**MATHEMATICAL PROGRAMMING-II**

PROJECT DOCUMENT:

TRACKING THE PROGRESSION OF THE NEW OMICRON COVID-19 VARIANT

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**ABSRTACT:**

The coronavirus (COVID-19) outbreak produced devastating effects on the global economy and the health of entire communities. Although the COVID-19 survival rate is high, the number of severe cases that result in death is increasing daily. A timely prediction of at-risk patients of COVID-19 with precautionary measures is expected to increase the survival rate of patients and reduce the fatality rate. This research provides a prediction method for the early identification of COVID-19 patient’s outcome based on patients’ characteristics monitored at home, while in quarantine. The data were analyzed using three classification polynomial regression, SVM

Prediction, Prophet Model Initially , the data were preprocessed using several Preprocessing techniques. Furthermore,10-k cross-validation was applied for data partitioning

# INTRODUCTION :

The year 2020 has been a disastrous year for humankind. We humans, all around the globe have come across the Coronavirus. It was first identified in December 2019in Wuhan, China. The World Health Organization declared the outbreak a Public Health Emergency Concern on 20 January 2020, and later a pandemic on 11 March 2020. As of 3 April2021, more than 130 million cases have been of — International confirmed, with more than 2.84 million deaths attributed to COVID-19, making it one of the deadliest pandemics in history. India witnessed an outbreak of COVID-19,during the last week of January 2020 when a few Indian students travelled to Kerala from Wuhan located in China. In 2020, from January to till today, we have not been able to get rid of the virus. As per the World Health Organization (WHO), numerous potentialCOVID-19 antibodies are being examined, and many voluminous clinical trials may report their results later at the near end of2020 or the very beginning of 2021. WHO is working with partners around the world to help coordinate with the key steps in this process Companies such as Biotech have concluded a phase 3 study of theCOVID-19 vaccine and claim to be 95%sufficient against the virus.

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## LITURATURE SURVEY :

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## FLOW CHART :

Diagram

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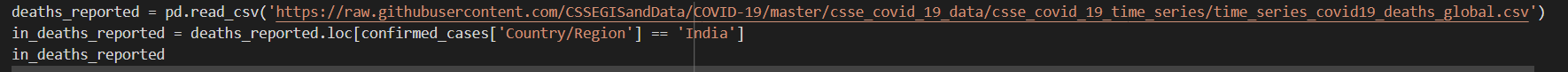
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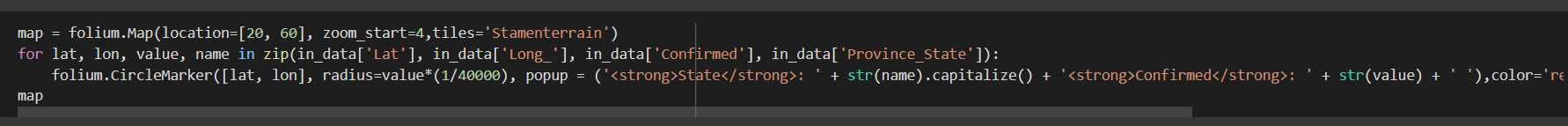


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CONCLUSION:

In the present study, we conducted an experimental study in the forecasting of theCOVID-2019

epidemic pattern and have also compared the differences of actual and predicted values in both

principle and practical aspects. Moreover, based on weighted overlay, the district is classified in to a

very high, high, medium and low risk zone of COVID-2019. The Prophet model can acquire past

values and consider current and preceding residual series \_ historical knowledge. An efficient

linear model to efficiently capture a linear pattern of theCOVID-19 disease series was demonstrated

in the Prophet model. In general , decomposition methods operate best when the sequence is

compatible with the hypothesis for decomposition. The drawback of the model is that only the data

from the time series can derive linear relationships. With events which may be influenced by multiple

factors, including several meteorological and specific social influences , this does not work well.

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