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Delhi Weather Analysis : A Mongo Db Approach

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***Abstract*—**The application of science and technology in predicting the weather of a given area is weather forecasting. The whole world is experiencing extreme climatic change which causes side effects .In order to reduce these side effects we use mathematical algorithms and techniques on big data of weather data to analyse the current situation and predict the future weather conditions. In this research we will use be using Mongo DB to analyse the data on weather in Delhi. The outcomes shows us the analysis of the weather data available.

***Keywords*—**MongoDb, Weather, Analysis, Queries.

I. INTRODUCTION

To predict the weather for a given location based on the collection of data as applicable weather prediction is a best practice. Since a long time due to unexpected changes that occur in the weather climate change has been seeking lot of attention. There are lot of limitations in better implementation of weather forecasting as a result it has become too much problematic to predict weather short term with efficiency. In the light of the fact weather warnings are vital as they are utilized to ensure life and property. Weather forecasts are dependent on temperature, Outlook, Humidity, Wind direction, condition are important. Big data is very essential technology for analysing weather data and it is a great challenge to predict a data by firing a queries on Mongo DB. Mongo DB can import the huge data and process them efficiently beyond the ability of the commonly used software tools.

II. LITERATURE REVIEW

Weather being continuous, dynamic in nature makes it more challenging to analyse the data as the given data is very huge. There are various methodologies that are used in this analysis that are statistical, exponential and ARIMAX model etc. [1] The various model used are statistic decomposition models, Exponential smoothing models, ARIMA models ,seasonal ARIMA models, vector ARIMA models using flexible time series, ARMAX models i.e. ARIMA with following informative variables etc., which has been used for forecasting purposes.[2]It is one of the most crucial job that the metrological department has to do around the globe. The use of Mongo db help us analyse the data by using query to fetch us the required output.[3]Model with predictive analysis capture relationship with different factors available in the dataset. In [4] author describes stock market pattern on daily basis, as it is very important for the stock holder. In many field of research stock market has been called due to its financial challenges. They used linear regression S&p500 index behaviour and at the end compared and evaluated .Integrated and collective data is used for determining market policies and their orientation that leads to incr5ease in productivity and income. In [5] author explains that recent technologies and its advancement in education domain has led to increase in the rise of increase in online education content and assessment .By conventional means of education , prophecy of student is calculated based on the student's academic performance. The research offered here provides an approach (LON-CAPA) to predict the final grade based on the features obtained from data. It consists of two large databases, one containing educational resources and the other containing information of student users, activity details .To achieve improvement in accuracy of prediction Genetic algorithm was used. Different classifier were used to obtain a optimal classifier.

III. IMPLEMENTATION AND ANALYSES

In this section actual working of project has explained in detail.Each and every block of project is explained with help of diagrams and snapshots.This topic includes various information and architectural diagram of our project, our project measuring and analysis weather data. Figure 1: Internal Architectural Diagram of the system. Figure describes the formal description and representation of the system; it supports structures and behavior of the system.

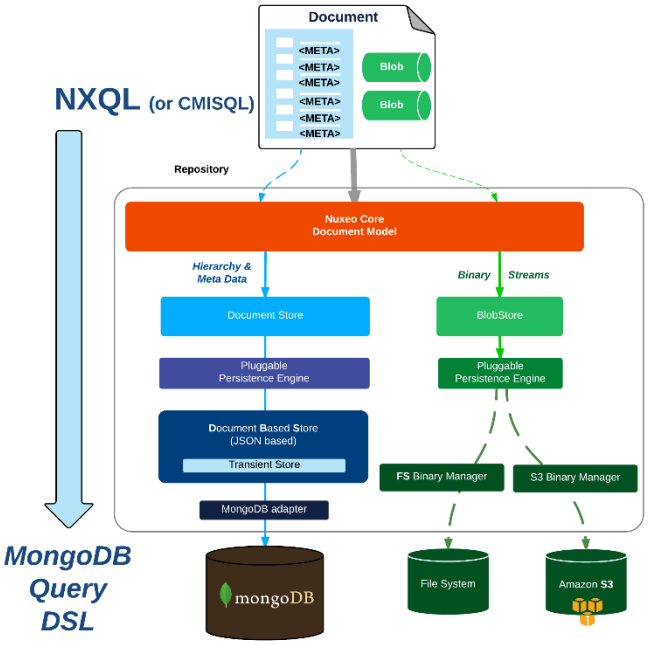

Fig.1 Mongo DB Architecture

Weather Data:Weather data will be used for predicting the weather data of Delhi. It contains various attributes(Columns) which constitutes the tuples(rows).Data set of our Project is shown below:

An example for firing query to analyse the data.

Query->db.mini_project.find**({**$and**:[{**" _tempm"**:**"19"**},{**" _conds"**:**"Smoke"**},{**" _vism"**:**null**}]**
})

The analysis and prediction of weather using Mongo Db is done successfully .Mongo Db provides an engine that executes data query fruitfully. It is no SQL platform. In our project we used basic queries of find and or ,nested queries and aggregate function. We fired a query for analysing rain in Delhi. The Output of the query is given below:

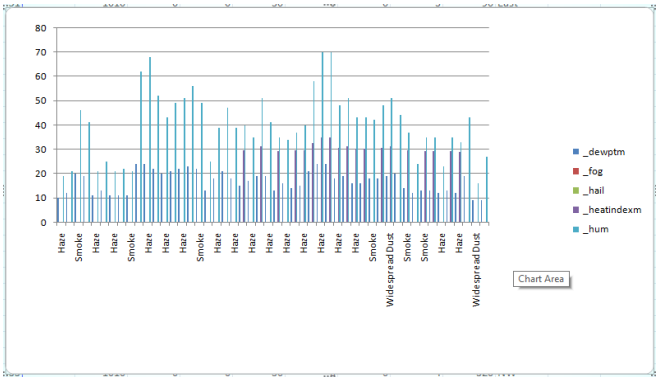

Fig.2 With different conditions the level of rain

Then we also fired a query for analyzing the bad weather where the visuals are not very clear. The output of is given in the fig below:

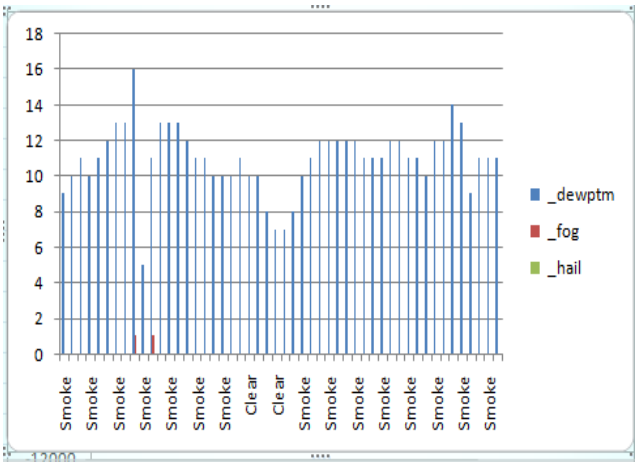

Fig.3 Analyses of bad weather with low visiuality

After executing a few more queries we plotted the graph for each to analyse different weather conditions.

IV. CONCLUSION

Thus we have successfully found different weather conditions in particular area from a give data set. This is a very useful method that can be used by metrological students. Future work of this project is to incorporate more attribute of weather condition to predict and to work with other classification algorithm to become more accurate in analysing.

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