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Crime Rate Prediction System Using Cyber Forensics

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Abstract
Crime analysis and prediction is a systematic approach for identifying the crime. This system can predict region which have high probability for crime occurrences and visualize crime prone area. Using the concept of data mining we can extract previously unknown, useful information from an unstructured data. The extraction of new information is predicted using the existing datasets. Crimes are treacherous and common social problem faced worldwide. Crimes affect the quality of life, economic growth and reputation of nation. With the aim of securing the society from crimes, there is a need for advanced systems and new approaches for improving the crime analytics for protecting their communities. We propose a system which can analysis, detect, and predict various crime probability in given region. This paper explains various types of criminal analysis and crime prediction using several data mining techniques.
For our job, we are using main and secondary data. By analyzing the data, we find out for many places the prediction rate of different crimes and use the algorithm to determine the prediction rate of the path. Finally, to find out our safe route, we use the forecast rate. This job will assist individuals to become aware of the crime area and discover their secure way to the destination.
Keyword: *Crime prediction, Decision trees, Linear Regression, k-means*

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I. INTRODUCTION

The crime data rate is increasing because the modern technologies and hi-tech methods are helps the criminals to achieving the illegal activities. according to Crime Record Bureau crimes like burglary, arson etc have been increased while crimes like murder, sex, abuse, gang rap etc have been increased. Crime data will be collected from various blogs, news and websites. The huge data is used as a record for creating a crime report database. The knowledge which is acquired from the data mining techniques will help in reducing crimes as it helps in finding the culprits faster and also the areas that are most affected by crime. Data mining helps in solving the crimes faster and this technique gives good results when applied on crime dataset, the information obtained from the data mining techniques can help the police department. A particular approach has been found to be useful by the police, which is the identification of crime 'hotspots' which indicates areas with a high concentration of crime. Use of data mining techniques can produce important results from crime report datasets. The very step in study of crime is crime analysis. Crime analysis is exploring, inter relating and detecting relationship between the various crimes and characteristics f the crime. This analysis helps in preparing statistics, queries and maps on demand. It also helps to see if a crime in a certain known pattern or a new pattern necessary. Crimes can be predicted as the criminal are active and operate in their comfort zones. Once successful they try to replicate the crime under similar circumstances. The occurrences of crime depended on several factors such as intelligence of criminals, security of a location,etc The work has followed the steps that used in data analysis, in which the important phases are Data collection ,data classification, pattern identification, prediction and visualization. The proposed framework uses different visualization techniques to show the trends of crimes and various ways that can predicts the crime using machine learning algorithm.

II. LITERATURE SURVEY

Researchers have proposed a variety of data mining techniques to provide crime data analysis, crime prediction, criminal identification and crime hotspot area identification. Some of the papers are discussed here. Mehmet Sait, and Mustafa Gok presented the criminal prediction for finding the most probable criminal of a particular offense incident when the suspected list of offenders are provided with the criminal data which is generated synthetically using Gaussian Mixture Model. The authors used Naive Bayes Classifier and Decision tree for offender prediction method and compared its performance. As a result of the comparison the authors

achieved that the Naive Bayes Classifier consumed less execution time and performs better with 78.05% accuracy. Agarwal, analyzed various offenses done by offenders and predict the chance of each offense that can again be performed by that offenders. The authors used Apriori practice for frequent item set generation that can be done by the offenders.

III. CONCLUSION

In this system , we get to classify and cluster to improve the accuracy of location and pattern-based crimes. From the clustered results it easy to identify crime prone areas and can be used to design precaution methods for future. The classification of data is mainly used to distinguish types of measures to be used for each crime. Different crimes require different treatment and it can be achieved easily using this application.

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