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Blackspot App: Accident and Crime Spot Detection using Android

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Abstract: *Road and traffic is most important issue not only for Indian government but also for common people. Mostly, it is found that road Accident & Crime happening are more frequent at certain specific locations i.e., black spot. The analysis of these black spot can help in identifying certain road Accident & Crime factor that make a road Accident & Crime to occur frequently in those locations. In this project we apply statistics analysis and data mining algorithms on the Fatal Accident & Crime dataset as an attempt to address this problem. Association rule mining is one of the popular data mining techniques that identify the causes of Accident & Crime of road Accident & Crime. In this project, we first applied éclat algorithm to group the Accident & Crime locations into three level, first level, second level and third level Accident & Crime location. The rules show different factors associated with road Accident & Crimes at different locations. For all this we provide Accident & Crime data that are issue from Nashik city commissioner office. Safety driving suggestions will made based on Accident & Crime data, association rules, classification model, and clusters obtained.*

Keywords: Eclat algorithm, Clustering, Classification, Association, GPS Tracking, Road way fatal Accident & Crime.

I. INTRODUCTION

To identify important factors to road Accident & Crimes in Nashik we have obtained a large dataset every Accident & Crime recorded in the Nashik district commissioner office in the Year 2014-2017. The data is currently in an unsorted and scatter for- mat and is stored in a Microsoft excel sheet data- base table. Unfortunately, with the data in its cur- rent format, no relevant points or conclusions can be drawn. It is hoped that by applying data mining processes and techniques to the data set, relevant attributes and patterns can be established. And scientific study will also do that will helpful to government authorities and citizen. The main achievements of this paper are to greater awareness of the conditions affecting road traffic Accident & Crimes, establishing which individuals are most likely to be involved in a road traffic Accident & Crime.

II. PROPOSED METHODOLGY

Road Accident & Crimes and traffic is most important issue not only for Indian government but also for common people. Road safety becomes a major public health concern.

Everyday lots of vehicles driving on the road, and traffic Accident & Crimes happens at anytime and anywhere. Some people die in Accident & Crime also. As human being we all want to avoid Accident & Crime and stay safe.

To find out how to drive safer, data mining technique could be applied on the traffic Accident & Crime dataset to find out some valuable information, thus give driving suggestion.

To develop a paper for identifying the black spots on roads of Nashik city where frequently Accident & Crimes happened. The attributes of Eclat algorithm like execution time, depth first search reduces memory requirement like this attribute of Eclat algorithm matches to our data set. The data set collected from Commissioner of Nashik. Using data mining technique such as Eclat algorithm, we are identifying the black spots on roads and identify the geographical location were frequently Accident & Crime occur. After identification of black spots user gets information through user application.

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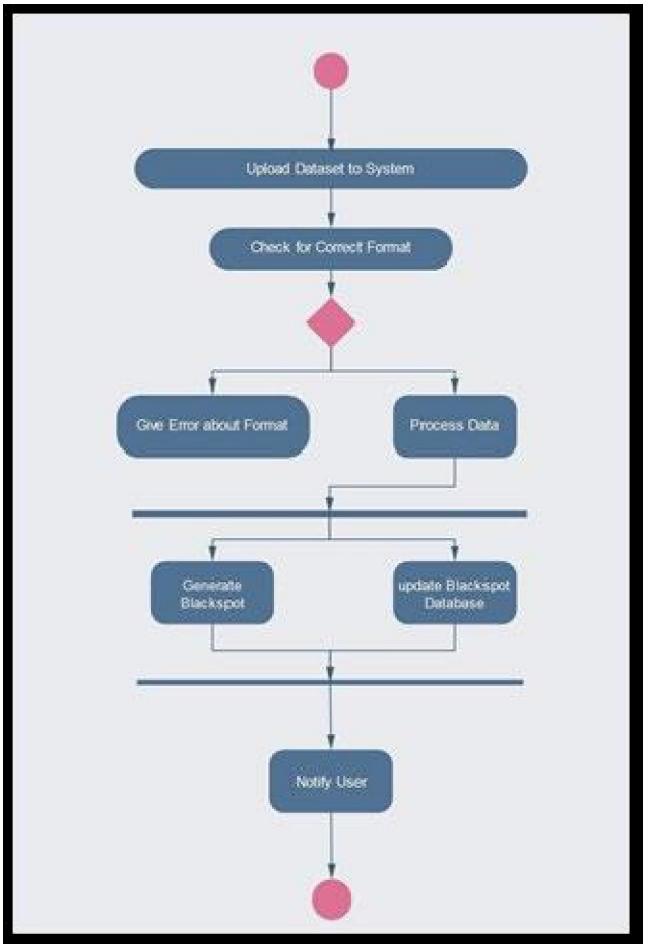

III. LITERATURE SURVEY

In this paper they stated that result obtained from association rule of a priori algorithm more relationship between accident and crime factors and accident severity level were investigated while applying a priori algorithm.[1]
In this paper, emphasize on interpretation of outcome using divide Accident & Crime- location into k-group.[2]
In this paper, use K-mean clustering to group the similar object off the heterogeneous data.[3]
Maninder Singh stated decision tree which predict cause of Accident & Crime and Accident & Crime prone area.[4]
They emphasize on attempting to prevent specific damaging scenario such as vehicle rear end collision and lane division using data mining approach [5]. Xiamen and Hong Wang studied those relevant terms and review several principles. they summarize drawback in traditional eclat algorithm.[6]

IV. ADVANTAGES

The result generated from system are indicates black Spot even if that location is no danger zone. So generated result must be faithful about black Spot. Detection of black spot of Nashik city Will help to government authorities and common citizen also. This paper will also helpful to another city. Scientific study of road traffic data will help to give safety driving suggestion that will reduce the fatality rate.

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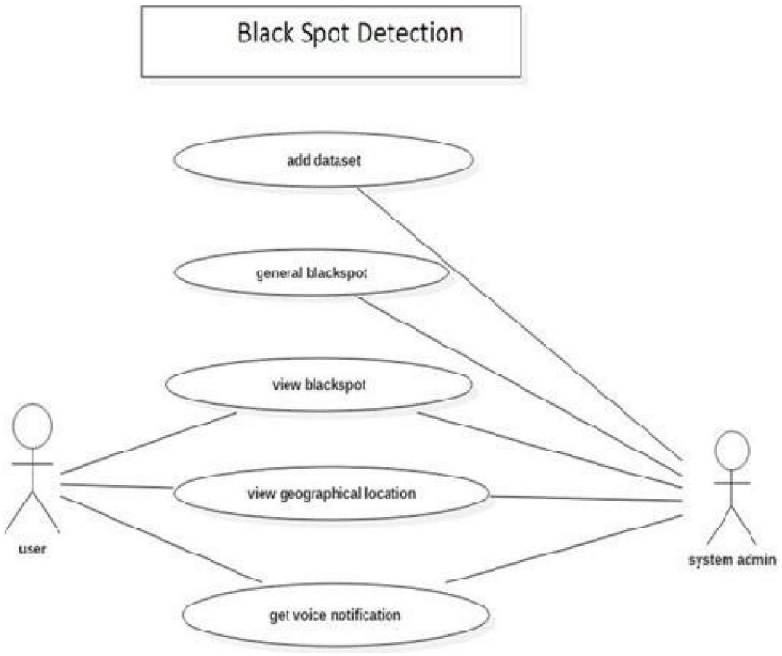

Figure: Use case diagram

V. DISADVANTAGES

System might not be able to recognize recently known accident prone zones.

VI. SYSTEM REQUIREMENT

1. Smartphone enabled with GPS minimum requirement with 3GB RAM with minimum requirement of 1GB.
2. Operating System: Windows Xp and later versions.
3. IDE: Android studio v3.2.
4. Programming Language: Java, Android

VII. FUTURE SCOPE

Detection of black spot of Nashik city will help to government authorities and common citizen also. This paper will also helpful to another city. Scientific study of road traffic data will help to give safety driving suggestion that will reduce the fatality rate.

VIII. CONCLUSION

In this study, the technique of association rules with a large set of Accident & Crimes data to identify the reasons of road Accident & Crimes were used. Analysis showed that producing the association rules, makes identification of factors involved in the Accident & Crime that occur together, easier. It shares a lot in understanding the circumstances and causes of the Accident & Crime. So, the association rule mining gives the direction to deeper re- search on the causes of road Accident & Crimes. This article can be a step towards providing useful information for highway engineers and transportation designers to design safer roads.

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