

# Covid-19 Epidemic Analysis Using Machine Learning

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**Abstract-** The main aim of covid19 epidemic analysis using Machine learning is to predict the worldwide corona virus cases. To reduce the effect of corona virus and to save the lives, necessary actions should be taken. To take the necessary actions, early prediction of the cases is needed. This epidemic situation is analyzed by developing the mathematical models. For analyzing the epidemic situation, nation wide shared data is used. This project uses the machine learning models for analyzing the epidemic analysis.

**Keywords – SARS-CoV2, COVID, Machine Learning.**

## I. INTRODUCTION

Severe Acute Respiratory Syndrome-Corona virus(SARS-CoV-2) also known as COVID-2019 is reported in December 2019. This corona virus spread throughout the globe quickly. Initially, Corona virus began with the symptoms of the common cold and then it led to severe level of respiratory diseases. This disease causes difficulty in breathing, tiredness, fever and dry cough. Real time analysis of data is needed to prepare the society with better actions against the disease. This project uses the real-time information from the John HopKins dashboard.

## II. PROPOSED ALGORITHM

### A. Working

For the future prediction of Corona virus disease, PR (Polynomial Regression) and SVM (Support Vector Machine)

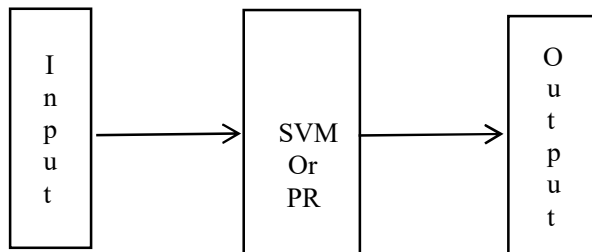
models are used, which are machine learning prediction models. These models are applied on the dataset, which is taken from the John Hopkins dashboard.

Polynomial Regression is a regression algorithm, which is used to model a relationship between a dependent variable and an independent variable as an  $n$ th degree polynomial.

SVM is a predictive analysis data classification algorithm, which is used to assign the new data elements to one of the suitable category.

#### B. SVM and PR future predictions

To predict the number of confirmed cases worldwide, SVM predictions and PR predictions are used.



Applying SVM or PR predictions on the dataset for the future prediction of covid cases worldwide

#### C. Dataset

The dataset taken from the John Hopkins dashboard contains approximately 14,00,000 records with different attributes such as confirmed cases, recoveries and deaths.

### III. EXPERIMENT AND RESULT

The dataset for this analysis is taken from the John Hopkins dashboard to predict the epidemic analysis in order to take the necessary actions to fight against the corona virus disease and to stop the spread of disease. Jupyter Notebook software platform is used to perform the experiment. The PC for experiment is equipped with an Intel i3 2.2GHz Processor and 4GB RAM.

This project reduces the effect of corona virus disease and predicts the danger before happening and saves the lives.

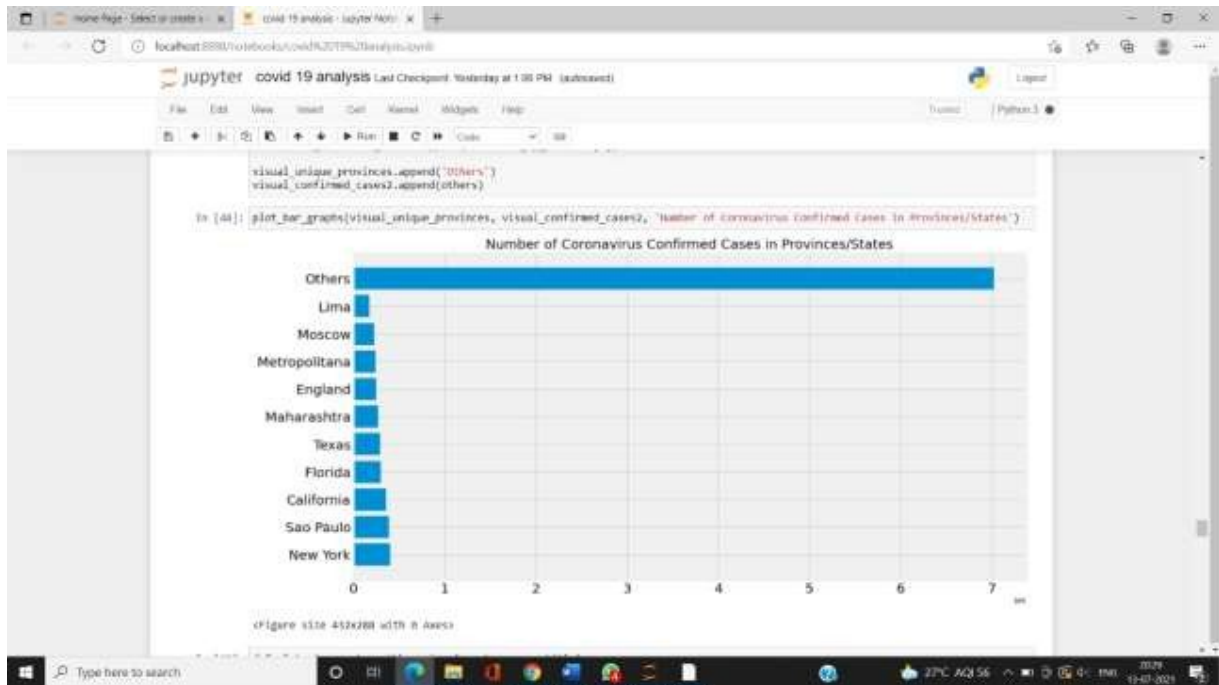


Figure 1. Number of COVID-19 Confirmed Cases in the Provinces/States

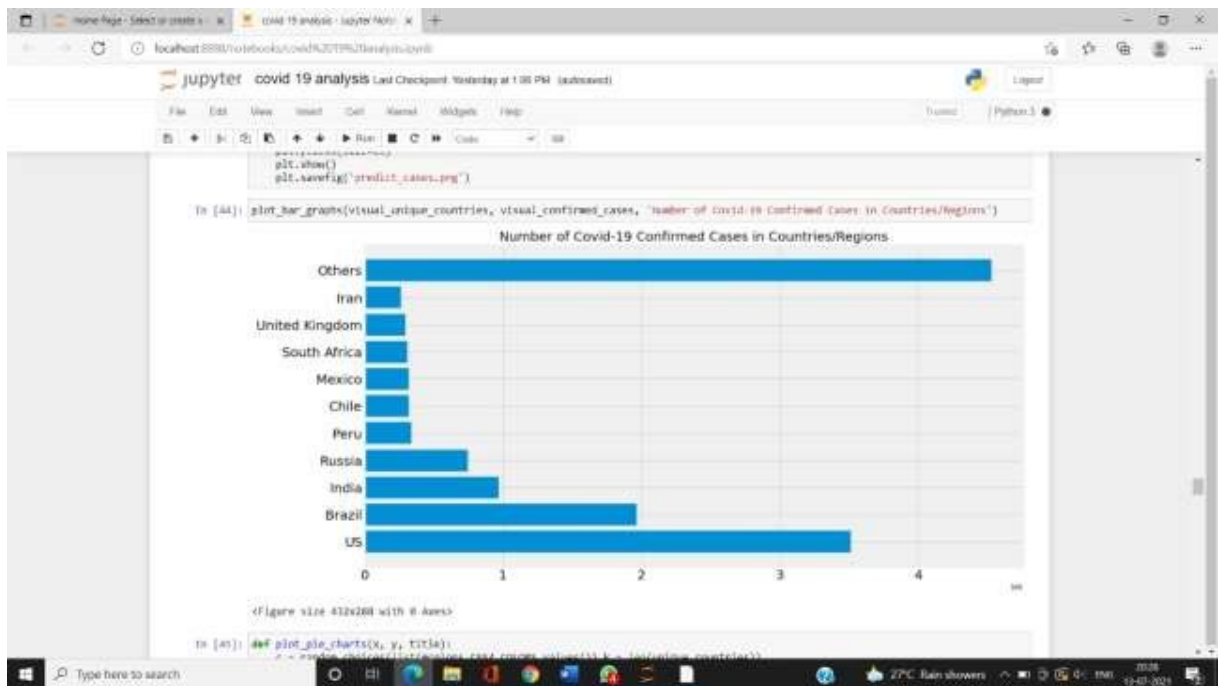


Figure 2. Number of COVID-19 Confirmed Cases in countries/Regions

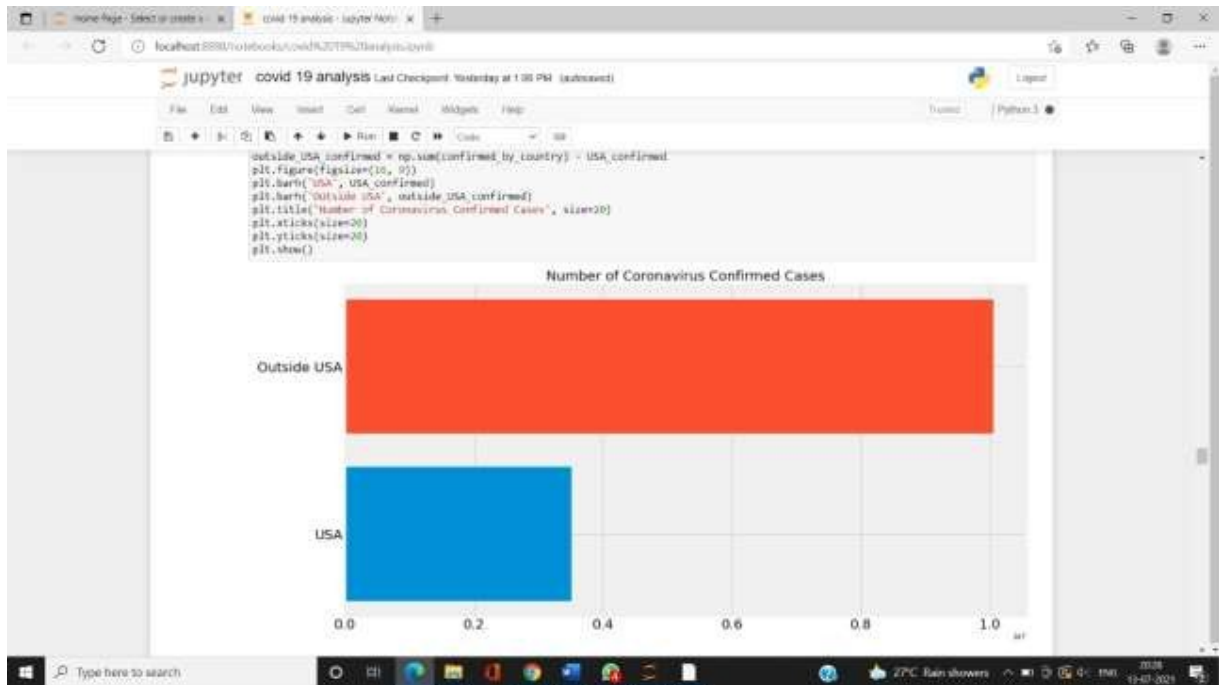


Figure 3. Number of Corona virus cases in USA and outside USA

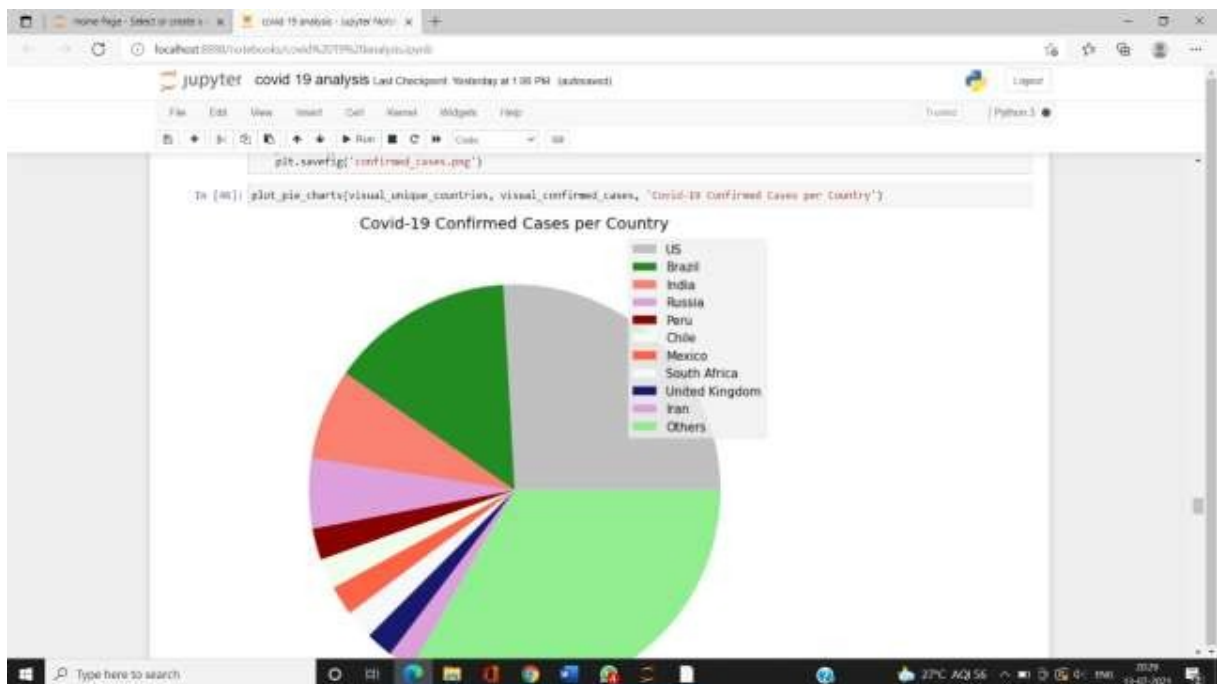


Figure 4. COVID-19 Confirmed Cases per country

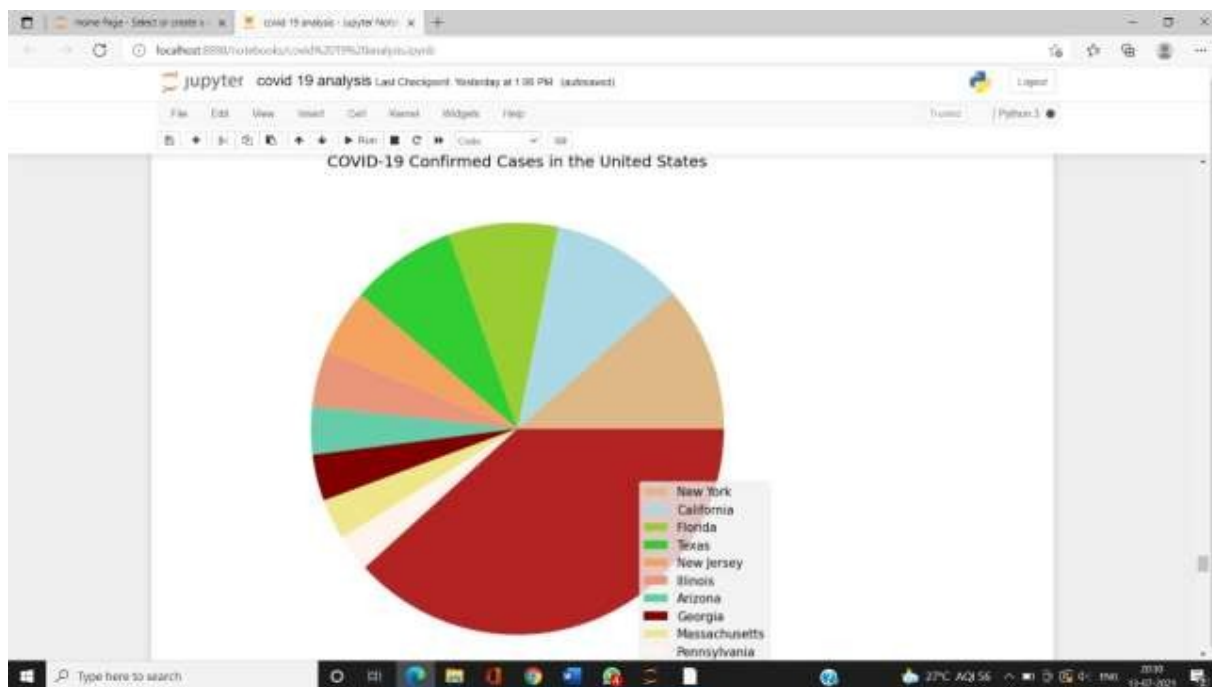


Figure 5. COVID-19 Confirmed Cases in the US

#### IV. CONCLUSION

The loss that Sars Covid -19 is very severe so the main reason for working on this project is to predict the cases in future beforehand so that necessary actions can be taken to reduce the effect and save lives . As there is a saying " Prevention is better than cure", we can predict the dangers before happening.

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