The Balance Between Population And CO2 Emission

Introduction

Co2 is exhaled by all living organisms and although plenty of it is absorbed by the oceans the surplus floats into the environment creating a blanket to preserve heat on earth called the green house effect. With the increase in Co2, heat rises eventually making the planet uninhabitable. Some countries are constantly developing over the previous few year without keeping in mind the effect caused on the environment with the ever-growing population of the world playing a critical

AIM

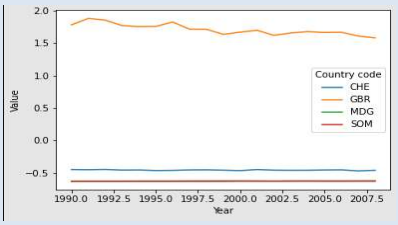
To understand the correlation between population and co2 emission through machine learning methods.

OBJECTIVES

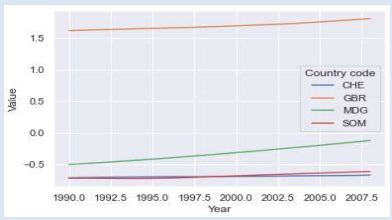
- Identify relationship between the chosen indicators.
- Cluster the data into cohorts based on the model predictions.
- Test the clusters logically to make sense.

DATA

Considering Few Countries for Analysis and selected GBR and Indonesia as test samples for the experiment.



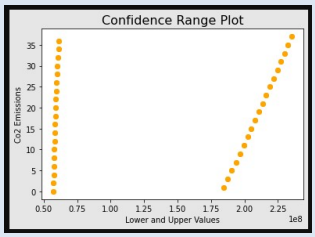
Line plot to display Normalized Emission values for all the years for all selected countries



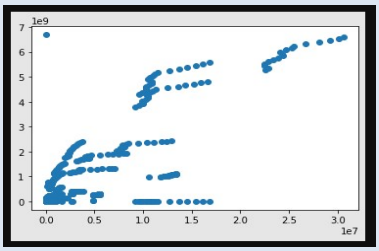
Line plot to display Normalized Population values for all the years for all selected countries

EXPERIMENT

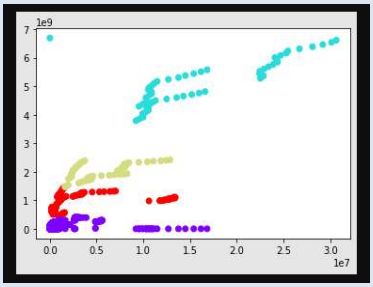
Over the years population and co2 emission have been increasing due to the advancement in technology and reduction of natural filters. he experiment is concentrated on dividing the countries into different clusters based on their population with respect to the co2 emitted.



Confidence Range with Lower and Upper Values



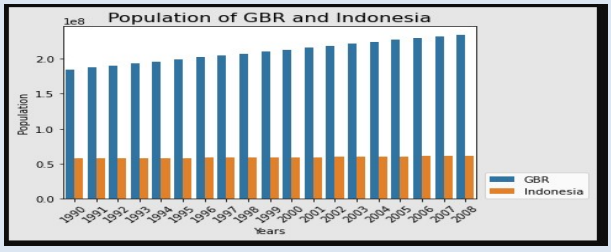
Curve Fitted Clusters



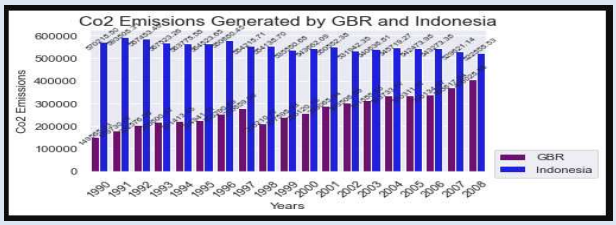
Predicted Clusters

CONCLUSION

The clusters formed were pretty distinguishable thus providing a way to differentiate with different colour. The population of USA is similar to Indonesian.The results show 4 clusters differentiating USA from Indonesia which is caused by factors apart from population, thus hinting no harmful effect. Comparison between two countries GBR and Indonesia with respect to Co2 Emissions and Population gives a clear understanding of the Clustering using K means for Analysis.



Population Comparison of GBR and Indonesia



Co2 Emission Comparison of GBR and Indonesia

References

*Kriegel, Hans-Peter; Schubert, Erich; Zimek, Arthur (2016). "The (black) art of runtime evaluation: Are we comparing algorithms or implementations?". Knowledge and Information Systems. **52** (2): 341–378. doi:10.1007/s10115-016-1004-2. ISSN 0219-1377. S2CID 40772241.*