International Journal of Latest Engineering Research and Applications (IJLERA) ISSN: 2455-7137

Volume – 02, Issue – 06, June – 2017, PP – 83-85

Analysis of road accident spots (hotspots) in HP for establishing best health centers nearby them (hotspots)

Nitika Verma[1], Prince Sharma[2], Ekta Chauhan[3]

[1]*(Computer & Science Engg , A.P. Goyal Shimla University(H.P.),India)*

[2]*(Computer & Science Engg , A.P. Goyal Shimla University(H.P.),India)*

[3](*Computer & Science Engg , A.P. Goyal Shimla University(H.P.),India)*

Abstract: This paper is about the road accident data and about the issues of road accident data. The main objective of this paper is to provide good health centers nearby accident prone areas of Himachal Pradesh.

Keywords: accident prone areas, health centers, issues of road accidents, primary data, data analysis.

1. INTRODUCTION

1.1. Nature of the problem The problem defines in this paper is related to road accident.. The main objective of this paper is to provide good medical health centers to the people suffered from accident as soon as possible. We took this issue because many of people die in accident because they do not get good medical facilities on time because the good facilitated hospitals are far from that accident prone area.

1.2. Previous work We study various research papers related to road accident data to find out different issues of road accident and causes of death in road accident like : condition of buses, condition of roads, overtaking, over speeding etc. Theses previous work done was as follows:

1.2.1 "József Benedeka, et.al.", in their paper "Hotspots and social background of urban traffic crashes: A case study in Cluj-Napoca (Romania)",they describe road accident problem in Cluj-Napoce city in Romania. They wrote that-"Mobility practices have changed dramatically in Romanian towns over the last 25 years.. Urban areas like Cluj-Napoca are facing both increasing immigration and car mobility, and therefore increasing levels of road traffic crashes." In their paper they analyze the road traffic data to determine crash hotspots , and then, the paper focuses on social groups involved in car crashes. According to the results of this paper the most vulnerable drivers groups exposed to the occurrence of road traffic crashes and the important role of alcohol consumption in generating road traffic crashes. Men aged between 21 and 25 are the most vulnerable drivers exposed to the occurrence of road traffic crashes. The result also say that much higher crash involvement of women in general as compared to men, the younger women (11–25 year-old) being highly vulnerable.[1]

1.2.2 "Becky P. Y. Loo", in his paper"The Identification of Hazardous Road Locations: A Comparison of the Blacksite and Hot Zone Methodologies in Hong Kong".In his paper "the spatial characteristics of road crashes in Hong Kong are analyzed. This paper first introduces the hot zone terminology in road safety research. Then , the methodological issue s and difficulties are discussed . Finally, the spatial characteristics of road crashes in Hong Kong in 2004 are analyzed by the hot zone methodology." On the based of results of this paper, it is found that the spatial characteristics of crashes are likely to vary by road type and by district. Moreover, though the hot zone methodology supplements the black site methodology, it is superior and more flexible in many aspect s, especially in the identification of hazardous road locations on expressway s and in the rural areas.[2]

1.2.3 "LiyamolIsen, Shibu, Saran", in their paper "Evaluation and treatment of accident blackspots using Geographic Information System" the study is conducted by the Kerala Road Safety Authority (KRSA) found that "The maximum numbers of accident-prone stretches or the black spots are in Alappuzha district. In traditional identification of black spots, methodologies developed based on the total number of accidents occurred in that particular location."The study was attempted to identify the most vulnerable accident black spots in Alappuzha district using Geographic Information System(GIS).According to the results of this paper"Kalavoor was identified as most vulnerable accident location in Alappuzha district, and suggested some possible alternative measures to improve the transportation system in Kalavoor."[3]

1.2.4 "Mohammad Asghari , et.al.", in their paper "Probabilistic estimation of link travel times in dynamic road networks" they describe " the problem of computing these link travel time distributions. To the

bestof our knowledge there has not been any study on how to compute probability distributions for links (/edges) in road networks. How this step can affect the accuracy of the travel time distribution over the entire route." According to the result "they introduced a method for evaluating probabilistic link and path travel time estimations. This technique made it for the first time possible to compare the existing approaches and the developed link travel time estimation methods against each other in terms of accuracy".[4]

1.2.5 "Tessa K. Anderson" in his paper "Kernel density estimation and K-means clustering to profile road accident hotspots" they show"(1) a methodology using Geographical Information Systems (GIS) and Kernel Density Estimation to study the spatial patterns of injury relate d road accidents in London, UK and (2) a clustering methodology using environmental data and results from the first section in order to create a classification of road accident hotspots. The use of this methodology will be illustrated using the London area in UK." This paper is concerned with" the spread of risk , the risk of having an accident, geographically will occur not just at a single point but over a given area."[5]

Purpose of the paper The main purpose of this paper is to establish more good health centers in Himachal Pradesh in order to provide good medical health centers in H.P. to the people suffered from road accident as soon as possible.

Contribution of paper The main contribution of the paper is to provide more better and good health centers in H.P and to be helpful in reducing causalities of road accident in H.P. and to provide good medical facilities to the people suffered from road accident as soon as possible.

2. PROPOSED WORK

In this, we will collect primary data from different sources and via graphical representation we will analyze data and will perform shortest path algorithm on it to find out nearest point on a shortest path on which we will establish a good health centers.

With the help of shortest path we will first of all find shortest path of accident prone areas and then we will find out nearest point on that shortest path on which we can establish a good health center.

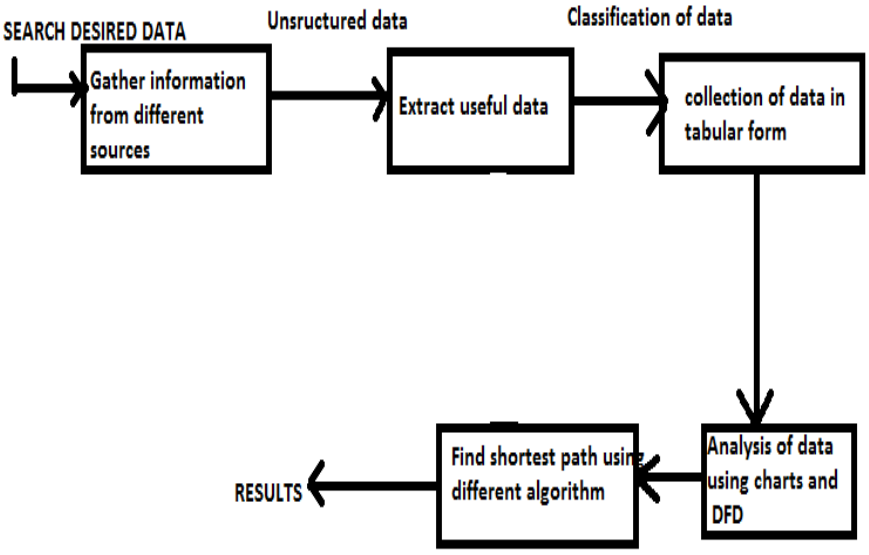

Fig 1: Proposed work

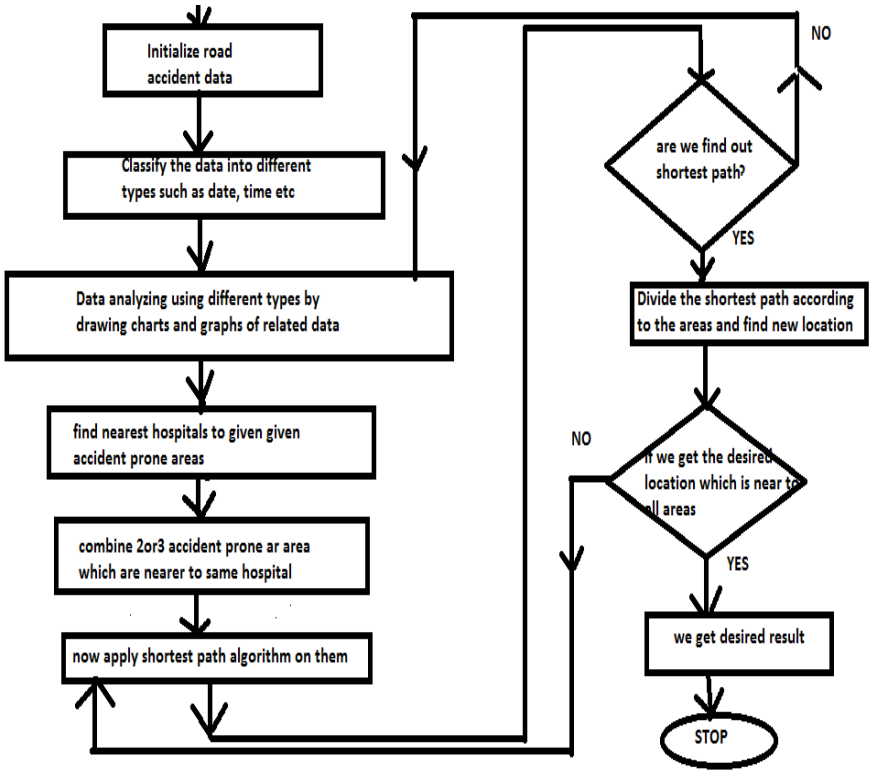

Fig 2 : data flow diagram of proposed work

3. CONCLUSION

We conclude that, the issue of providing good and better medical health facilities to the people is one of the main issues of road accident with the help of this we can help in reducing casualties of road accidents. Many of people die in accident because they do not get good medical facilities on time. So, in this paper we can try to solve this problem by analyzing road accident data and then combining 2 or 3 accident prone areas and try to establish a good health center on it.

REFERENCES

[1]. JózsefBenedek,et.al.,2015,"Hotspots and social background ofurban traffic crashes: A case study in Cluj-Napoca (Romania)",*Accident Analysis and Prevention 87 (2016) 117–126*.

[2]. Becky P. Y. Loo,15 Apr 2009,"The Identification of Hazardous Road Locations: A Comparison of the Blacksite and Hot Zone Methodologies in Hong Kong",*International Journal of Sustainable Transportation, 3:187–202, 2009*.

[3]. LiyamolIsen, Shibu. A, et.al.,August 2013, "Evaluation and treatment of accident black spots using Geographic Information System",*ISSN: 2319-8753*.

[4]. Mohammad Asghari, et.al.,2015,"Probabilistic estimation of link travel times in dynamic road networks",*ISBN 978-1-4503-3967-4/15/11 $15.00.*

[5]. Tessa K. Anderson,2009, "Kernel density estimation and K-means clustering to profile road accident hotspots",*Accident Analysis and Prevention 41 (20 09) 359–36 4.*

