

# ANALYTIC STUDY OF CLIMATE CHANGE

FADI NOUSHAD P , MOHAMMED ISMAIL C , INDRAJITH T S , ABID ALI K P , MUHAMMED SHIFAN P

## PROBLEMS

Climate Change is a huge predicament,however the public perception is still mixed.Our aim is to do a thorough data analysis and see if any of the data we obtain can further our understanding on this subject.

## INTRODUCTION

This is an analytic study using GEE where we explore one of the most important question of this century ,Is Climate Change a Myth? .With the help of various data we determine whether the rising temperatures can be attributed to any changes

## TOOLS

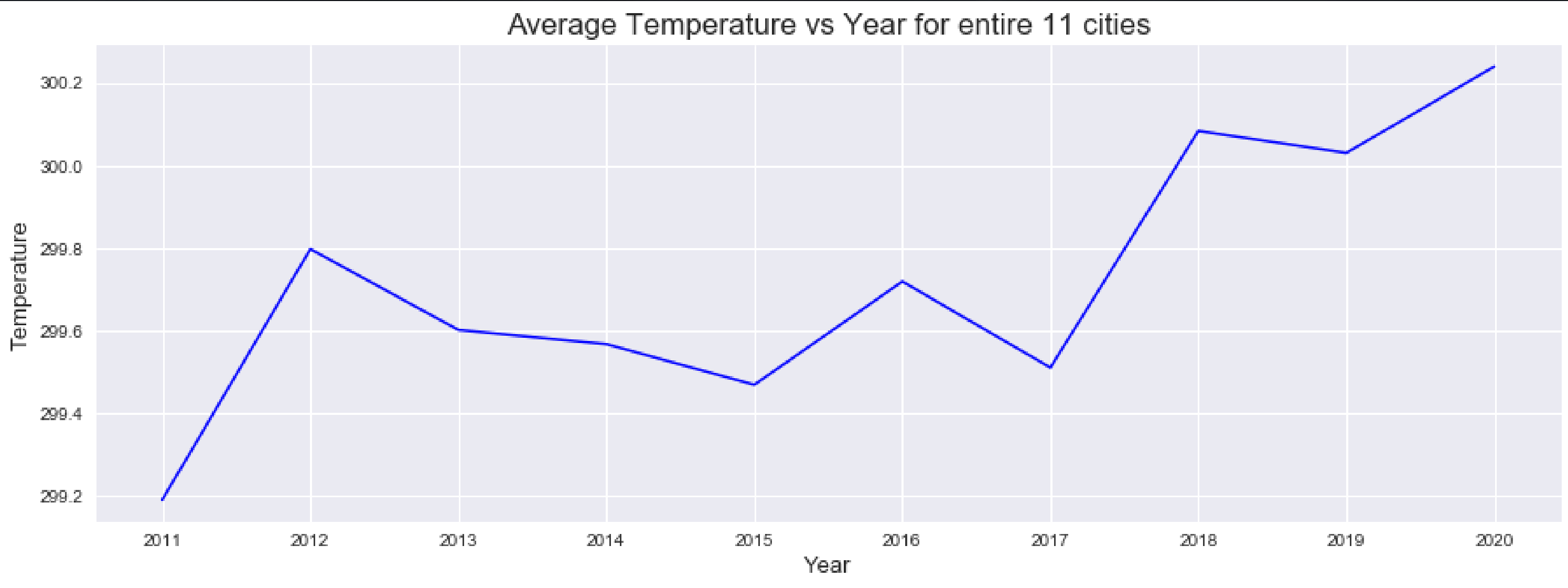
- Python
- Pandas,Matplotlib,Numpy library

## DATASET

We used the NCEP/NCAR Reanalysis data on Surface Temperature of 11 cities in india (Mumbai, Chennai, Delhi, Kolkata, Bengaluru, Delhi, Jaipur, Pune, Ahmedabad, Bhopal, Hyderabad and Bhubaneswar).

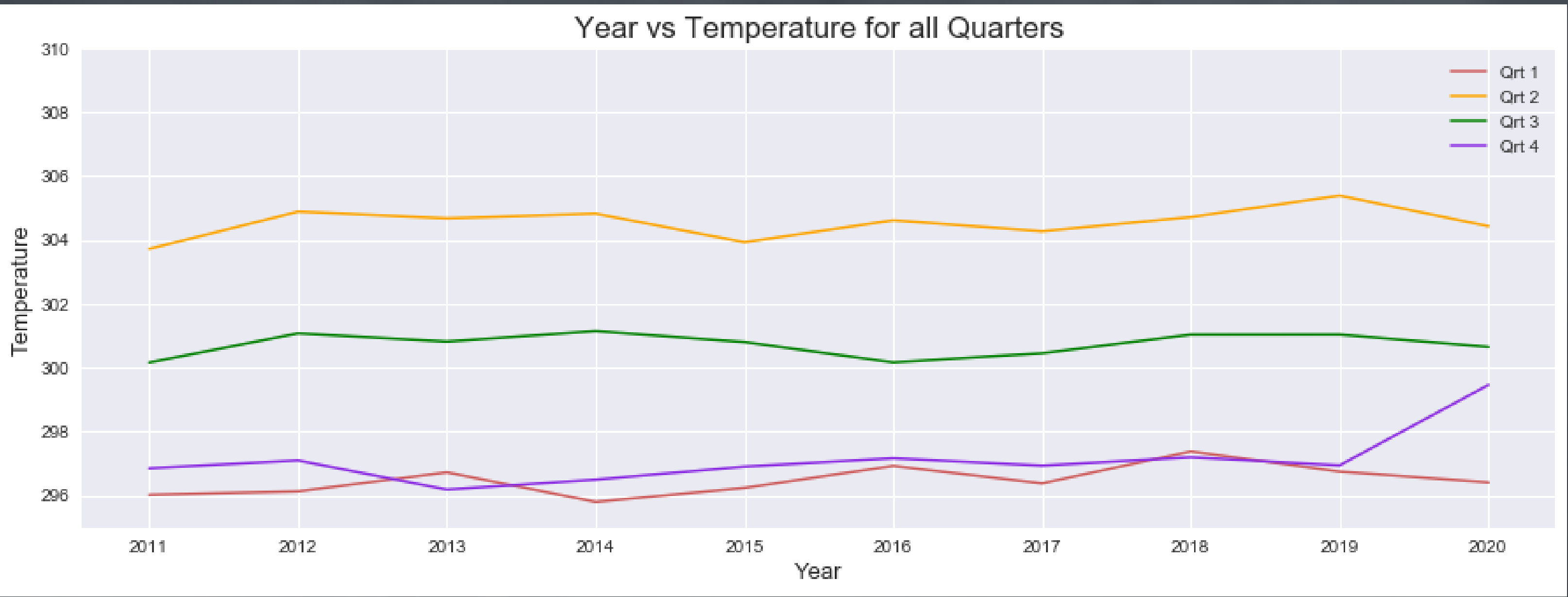
## RESULTS

Average Temperature vs Year for Indian cities



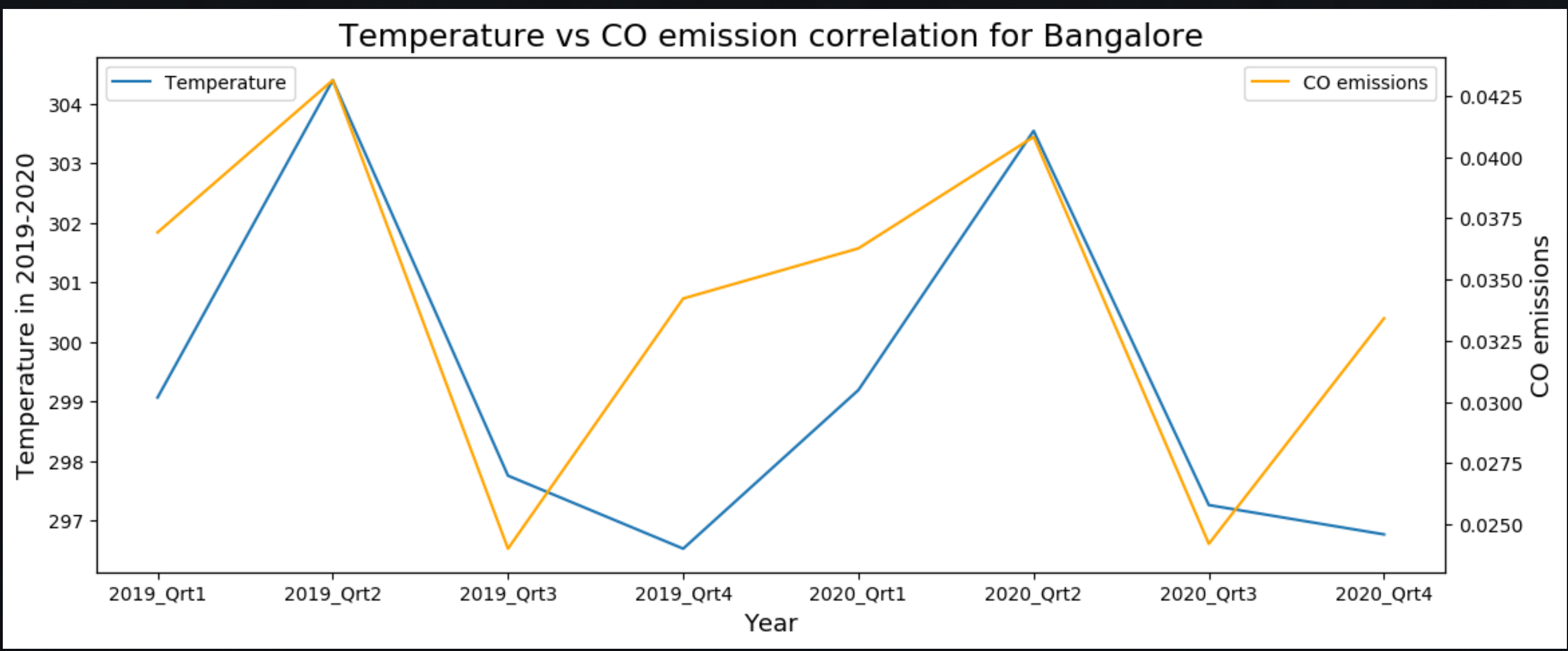
Based on the last 10 year data, The general trend of the temperature is gradually increasing over the years even though there are individual fluctuations

Average Quarterly Temperature vs Year for Indian cities



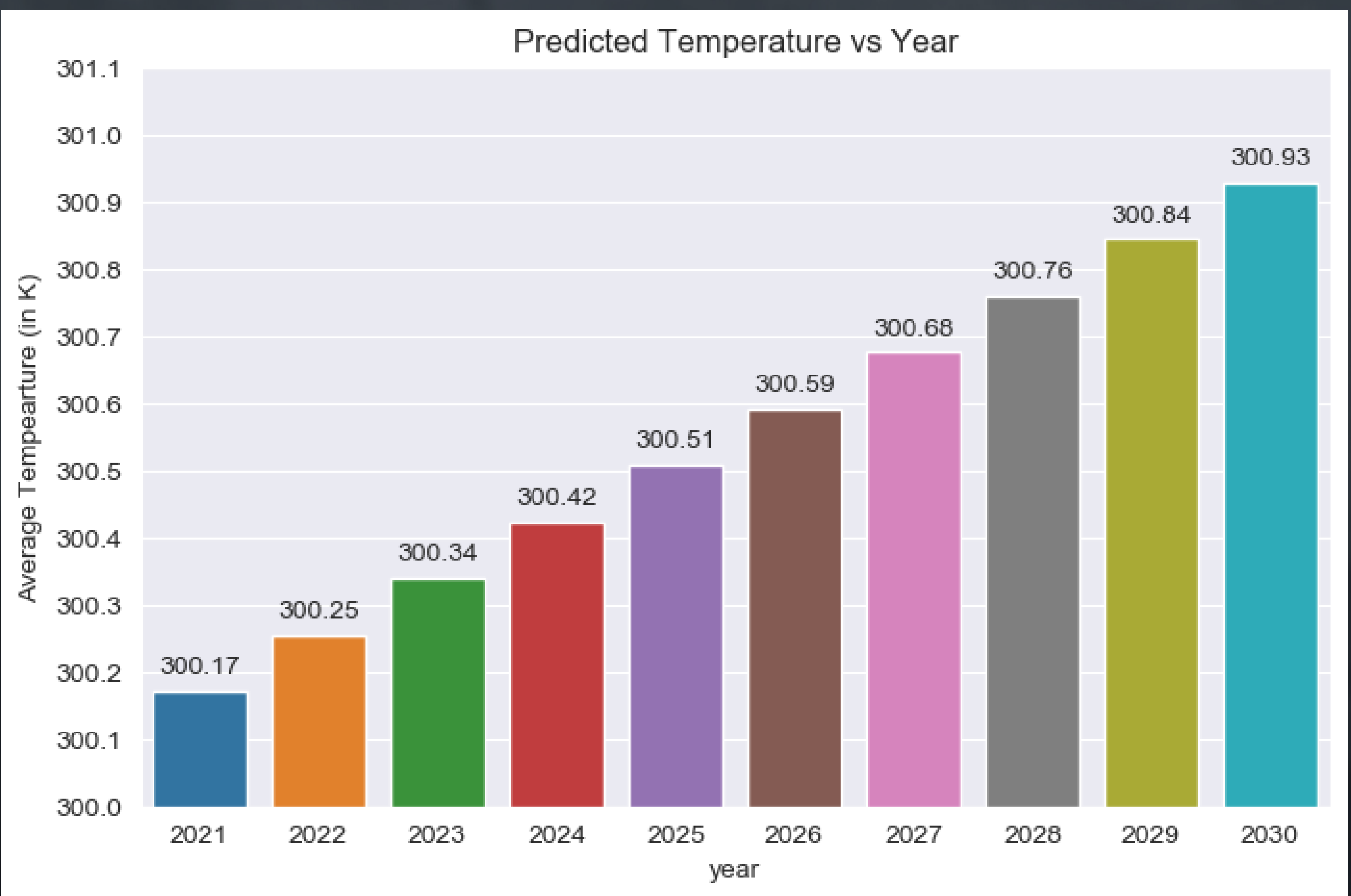
- Quarter 2 (summer season) shows highest value in all year.
- Quarter 4 and Quarter 1 shows minimal values over years
- Quarter 3 lies in between the above two.

Temperature vs Carbon-Monoxide correlation graph



By taking the correlation between temperature and carbon monoxide density we were able to obtain a correlation of 74.78 %

Projected Average Temperature vs Year for Indian cities



Using machine learning algorithm,in accordance with the current dataset we predicted that in the net 10 years there would be an increase of about 0.75K in the average temperature of Indian cities.

## CONCLUSION

Our analysis shed light on the various trends in the temperature changes,we first saw that there is a study increase in the temperature over the years,and then we saw that there is a significant correlation between temperature and the levels of Carbon-monoxide,finally we used a linear regression model to predict the value in the next 10 years.

## REFERENCES

- pythondatasciencehandbook by Jake VanderPlas
- <https://towardsdatascience.com/how-to-plot-time-series-86b5358197d6>
- [https://matplotlib.org/3.1.0/gallery/subplots\\_axes\\_and\\_figures/subplots\\_demo.html](https://matplotlib.org/3.1.0/gallery/subplots_axes_and_figures/subplots_demo.html)