

# The Greenhouse Effect

## MILESTONE

Mustafa YAPAR  
201180766

Sermina ÖZDİLEK  
21118080700

Kaan YÜKSEL  
21118080774

Muhammet Akif TURAN  
21118080783

### ABSTRACT

In this paper, we will be discussing the motivation of our project, the datasets that we are using and the methods.

### MOTIVATION

Climate change is an important topic that matters for all of us human beings. We can notice the changes even if we have no knowledge of climate in detail by the weather being unpredictable, much warmer and also much colder. All of these are results of one thing: Climate change. Climate change has the potential to increase the frequency of natural disasters, damage natural ecosystems and cause human health issues via food shortages, increased heat, pollution and more. Any change that affects the planet ultimately affects human beings. Since it is a common issue for all of us, we wanted to bring awareness and make some changes – even if they are small.

Our project focuses on the most crucial factor of climate change: Greenhouse Gases. What really motivated us to work on this problem is that we can work on this issue by sharing the data we collect to help people know what is really going on and take urgent action to tackle climate change. We will be answering questions such as ‘Which are the most released greenhouse gases?’, ‘Which country releases the most greenhouse gases?’ and also work on which countries are more responsive about this issue on social media. What really makes our project topic interesting that it is an urgent issue and it is caused by us human beings and we are the only cure to this. We will be also working on which industries release most greenhouse gases and where does it take place.

With an aim of our project being relatable and appalling, we wanted to give example of daily life such as how the world is affected by celebrities using private jets. While doing some research on celebrities, we came across that not only celebrities but also billionaires emit a million times more greenhouse gases than the average person, so we wanted to make sure we mentioned this in our project.

In conclusion, Greenhouse Gases are one of the important aspects of climate change and we want to bring awareness to solve this problem before it is too late.

### DATASETS

To fetch data, as we have stated in our proposal, we will be using ready-to-use datasets and also from Twitter and other social media platforms. The datasets that we are currently working on are International Greenhouse Gas Emissions from Kaggle[1], Global Greenhouse Gas Emissions from EDGAR[2] and Earth Surface Temperature Data from Kaggle[3].

About our first data set, it has four columns which are country, year, value and category of which gas is emitted. We used this

data set to get data of countries and which gasses they emitted. To clean this data, we handled missing data by dropping them but we also checked if the left data made sense. We removed duplicated observations.

Moving onto our second data set, Global Greenhouse Gas Emissions, which provides us emissions of the three main greenhouse gases and fluorinated gases per sector and country. We used this data set to get the emission rates for countries.

For our last data set, we used Earth Surface Temperature Data to see the average temperatures of countries. We cleaned this data by dropping the unavailable ones and then checking if the left data is still usable.

In general, to clean the data sets, we dropped the missing values and fixed structural errors such as analyzing N/A and Not Applicable as the same category.

Data sets we are planning to use are Climate Change Data Set from World Bank[4], Greenhouse Gas Reporting Program from EPA[5] and Twitter API from CelebJets[6] to get data for celebrities’ private jets. Since we might need other data sets to meet with our needs and our goals, we can be adding or removing more data sets.

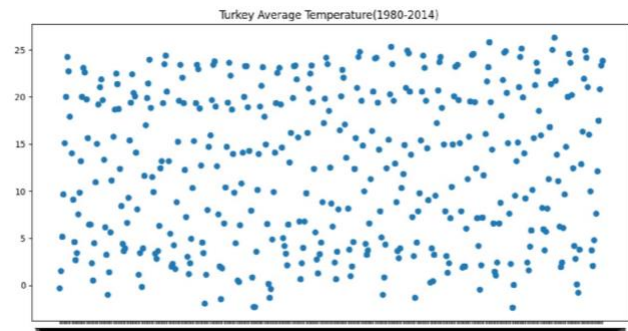
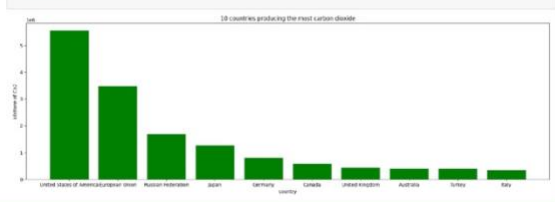


Figure 1. Example output of our code from data set Earth Surface Temperature Data, Turkey Average Temperature.



```
In [140]: import plotly.express as px

fig = px.line(df_global_temp_2, x = 'dt', y = 'LandAverageTemperature', title='World Land Average Temperature')
fig.show()
```

World Land Average Temperature

[illegible]

## METHOD

## 1. REFERENCES

- [1] International Greenhouse Gas Emissions  
<https://www.kaggle.com/datasets/unitednations/international-greenhouse-gas-emissions?ref=hackernoon.com>.
- [2] Global Greenhouse Gas Emissions  
[https://edgar.jrc.ec.europa.eu/index.php/dataset\\_ghg60](https://edgar.jrc.ec.europa.eu/index.php/dataset_ghg60).
- [3] Earth Surface Temperature Data  
<https://www.kaggle.com/datasets/berkeleyearth/climate-change-earth-surface-temperature-data>.
- [4] Climate Change  
<https://data.worldbank.org/topic/19>.
- [5] Greenhouse Gas Reporting Program  
<https://www.epa.gov/ghgreporting/data-sets>.
- [6] Twitter API  
<https://twitter.com/CelebJets>.