CRIME SPOT ALERT SYSTEM

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Abstract

Passengers have been the major victims of various crimes these days. In several cities, crimes are increasing at rapid rates and often at particular spot. The reason can be, passengers tend to pay less attention to their own safety when they are in travelling mood. Many big cities have also reported sufferings from the crimes, which have led to public safety concerns. Certainly, it is need of the hour to detect those crime affected areas. Enhancement in information technology and data processing capabilities help in achieving this through detailed transit records.In this project, we have developed crime spot detection system, which can identify crime affected areas based on the transit records and FIR filed at different police stations. The system consists of two different modules namely Admin, and User. Admin module is deployed in order to update the transit records frequently, as the number of crimes may vary overtime. The user can make search over routes and find out the crime affected areas. Pre-Processing is done in order to avoid redundancy as well as to remove noisy data. This paper mainly focuses on the security of travelers as some of them may be new to certain places, hence it is necessary to ensure their safety. It is achieved by making them alert about the crime affected spots. An attempt has been made by this project to depict those areas on maps for easy and safe navigation. The highlight of the project is that the user will also be notified by an email about the crime spotted areas.

Keywords-- Non-Cyber Crime, travellers, Crime spots, Preprocessing, Safety, Crime rates, Navigation, Recommendation

I. INTRODUCTION

rime is the universal phenomenon which has always been a part of integral civilization. But what concerns us today and makes significant public issues is that the number of incidents have been rising altogether globally and among all segments of society. The recent growth rate of crime has not only been unprecedented but also has been accelerating.

New types of crimes are emerging and old types are getting new dimensions. Major problem with crime detection and reporting is lack of communication between the individuals and police. As of now there is no standard platform for exchanging real time information about criminal activities, crime suspects and people under investigation for various crimes within the society. Lack of readily available information on crime trends in major towns and cities is additionally a key setback to security needs.

The idea behind many of the projects is that crimes are relatively predictable; it just requires the ability to sort through an enormous volume of information to seek out patterns that are useful for enforcement. This sort of information analysis was technologically impossible some decades ago, but recent developments in machine learning have set hope for this task. Crime analysis is useful in identifying the crime areas from past crime data. During this analysis, various parameters need to be taken into consideration such as crime categories, statewide crime rates and crime patterns. Prediction can also help in reducing crimes to certain extent in a location. The crime analysis is principally accustomed to analyze the crime areas to understand which area has frequent crime occurrence.

II. RELATED WORKS

"**Hotel Suggesting System"** Uzma Fasahte et.al. developed a recommendation system[1] which helps users to choose restaurant based as per their convenience. It is often perplexing for a person to decide which restaurant he must visit from a huge range of available options. There have been numerous suggestion frameworks accessible for shopping,

online video excitement, recreation, and so on. Eateries and dining is one such territory where there is a major change to prescribe feasting choices to the client.

"Recommendation System Using Clustering Techniques"
E-Seek Jo et.al. proposed a system of propelled eatery audit framework [2] that identifies concealed conclusion in input of the client and rates the eatery. The framework utilizes mining procedures with the end goals to accomplish usefulness. Assessment digging for eatery surveys is web application which gives audit of the criticism that is posted.
The frameworks takes criticism of different clients, in light of the supposition and will indicate whether the posted eatery is great, terrible, or most exceedingly terrible.

"Recommending System Based On User Reviews"Li Chen et.al.proposed a review-based recommendation system[3], with the aim of assimilating the users review into user modelling and suggesting process. Opinion mining and text analysis are used to sort out the different types of reviews either positive negative or neutral . In case of inadequate information regarding a restaurant, hotels or any commercial business an individual will be depending on the reviews to make a proper and accurate decision.

"Restaurant Recommender System Based on user preference Location in Mobile Environment"
Jun Zeng et.al. proposed a recommender system which adopts a user preference model[4] by using the features of user's visited restaurants, and also utilizes the position information of user and restaurants to dynamically generate the advice results. The results of a case study shows that the proposed restaurant recommender system can effectively utilize user's preference and also the case information to recommend personalized and suitable restaurants for various users.

III. PROPOSED WORK

The aim of the project is to alert commuters regarding crime spots as they travel so that they take extra care on visiting those areas and can prevent the occurrence of violence to a certain extent. Our proposed method is built upon transit records that contain the route information as well as crime rates of certain places. It is targeted to recommend safe routes for users as they travel across various destinations. It provides the time taken via each route and also complete path information from source to destination to the commuters. As the users are alerted immediately through mail after their search, issues do not arise because of network or loss of data connectivity. Some advantages of proposed system are listed below:

➢ It helps with research process, as according to a forbes article, people conduct a detailed analysis before they visit a particular area to identify the nature of places.
➢ Alerts user about crime areas in their registered mail id.
➢ Helps users to make proper decision.

➢ The users can choose the way which has less number of crime spots.
➢ Detailed information about routes and distance to be covered is mentioned properly.

IV. METHODOLOGY

The methodology followed in this project is top down approach to emphasize the planning and complete understanding of the system .The proposed system is separated into two modules and six sub modules. Each module is processed that generates the result from given data. Figue 1 shows the hierarchical diagram of the system. The user registration details and information about the routes will be stored in database. Validity check of password that user has entered is done to grant access to the homepage. Our system will notify the users about the crime rates at particular areas through their registered mail id's.
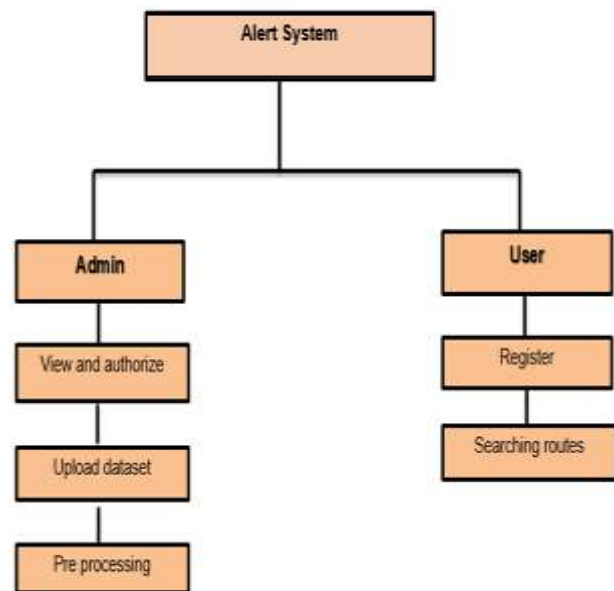

Figure 1. Hierarchy diagram

The data includes the transit records as well as the crime rates of various places. The complete control is undertaken by the administrator as they upload datasets frequently and also have the right to authorize users. This paper mainly focuses on non-cyber crimes as cyber crimes do not have much effect on commuters. As cyber crimes require time with good network connectivity, they may not affect the safety of commuters much while travelling. Pick-pocketing, kidnapping murder, theft, rape,etc are some of the crimes taken into consideration in the project as they may create vast effect on victims, It is very important to update the datasets as the crime areas may vary due to rapid increase in crimes across cities.

V. SYSTEM DESCRIPTION

Figure 2 shows the overall architectural design of the system which properly explains the flow of project. The admin can add possible routes based on the source and destination chosen by the user, from which the user can choose the most appropriate one . The admin uploads datasets in the form of CSV file which includes the route information and crime rates. Then pre-processing is done in order to avoid redundancy as well as to remove noisy data. After preprocessing, admin can view the added routes in tabular form.
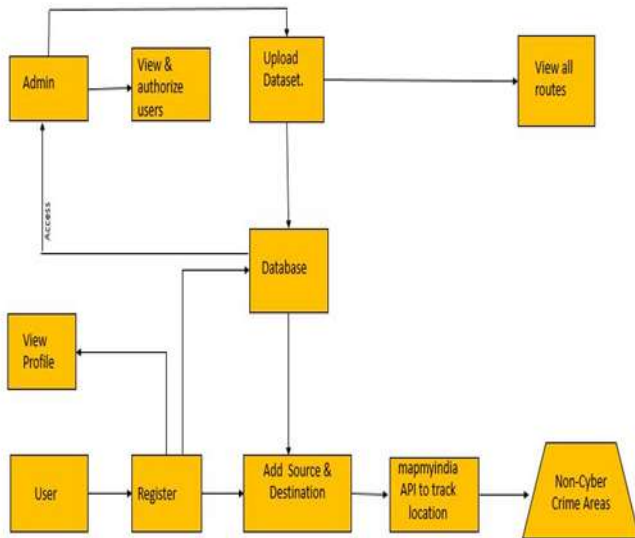

Figure 2. Architectural Diagram

The user plays a key role in this system. First the user registers his/her details like Username, Password, Mobile number, Mail Id, City and Address. Once the Admin verifies and authorizes the registered details, user can move forward with their respective login process through entering of username & password. After successful authentication, user can perform search over routes.Sqlyog is used for storing information in database which helps in quick retrieval. Tracking the crime areas is done with the help of MapmyIndia Maps API . It helps the travelers from beginning till the end of journey by providing route information.It is best suitable for planning trips as it displays the time required and distance needed to be covered at the search time itself.

VI. RESULT AND PERFORMANCE ANALYSIS

Output of the system is obtained as expected. The application is working successfully. Figure 3 represents the mail received by the user in his/her registered mail id after the search.
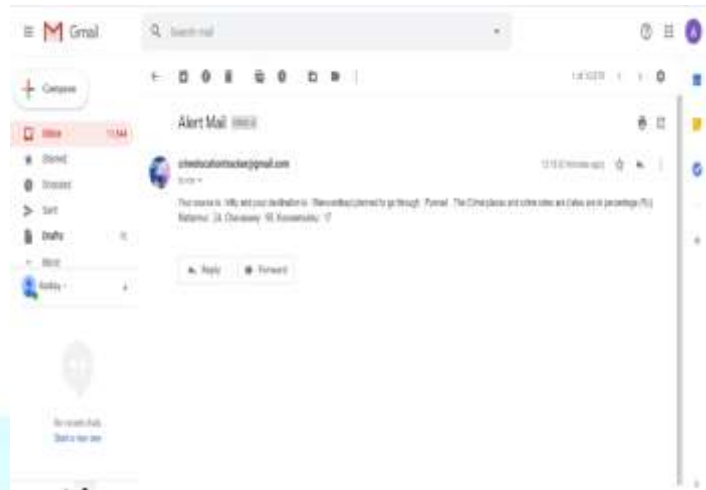

Figure 3. Alert mail for users

The user has got the expected result based on the entered source, destination and intermediate station.The mail contains names of the areas along with crime rate in percentage. Those areas are depicted on the map as well.In map the Source & Destination will be marked in Blue and the crime spot is indicated in red. On the left complete route information is displayed which includes the time taken as well as the distance.

The network issues while travelling does not matter as the users receives the mail & plotting the crime areas are also done the same time of search .Figure 4 represents the crime spotted areas on Map.
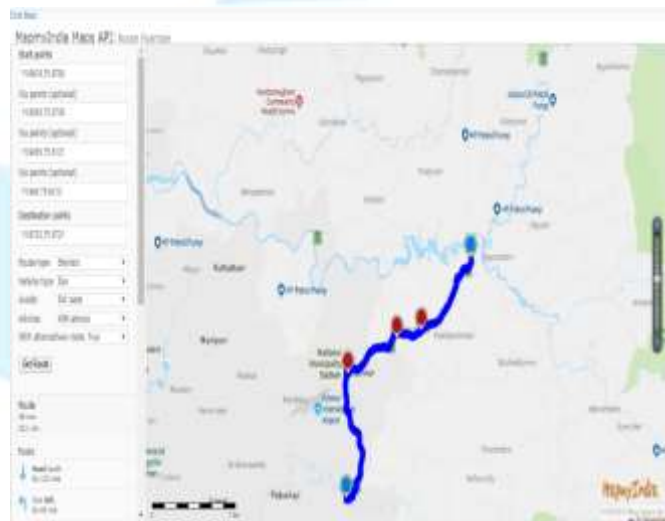

Figure 4. Crime areas on map

VII CONCLUSIONS AND FUTURE WORK

In this paper, we developed a tracking system by using large-scale transit records. The system assists in identifying crime areas and informing users regarding high-risk areas.

Specifically, we first collected crime rates from different police stations across a district. Consequently the dataset is altered over time as the number of crimes increase in a rapid manner.The project solves the disadvantages of existing system. After implementing all the modules with various testing methods, the results of each module has satisfied the user. This project aims to help commuters in identifying the crime spotted areas.

For future work, this application can be integrated with the police database to tell the exact locations, crime rates etc. This application can also be further expanded to convert into live tracking from android application so that user gets alert on reaching the spot. If some law enforcement agency want to use this application, a request option can be shown, so that after confirmation of the request, their database can be attached to this application. When large number of agencies are linked together, the scope to control the crime will increase. The alert can also be sent to the user's mobile number.

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