Unearthing the Environmental Impact of Human Activity: A Global CO2 Emission Analysis

PROJECT BY:

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INTRODUCTION:

CARBON DIOXIDE EMISSIONS ARE THE PRIMARY DRIVER OF GLOBAL CLIMATE CHANGE. IT'S WIDELY RECOGNISED THAT TO AVOID THE WORST IMPACTS OF CLIMATE CHANGE, THE WORLD NEEDS TO URGENTLY REDUCE EMISSIONS. BUT, HOW THIS RESPONSIBILITY IS SHARED BETWEEN REGIONS, COUNTRIES, AND INDIVIDUALS HAS BEEN AN ENDLESS POINT OF CONTENTION IN INTERNATIONAL DISCUSSIONS.

THIS DEBATE ARISES FROM THE VARIOUS WAYS IN WHICH EMISSIONS ARE COMPARED: AS ANNUAL EMISSIONS BY COUNTRY; EMISSIONS PER PERSON; HISTORICAL CONTRIBUTIONS; AND WHETHER THEY ADJUST FOR TRADED GOODS AND SERVICES. THESE METRICS CAN TELL VERY DIFFERENT STORIES.

The Steps of our project is given below:

- ❖ Define Problem / Problem Understanding.

- ❖ Data Collection & Preparation.

- ❖ Data Visualization.
- ❖ Dashboard.
- ❖ Story.
- ❖ Web Integration.
- ❖ Project Documentation & video Demonstration.

PROBLEM DEFINITION & DESIGN THINKING:

Empathy map

CO_2 Emissions in 2022 provides a complete picture of energy-related greenhouse gas emissions in 2022. The report finds that global growth in emissions was not as high as some had originally feared amid the disruptions caused by the global energy crisis. This latest release brings together the IEA's latest analysis, combining the Agency's estimates of CO_2 emissions from all energy sources and industrial processes, as well as providing

information on energy-related methane and nitrous oxide emissions.

This report is part of the IEA's support of the first global stocktake of the Paris Agreement, which will be finalized in the run up to COP28, the next UN Climate Change Conference, at the end of 2023..

Template

Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

Need some inspiration?

See a finished version of this template to kickstart your work.

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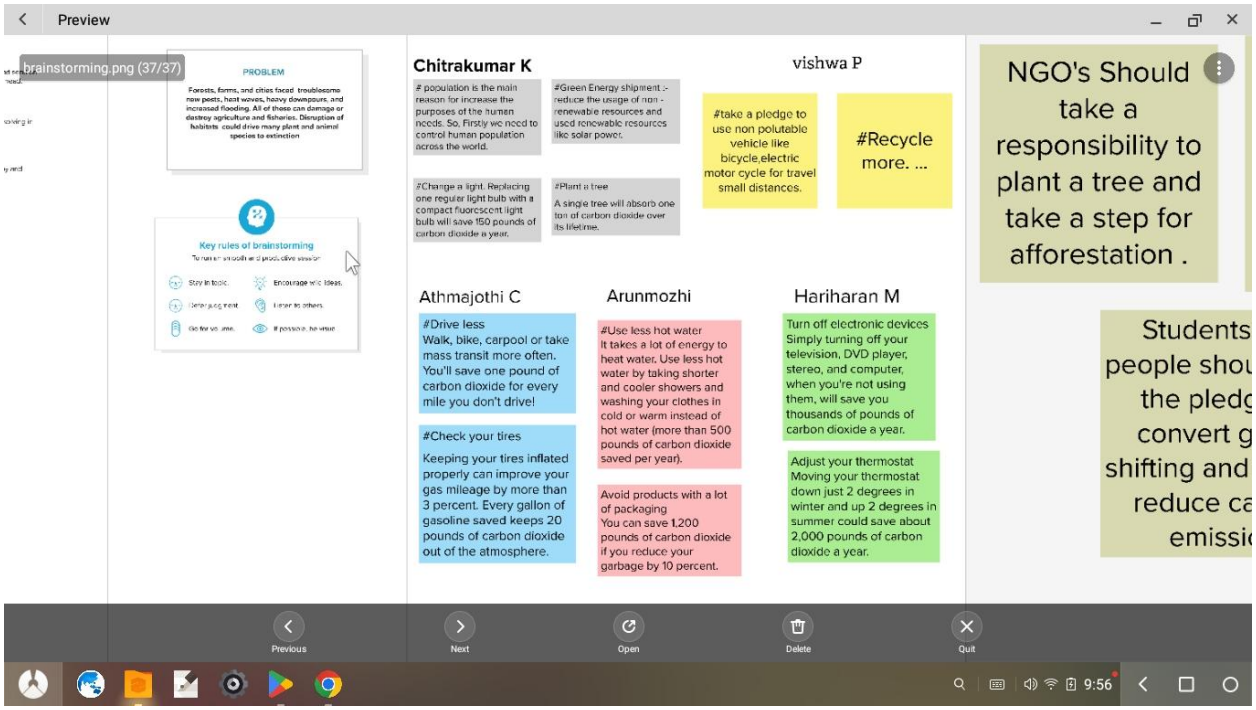
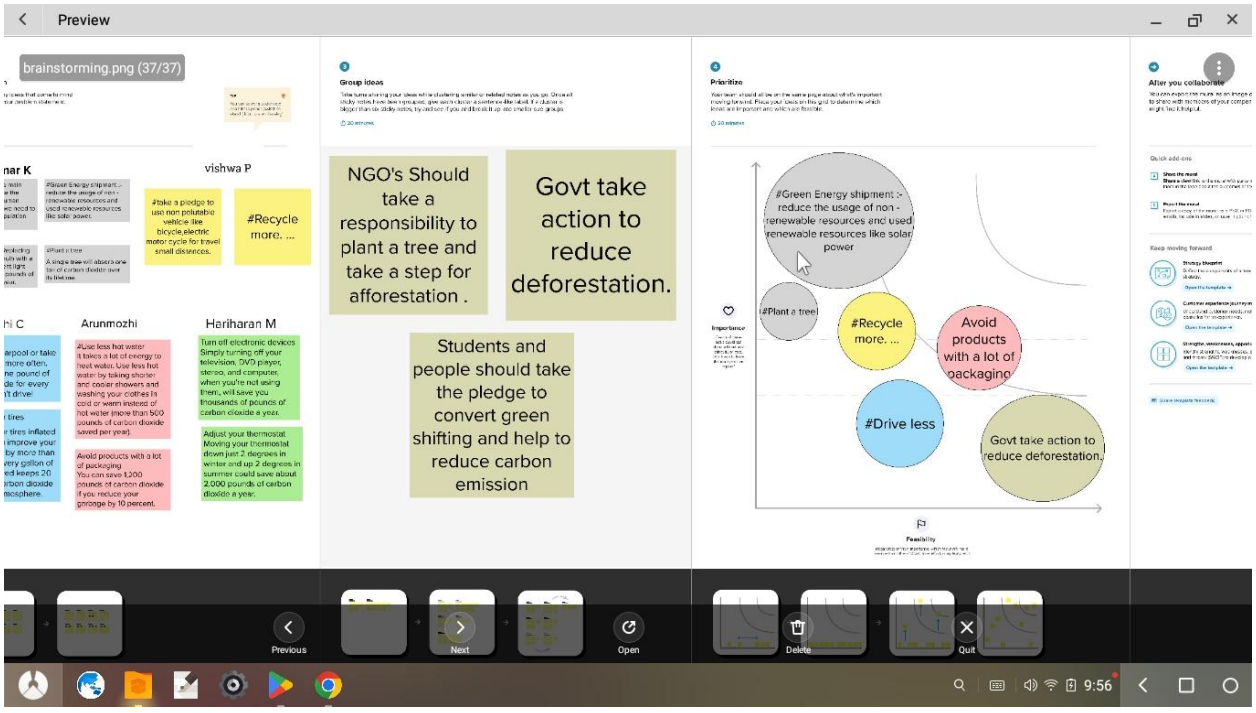
Ideation and Brainstorming Map

Global energy-related CO2 emissions grew by 0.9% or 321 Mt in 2022, reaching a new high of over 36.8 Gt. Following two years of exceptional oscillations in energy use and emissions, caused in part by the Covid-19 pandemic, last year's growth was much slower than 2021's rebound of more than 6%. Emissions from energy combustion increased by 423 Mt, while emissions from industrial processes decreased by 102 Mt.

In a year marked by energy price shocks, rising inflation, and disruptions to traditional fuel trade flows, global growth in emissions was lower than feared, despite gas-to-coal switching in many countries. Increased deployment of clean energy technologies such as renewables, electric vehicles, and heat pumps helped prevent an additional 550 Mt in CO2 emissions. Industrial production curtailment, particularly in China and Europe, also averted additional emissions.

Specific challenges in 2022 contributed to the growth in emissions. Of the 321 Mt CO2 increase, 60 Mt CO2 can be attributed to cooling and heating demand in extreme weather and another 55 Mt CO2 to nuclear power plants being offline.



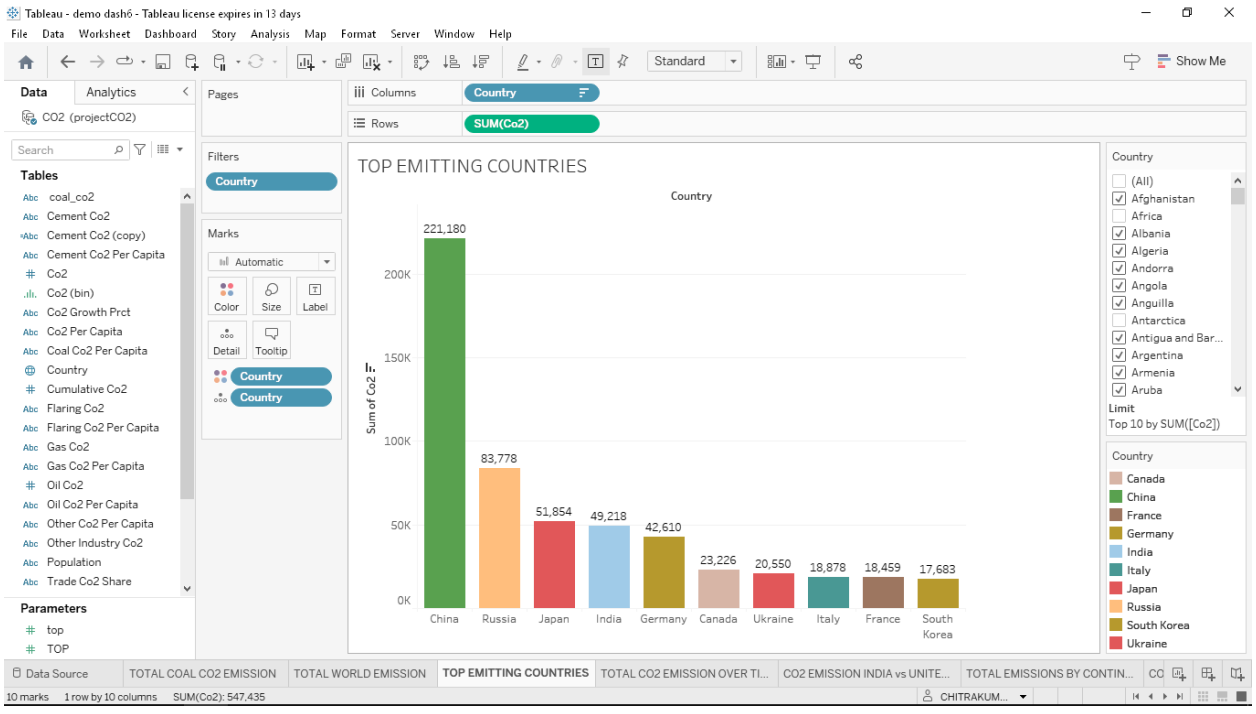


DATA VISUALIZATION:

The data visualization is the process of creating Graphical Representation of the data in order to help people to understand and to explore the information.

This is easy way to make a complex data into a simple data.

Totally we have don 3 Unique Visualizations by preparing a 17 graphical sheets in tableau platform.



DASHBOARD:

A dashboard is an information management tool that receives data from a linked database to provide data visualization. It typically offers high-level information in one view that end users can use to answer a single question.

The Power Consumption Summary dashboard is a composite report that includes separate sections highlighting different aspects of your power usage.

RESULT:

CO2 growth in 2022 was well below global GDP growth of 3.2%, reverting to a decade-long trend of decoupling emissions and economic growth that was broken by 2021's sharp rebound in emissions. Improvements in the CO2 intensity of energy use were slightly slower than the past decade's average.

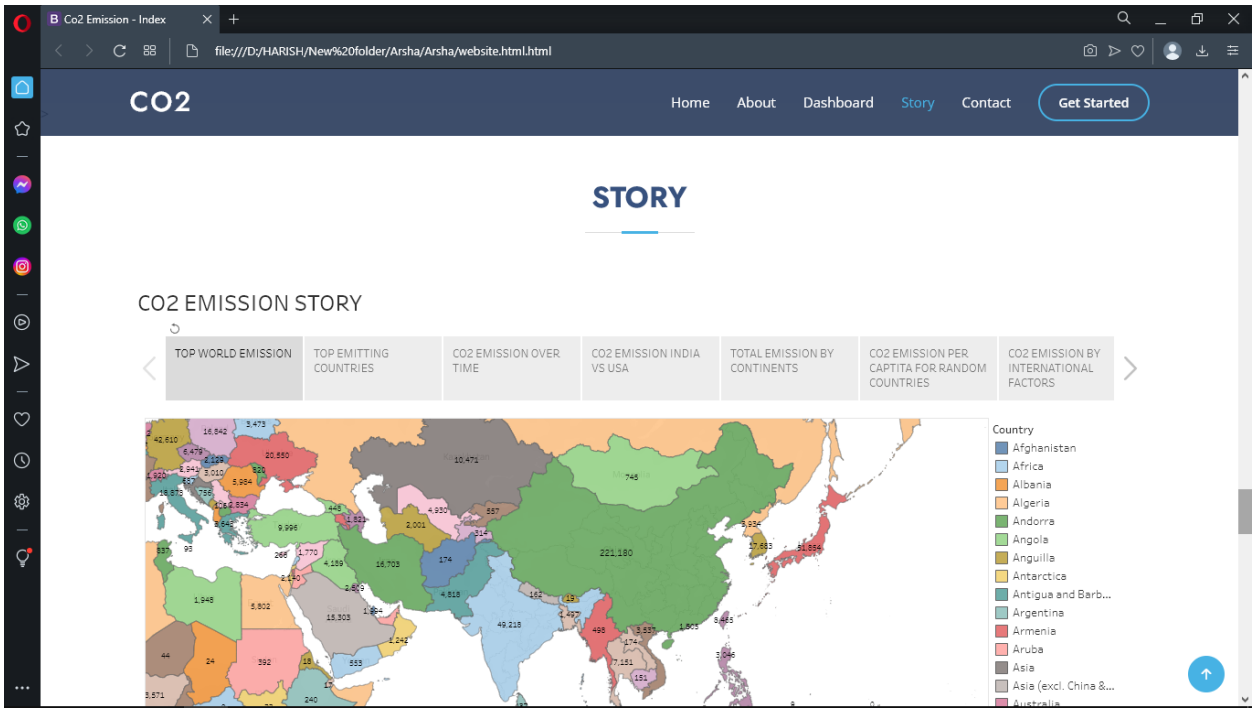
Emissions from natural gas fell by 1.6% or 118 Mt, following continued tightening of supply exacerbated by Russia's invasion of Ukraine. Reductions in emissions from gas were particularly pronounced in Europe (-13.5%). The Asia Pacific region also saw unprecedented reductions (-1.8%).

STORY BOARD:

It is the combination of the sheets which are prepared in the Tableau application. From the story we can easily understand the given data. A data story is a way of presenting data and analysis in a narrative format.

The number of scenes in a story board for a data visualization analysis of the electricity Consumption in India will depend on the complexity of the analysis and the specific insights that are trying to be conveyed.

We have created more than 15 scenes in the story on the tittle C02 EMISSION

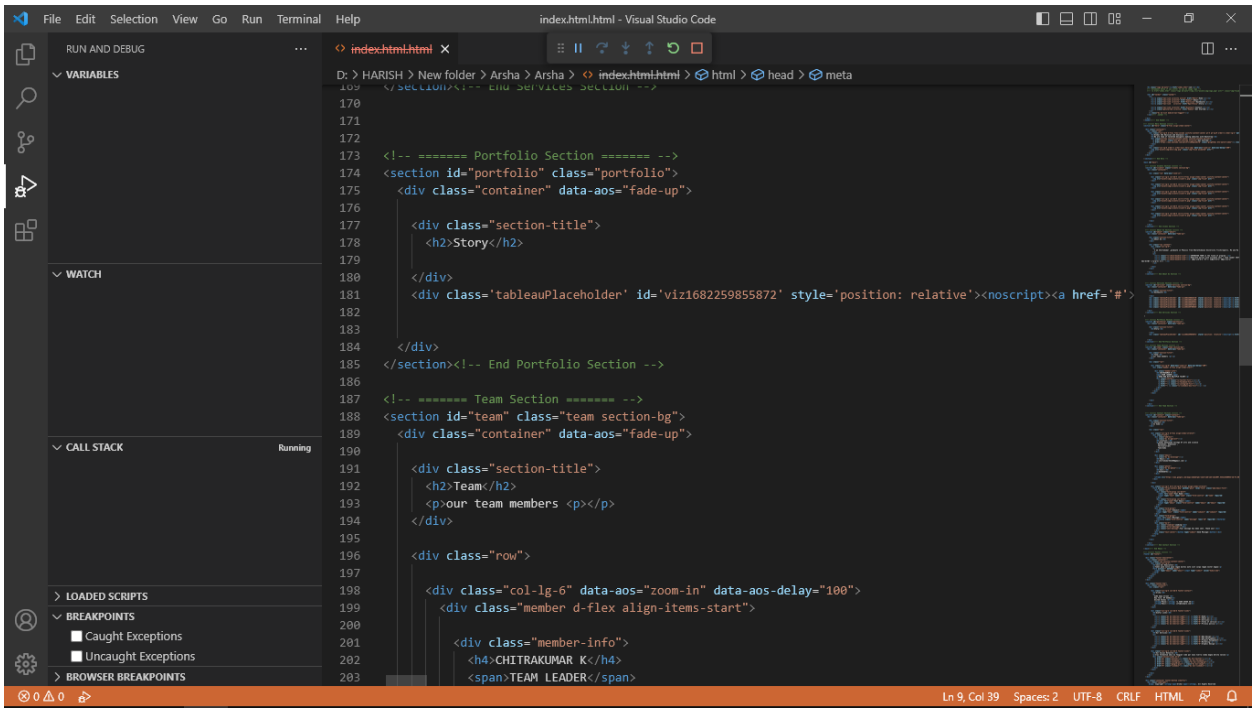


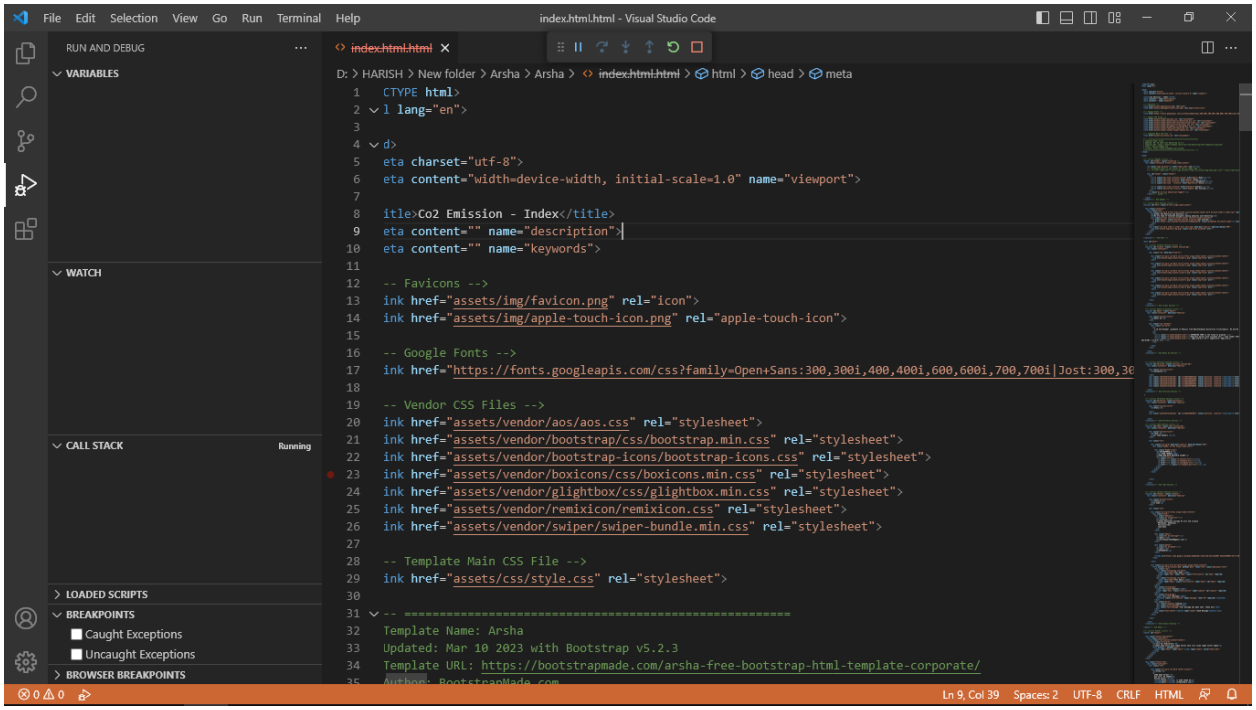
WEB INTEGRATION:

Web integration is the process of uploading the prepared graphical sheets, dashboard & story in the Tableau Public.

Then from the tableau public a embedded code is created. The code is copied & pasted in the Html Visual studio code in an appropriate place.

Then our own web page is created in the name “ Analysis on c02 emission”

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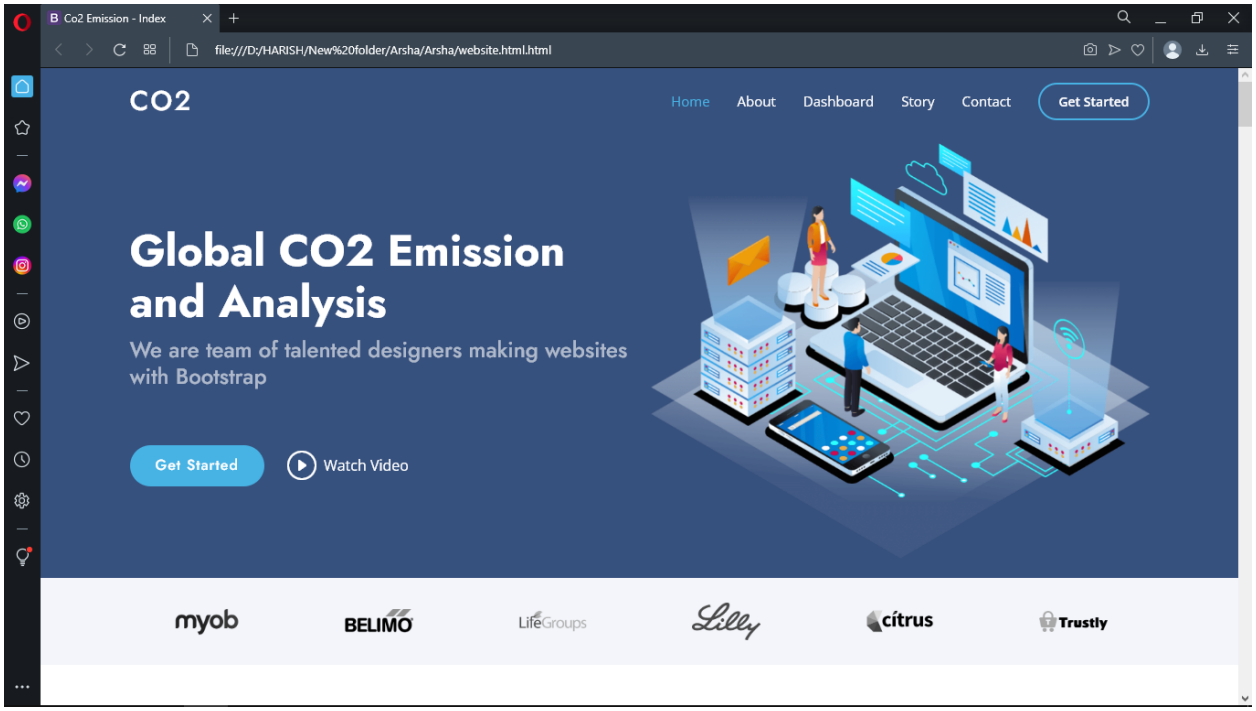
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APPENDIX

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