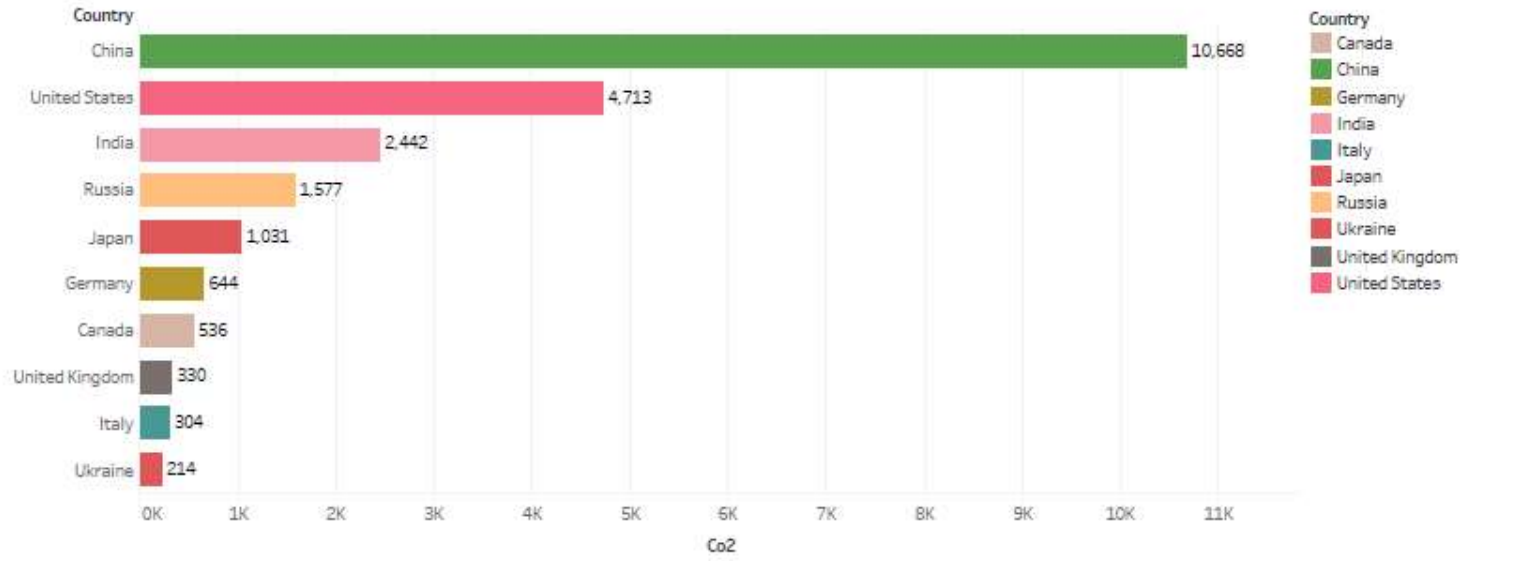

ADVANTAGES

- *Carbon dioxide (co2) is a gas that is very important for the survival of our planet*
- *Plant growth is dependent on carbon dioxide*
- *It can be toxic and very harmful to humans, and is responsible for the 'global warming' effect that is threatening the existence of life on this plan**e**t*

DISADVANTAGES

There are several negative **aspects o**f carbon dioxide:

- If carbon dioxide levels reach higher than 5% in a room , this is usually enough to kill a human being
- Another threat that co2 poses comes in the form of global warming.
- Carbon emissions are causing a gap in our ozone layer .the ozone layers is film around the earth that protects our planet from harmful rays coming from the sun.
- When holes appear in this layers, harmful rays enter the earth’s atmosphere and raise the temperature of the planet .this is know as “greenhouse effect”.

APPLICATION

- Other commercial applications include food and beverage production , metal fabrication , cooling, fire suppression and stimulating plant growth in greenhouses.
- Most commercial applications today involve direct use of co2 .new pathways involve transforming co2 into fuels, chemicals and building materials

CONCLUSION

The rising level of atmospheric co2 could be the one the global natural resource that is progressively increasing food production and total biological output, in a world of otherwise diminishing natural resources of land ,water, energy , minerals ,and fertilizer