

UNEARTHING THE ENVIRONMENT IMPACT OF HUMAN ACTIVITY: A GLOBAL CO₂ EMISSION ANALYSIS

1. INTRODUCTION:

The aim of our visualization is to create awareness among the people related to CO₂ emission by various countries of world.

We discuss the visualization process forward and problem faced during the implementation. It contains the steps from analysing the dataset to construction of visualization tasks.

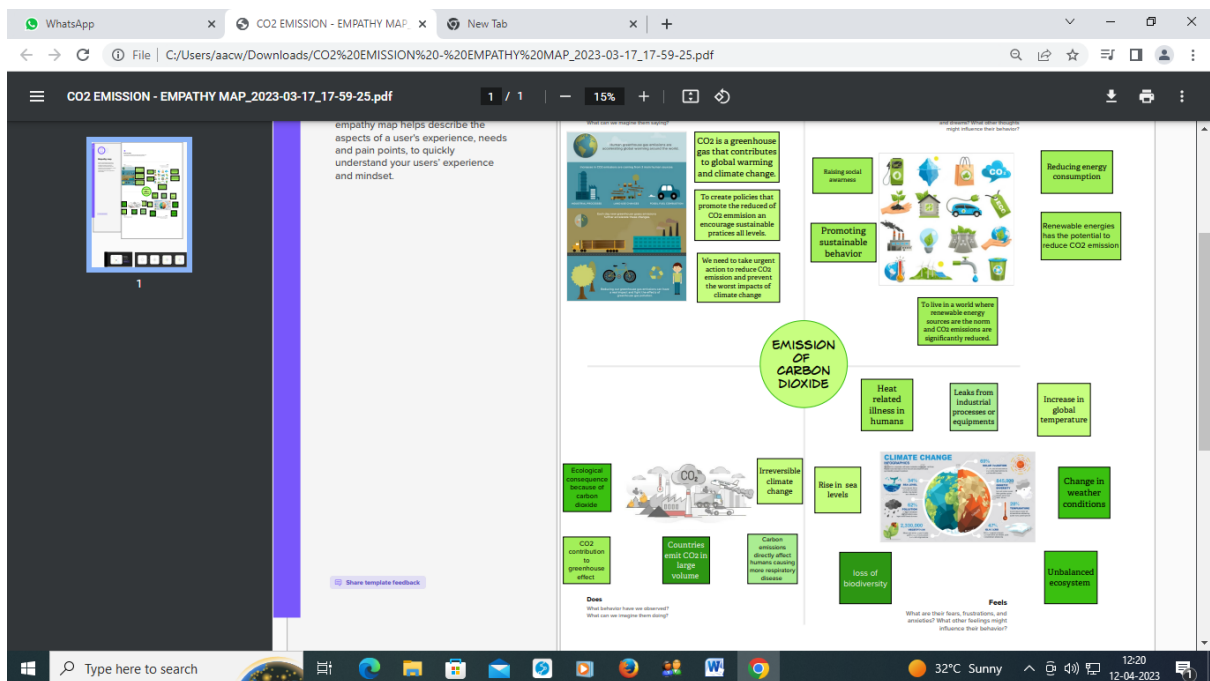
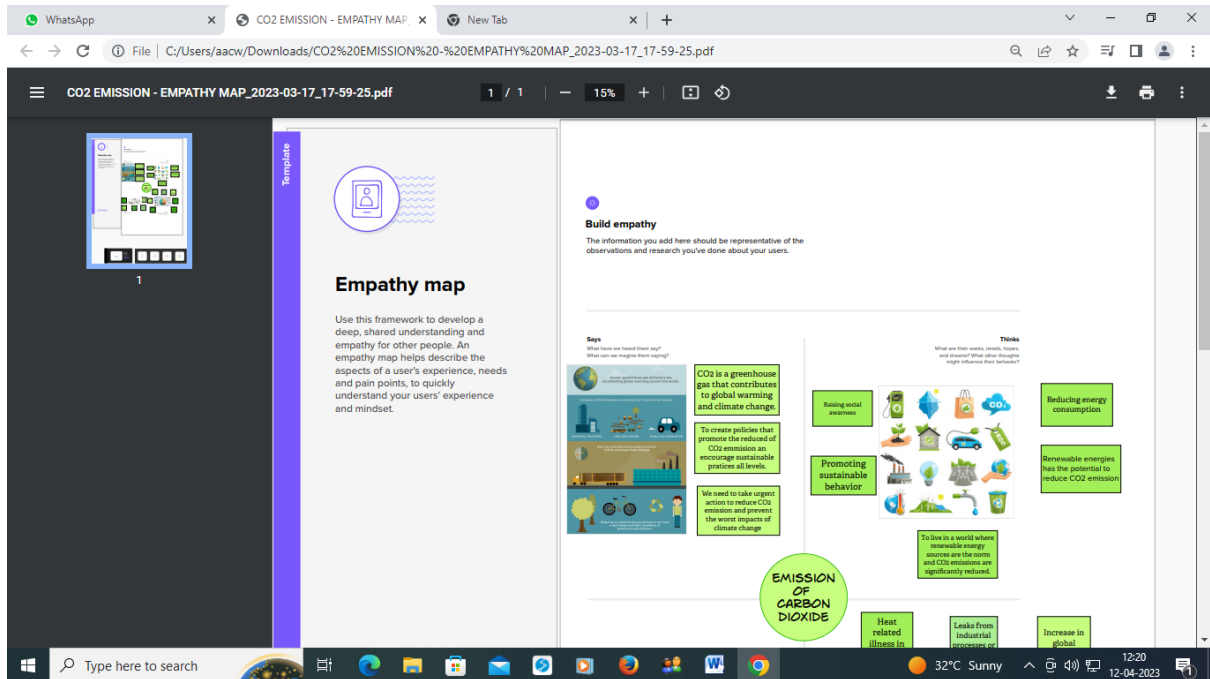
The CO₂ emission from all over the world from 1975 to 2020 dataset is used for the task.

We have used several types of charts to understand CO₂ emission of various countries around the world.

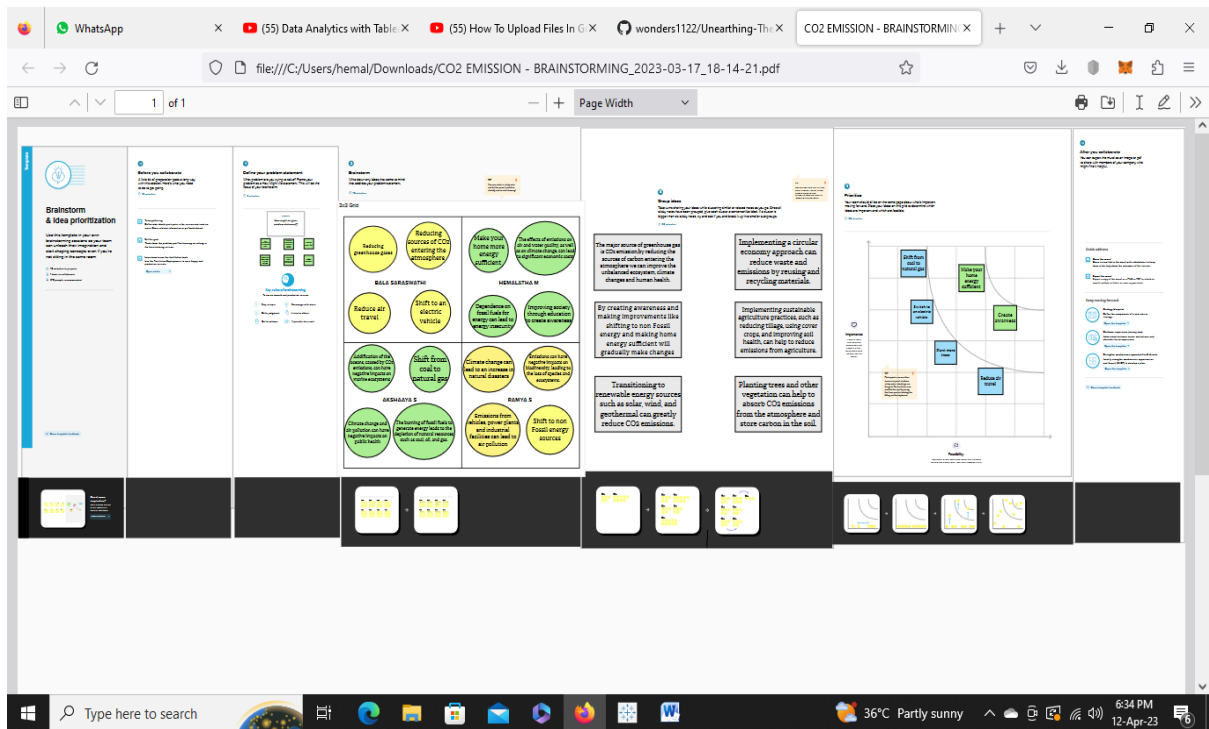


2. PROBLEM DEFINITION AND DESIGN THINKING

2.1 EMPATHY MAP

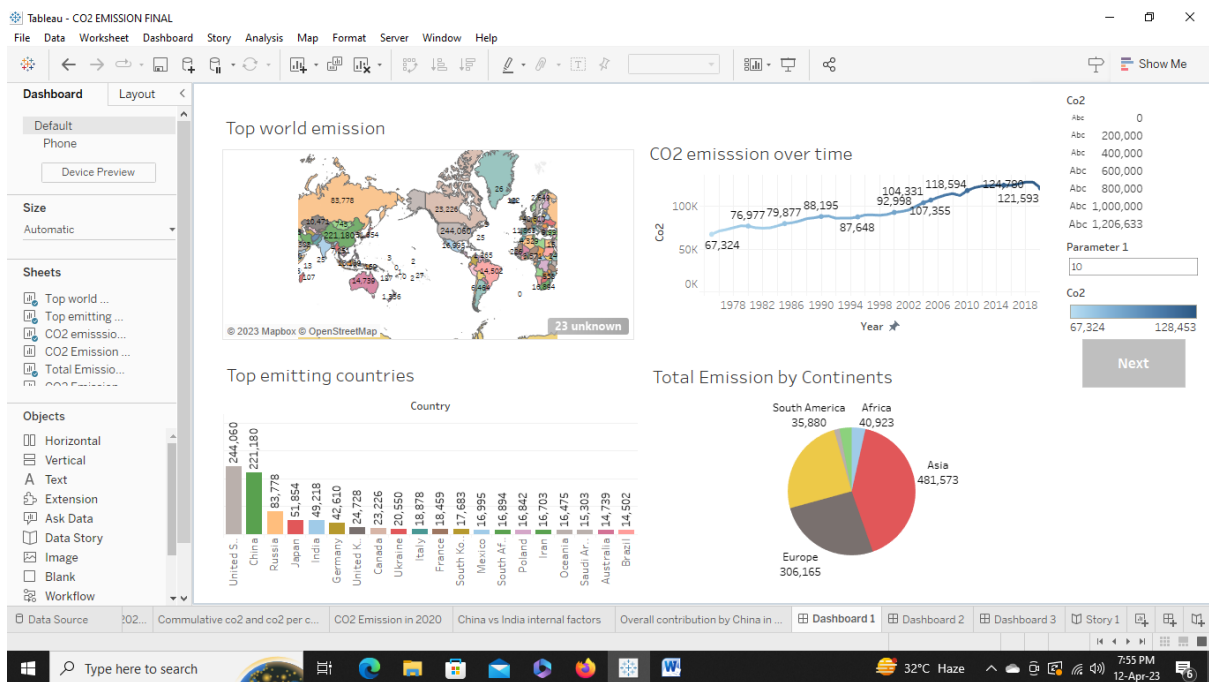


2.2 BRAINSTORMING MAP

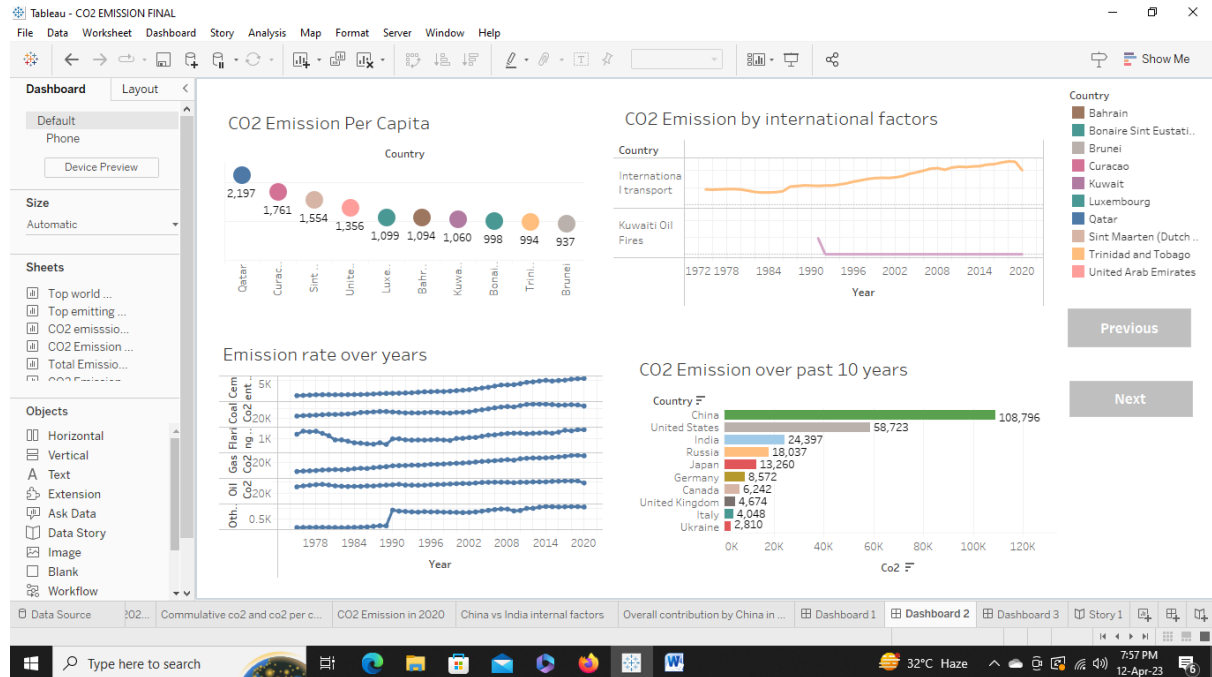


3. RESULT:

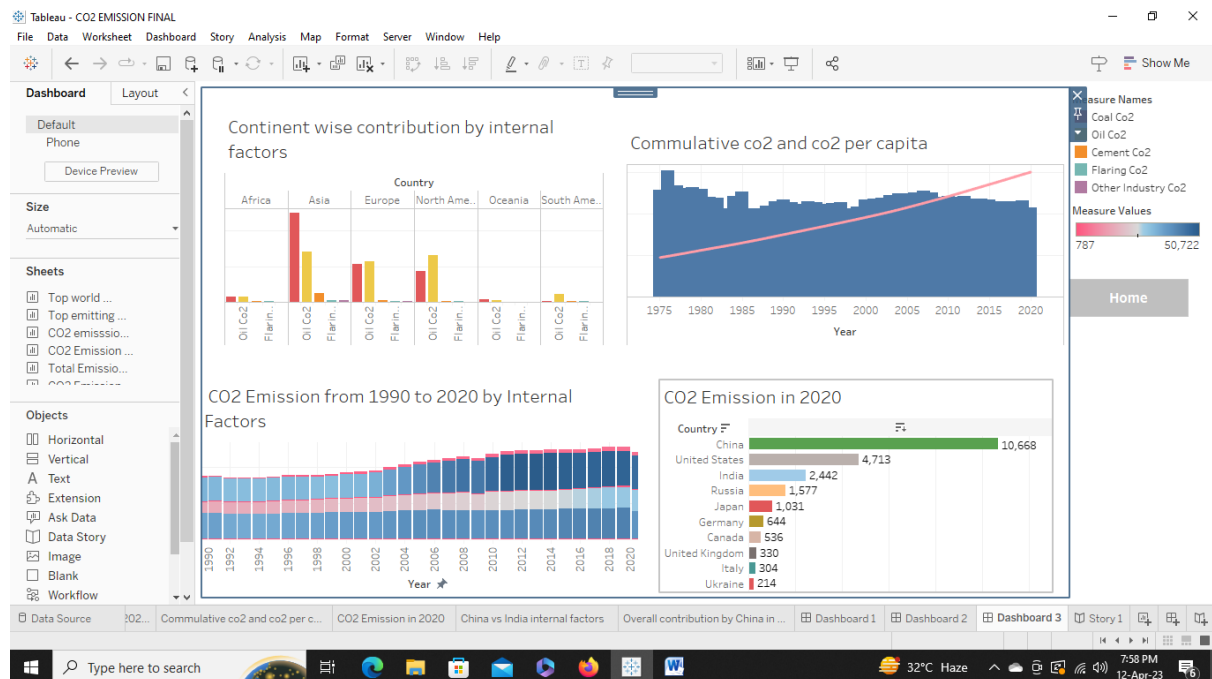
DASHBOARD 1



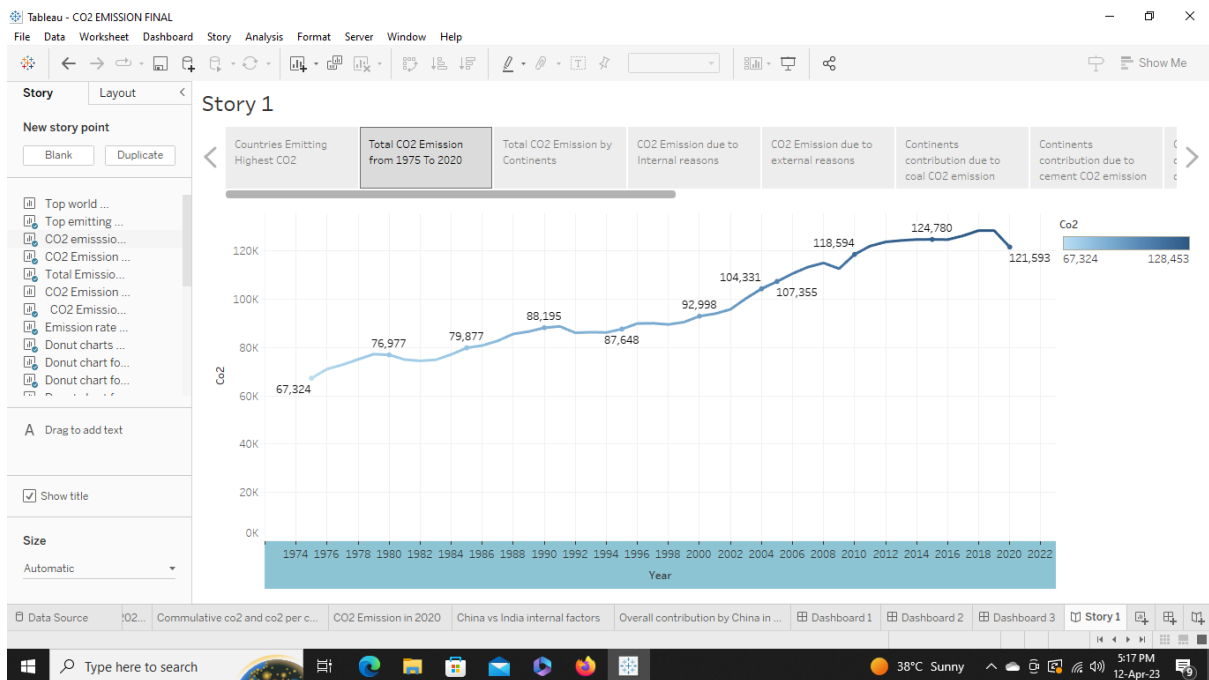
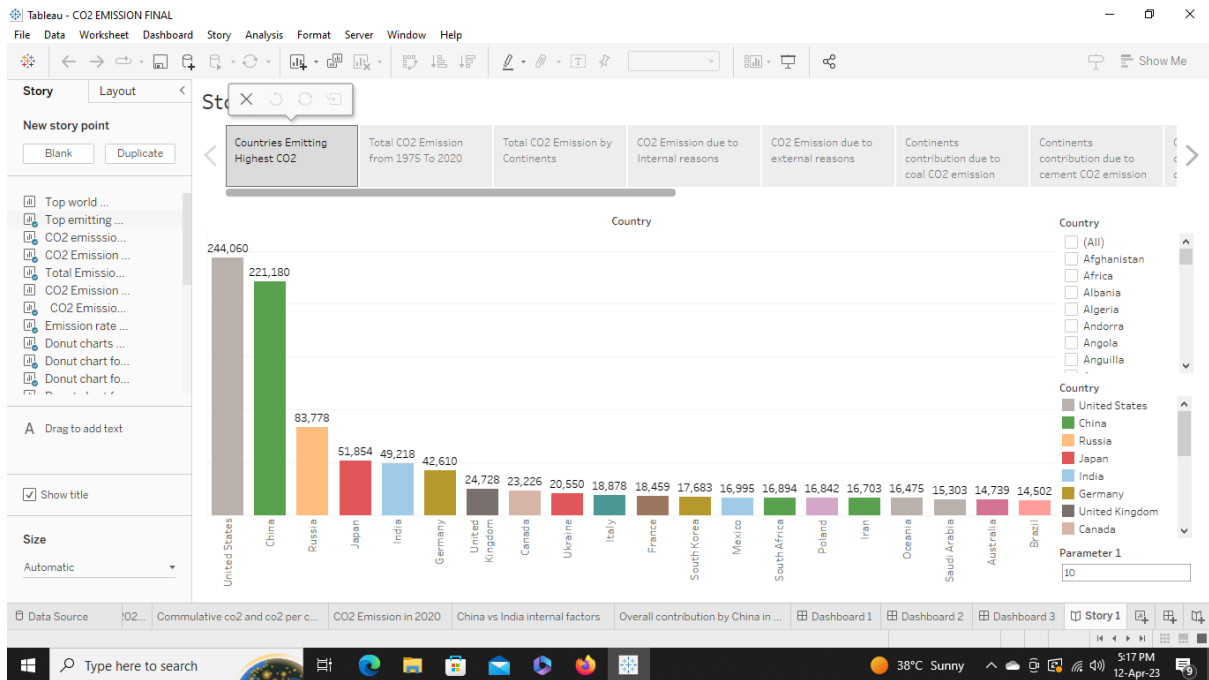
DASHBOARD 2

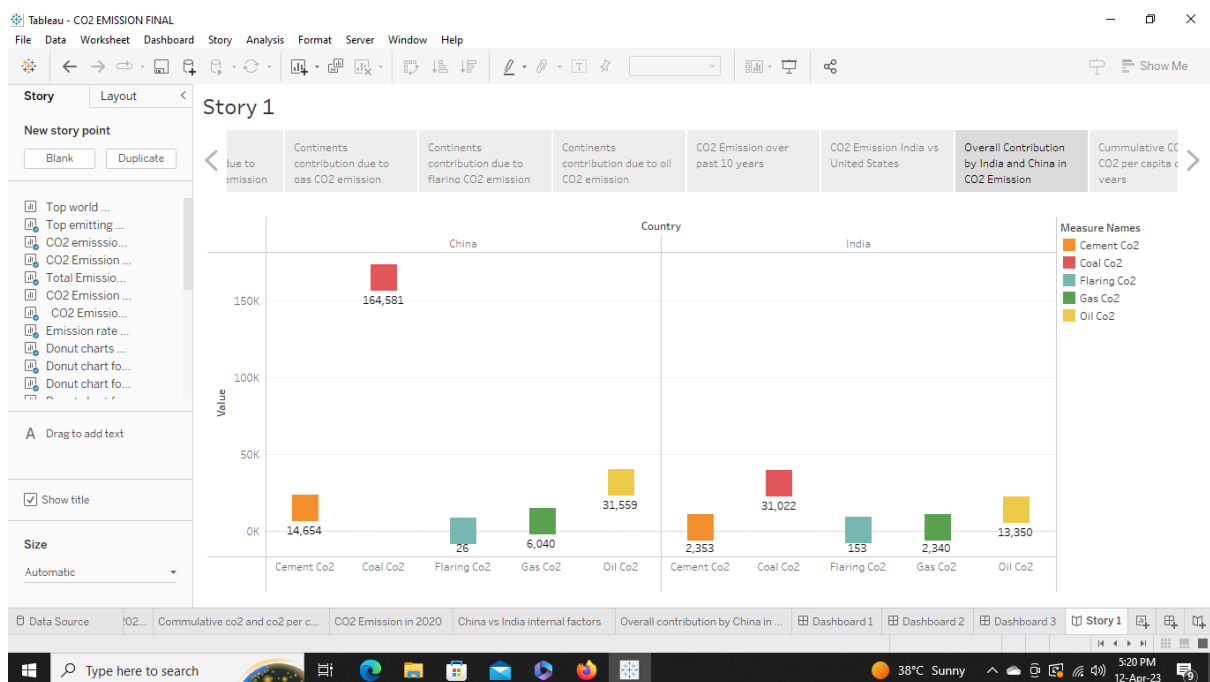
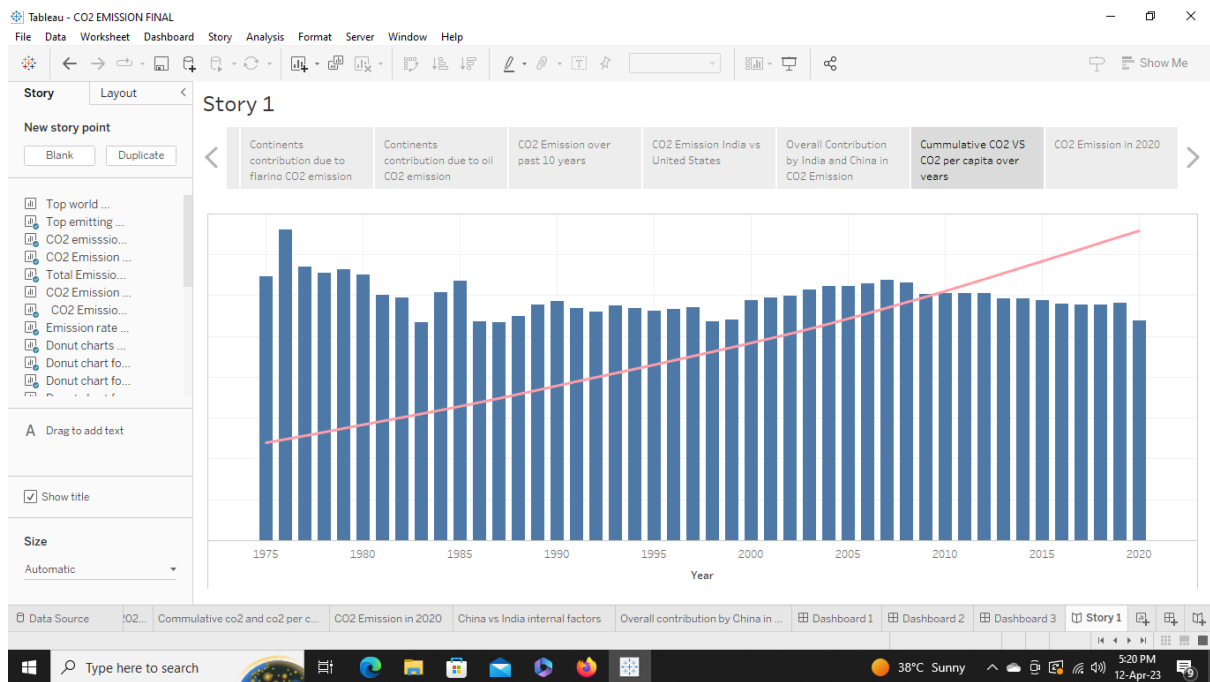


DASHBOARD 3



STORY





NOTE: FOR MORE STORY WE CAN VIEW THROUGH THE GIVEN LINK

https://public.tableau.com/views/CO2EMISSIONFINALSTORY/Story1?:language=en-US&:display_count=n&:origin=viz_share_link

4. Solutions to overcome CO2 emission and its advantages and disadvantages:

- **Save energy at home**

Much of our electricity and heat are powered by coal, oil and gas. Use less energy by lowering your heating and cooling, switching to LED light bulbs and energy-efficient electric appliances.

This is an easy way everyone can start up individually and by using energy sufficient appliances we can save energy and reduce the monthly electricity bills.

- **Walk, bike, or take public transport**

The world's roadways are clogged with vehicles, most of them burning diesel or gasoline. Walking or riding a bike instead of driving will reduce greenhouse gas emissions – and help your health and fitness. For longer distances, consider taking a train or bus.

- **Consider your travel**

Airplanes burn large amounts of fossil fuels, producing significant greenhouse gas emissions mainly CO₂. That makes taking fewer flights one of the fastest ways to reduce the environmental impact.

But air transport is one of the ways to move goods that have been very common in recent years when it comes to speed and distribution protection. Even though the cost of air transportation is high, countries including India and many major countries use this method for transportation of various types of goods.

- **Reduce, reuse, repair & recycle**

Electronics, clothes, and other items we buy cause carbon emissions at each point in production, from the extraction of raw materials to manufacturing and transporting goods to market. To protect our climate, buy fewer things, shop second-hand, repair what you can, and recycle.

This not only reduces CO₂ emission but it also saves money.

- **Change your home's source of energy**

Ask your utility company if your home energy comes from oil, coal or gas. If possible, see if you can switch to renewable sources such as wind or solar. Or install solar panels on your roof to generate energy for your home. Switching

your home from oil, gas or coal-powered energy to renewable sources of energy, such as wind or solar

This method might save energy and reduce electricity bills but setting up these sources requires a huge sum of money and if any problem in the panels it can't be replaced so easily so this may be the disadvantage in this.

- **Switch to an electric vehicle**

If you plan to buy a car, consider going electric, with more and cheaper models coming on the market. In many countries, electric cars help reduce air pollution and cause significantly fewer greenhouse gas emissions than gas or diesel-powered vehicles.

But many electric cars still run on electricity produced from fossil fuels, and the batteries and engines require rare minerals which often come with high environmental and social costs.

- **Speak up and create awareness**

Speak up and get others to join in taking action. It's one of the quickest and most effective ways to make a difference. Talk to your neighbours, colleagues, friends, and family.

5. APPLICATIONS:

The transition from coal to natural gas in the US electricity sector is reducing the industry's water use, research finds. For every megawatt of electricity produced using natural gas instead of coal, the water withdrawn from rivers and groundwater drops by 10,500 gallons, and water consumed for cooling and other plant operations and not returned to the environment drops by 260 gallons.

Natural gas is used in steam turbines and gas turbines to generate electricity.

There are many ways to reduce greenhouse gas emissions from the industrial sector, including energy efficiency, fuel switching, combined heat and power, use of renewable energy, and the more efficient use and recycling of materials.

We can reduce sources of CO₂ entering the atmosphere by

Planting trees Trees absorb and store the carbon dioxide in the atmosphere, but they can no longer absorb carbon once they are cut down. Planting trees is among the most inexpensive, natural ways to take climate action and reduce our negative environmental impact.

Switching to clean energy Solar panels, wind turbines, and geothermal energy are all energy sources with a higher level of sustainability, produce low carbon emissions, and lower our dependence on natural gas and resource harvesting.

We can reduce air travel by using other modes of transport instead of flights.

We can make our home more energy efficient by

- Sealing doors and windows with weather stripping to prevent cooled and heated air from escaping
- Using air conditioning infrequently.
- Replacing lights with LED light bulbs that use less energy.

We can shift to an electric vehicle for our daily uses.

6. CONCLUSION:

The pace of global warming is accelerating and the scale of impact is devastating majorly because of Co2 emission

- By reducing the source of carbon entering the atmosphere should be reduced to maintain unbalanced ecosystem, climatic change and human health.
- By creating awareness making improvements like shifting to non-fossil energy and making home energy sufficient will gradually make changes.

7. FUTURE SCOPE:

- The Green Industrial Revolution Is Ready to Accelerate .
Recent policy developments are pushing big manufacturers to get serious about decarbonizing their operations and supply chains.
- Make your driving more efficient:
When you drive, cut back on fossil fuel emissions by accelerating slowly and using the air conditioning sparingly. Check your tire pressure for better fuel economy, carpool when possible, and consider purchasing a hybrid or electric vehicle if you want a new car.
- Carbon offsetting:
Balancing remaining carbon dioxide emissions with carbon offsets is the process of reducing or avoiding greenhouse gas emissions or removing carbon dioxide from the atmosphere to make up for emissions elsewhere. If the total greenhouse gases emitted is equal to the total amount avoided or

removed, then the two effects cancel each other out and the net emissions are 'neutral'.

- Reforestation (occasionally, re afforestation) is the natural or intentional restocking of existing forests and woodlands (forestation) that have been depleted, usually through deforestation but also after clear cutting. Reforestation, the restocking of existing forests or woodlands that have previously been depleted, is an example of Carbon Offsetting, the counteracting of carbon dioxide emissions with an equivalent reduction of carbon dioxide in the atmosphere. Carbon offsetting can reduce a companies overall carbon footprint by offering a carbon credit.