DSEM FINAL PROJECT

FORECASTING CO2 EMISSIONS

TEAM MET-A-FOUR

BACKGROUND:

Global climate change is mostly caused by carbon dioxide emissions. It is commonly acknowledged that the world needs to reduce emissions quickly if it wants to avoid the worst effects of climate change. However, the division of this responsibility among nations, regions, and people has long been a source of dispute in international talks.

PROBLEM:

CO2 Emission has steadily climbed over the past 50 years, however it is currently trending downward with a sharp decline in 2020. The coronavirus-related shutdowns are to blame for the sharp decline in 2020. Throughout the time period in question, Asia has the largest CO2 emissions, whereas Oceania, which includes Australia, Melanesia, Micronesia, and Polynesia, has the lowest emissions. China and India's emissions were primarily responsible for 60% of Asia's emissions in 2020. USA has been one of the biggest emitters of CO2 over the past 50 years. China has seen an increase in CO2 emissions since the mid-1990s as a result of the change in industrial production Russia has been a major source of CO2 emissions until the 1990s, when a declining trend began. India's Contribution has also greatly increased since the middle of the 2000s and will continue to rise through 2020.

We see a small decrease in CO2 during the year 2015, but it wasn't sustained, showing that the countries aren't focused on lowering the carbon footprint globally. But in 2020, there is a sharp decline in CO2 emissions that may be attributed to the pandemic crisis. This is the biggest decline in CO2 emissions that the world has ever seen.

RESULTS:

 If we want to achieve the goals of the Paris Climate Agreement, countries must collectively take action to reduce CO2 emissions. We have employed many strategies to anticipate the data while estimating global CO2 emissions, including categorization techniques and regression models.

Through the use of the Naive-Bayes Classification approach, we were able to achieve RMSE value of 1.232. Applying several Regression methods, we found that Random Forest had an accuracy of 96%, Linear Regression had a 90% accuracy, Theil Sen Regression had a 64% accuracy, and ARD Regression had an accuracy of 87%.