Climate Change

Impact of Population & Carbon Emission

By the use of K-Mean Clustering & Curve Fit

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Introduction

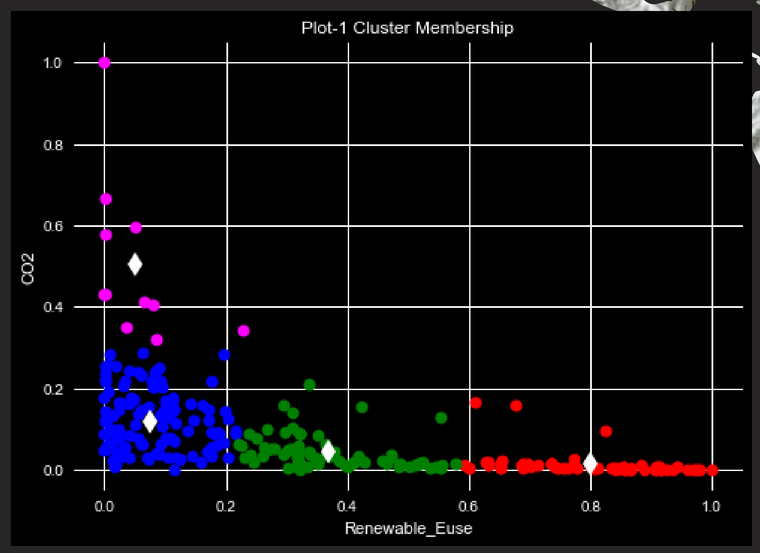
The world has witnessed a large deviation on the climate due to many factors over the last few decades. Here we are analyzing this change by looking in to few parameters that are derived from World Bank Data. Our aim is to provide some correlation between few indicators & generate an interesting clusters by the use of K-mean algorithm. Then produce a best model that can predict the population of India & China till 2050

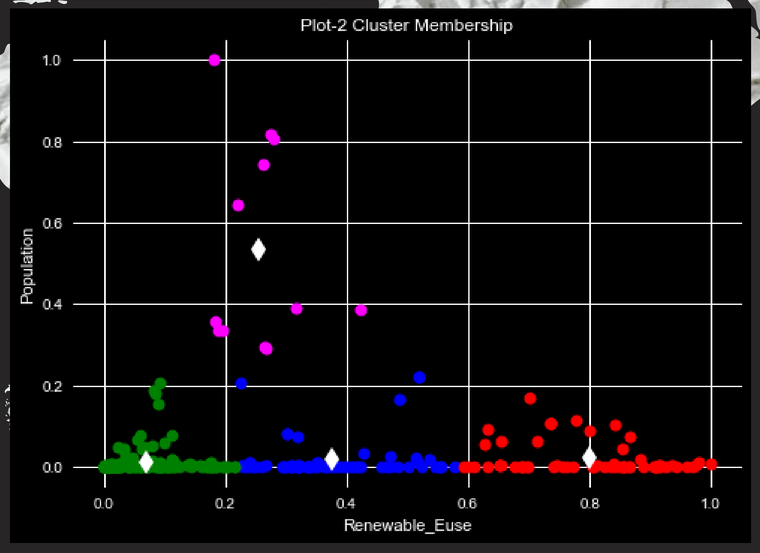
Population Forecast of China

1.50Bn by 2050
1.48Bn by 2030
1.45Bn by 2030

Population Forecast of India

1.8Bn by 2050
1.7Bn by 2030
1.5Bn by 2030





1.Does Renewable Energy Use Has an Impact on Carbon Emission

Using the K-Mean Clustering algorithm, we have created cluster based on CO2 & Renewable Energy Use. Most of the countries with highest Renewable Energy use produce lesser Carbon. The countries from Middle East reluctance (Green Cluster Plot 1) to use Renewable Energy.

2. How Population Related to Renewable Energy Use

The lesser population countries (Plot1 Red Cluster) are tends to use more renewable energy than the higher population countries (Plot2 Blue Cluster).

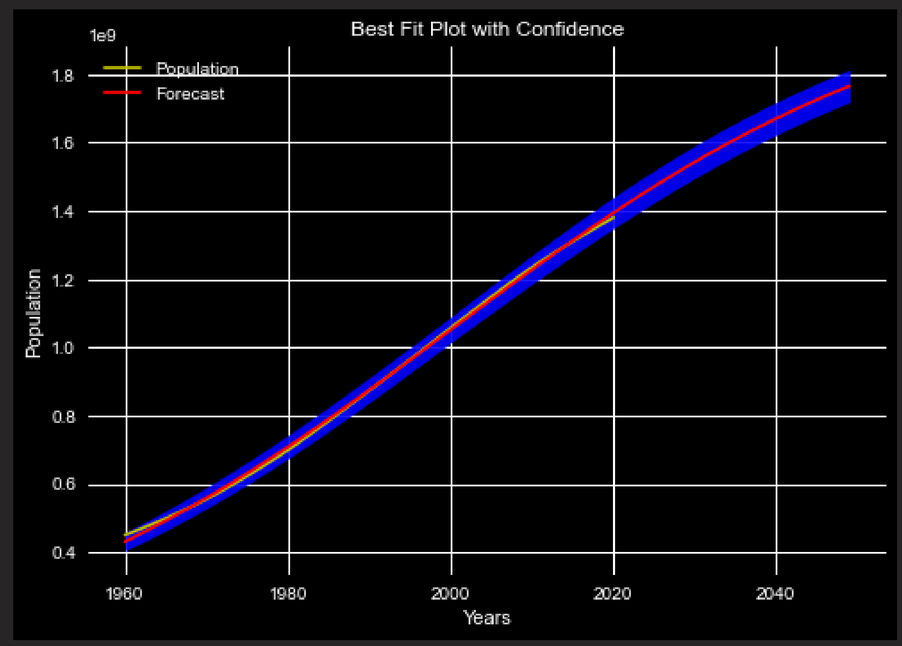
3. Predicting the Population (Model Generation)

From the two models used for the prediction (Exponential Growth & Logistic Functions) the Logistic Model is predicting with more confidence. We have use the Curve Fit function for the fitting the model (ref Fit Plot). Then we have predicted the population . Prediction values of the both India & China is marked on the above 2D map.

4.Conclusion

- K-Mean Clustering, provides a comparative relation between Renewable Energy Use, Population & Carbon Emission. When the world starts using the Renewable Energy , Carbon emission starts reduced.

- As per the Model prediction by the start of year 2050, India will hit 1.8 billion population mark & the China hits the 1.5 billion population mark.



Reference: World Bank Data https://data.worldbank.org/topic/climate-change

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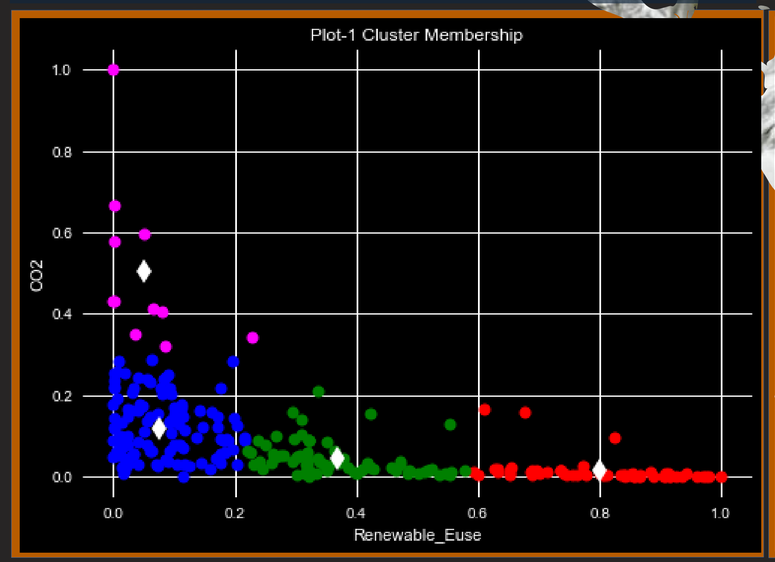

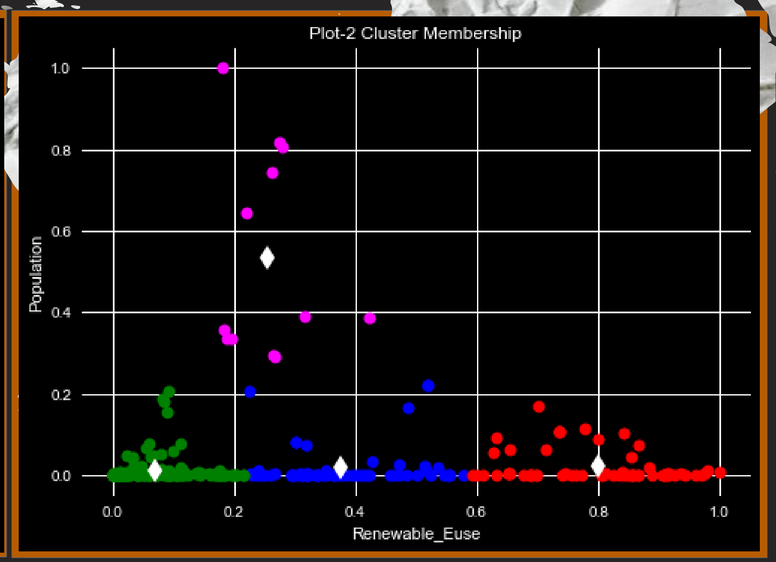

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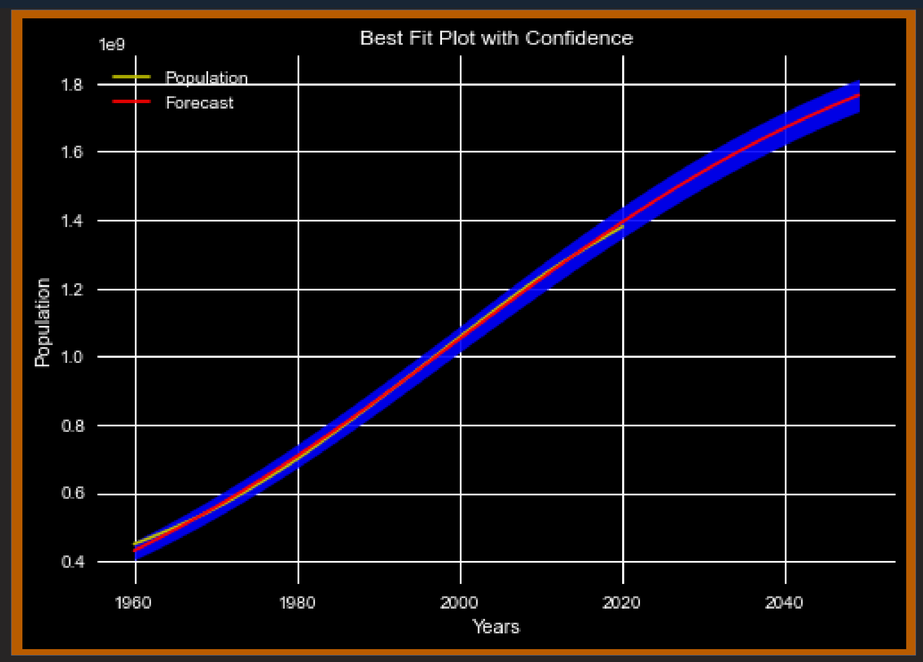

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