**DATA MINING ASSIGNMENT**

**TASK 1.** Read the paper and write a 4-7 sentence (about a paragraph) summary. State in your own words what you learned, what expanding your knowledge of the topic, and what you found interesting about the information you received. Please include the major points of the paper, and any weaknesses the authors point out with their research.

**Answer** - The significance of pedestrian safety serves as an indicator of the precautions we must take internally to prevent unplanned mishaps. Due to the tendency toward urban expansion, pedestrians rank among the largest categories when all road users are considered. Diving deep into the findings of the paper we could find, there were different metrics as to how it was judged for example age, gender, atmospheric condition, light condition, and time. KARS and USA FARS were employed in the investigation. In this study, an effort has been made to pinpoint the contributing variables of fatal pedestrian crashes in both Kansas and the USA while also comparing Kansas and the USA based on these contributing elements. First, Kansas and USA's trends in fatal pedestrian collisions are noted. There is also a discussion of countermeasures and how, if used, they could prevent significant harm. The identified contributing factors to fatal pedestrian collisions are useful for developing viable remedies that will eventually lower the number of fatal pedestrian collisions.

**TASK 2**.Answer the following questions:

(a) What time of day is most common for pedestrian fatalities in Kansas (over all years)?

**Answer** -The tendency throughout the years has been for pedestrian fatalities to occur most frequently between the hours of 6 pm and 6 am. Over the years, deadly collisions have frequently occurred as a result of intoxicated driving or poor nighttime visibility. In this, the peak fatality hour was from 6 am to midnight, when a record 24% of people died.

(b) How does this compare with the most common time of day for the US overall?

**Answer** - Over the years, pedestrian fatalities have been more frequent during off-peak hours, or from 6 p.m. to 6 a.m. When compared to Kansas, there are higher fatalities from 6 to 9 o'clock in the evening. Again with prominent individuals, Kansas is open from 9 p.m. to 6 a.m.

(c) Looking at figure 11, would you say poor atmospheric conditions have a significant impact on pedestrian fatalities?

**Answer** - No, poor atmospheric circumstances are not the problem; instead, it has been discovered that most fatalities take place on clear days with no unfavorable weather. This is due to the fact that more deadly pedestrian accidents occur when the weather is favourable and more people choose to go for walks. Short strolls around the countryside results in fatal accidents for pedestrians.

(d) On page 392, the author states “For Kansas, speed limits between 30 mph and 40 mph account for 52% of total crashes (26% crashes for 30 mph and 26% for 35 mph or 40mph), …”. Why is this statement as written incorrectly?

**Answer -** One thing to note is that the author refers to the inaccurate 52% of all crashes between 30mph and 40mph whereas the metric supplied is for 30mph or less, which is 0mp to 30mph. It is accurate to say that 26% of the population travels at 30 mph or less and another 26% does so at 30 mph to 40 mph, however, the statement's use of the numbers 26 percent for 30 mph and 26 percent for 35 percent to 40 percent is somewhat off. This can be explained by the large number of rural roads with high-speed limits in Kansas and the inadequate enforcement of the legislation, both of which may contribute to an increase in fatal pedestrian collisions.

(e) The authors go on to explain the abnormally high number of fatalities at higher speeds with “… Kansas has a lot of rural roads, where the speed limit is high and in rural roads, laws are not strictly enforced, all of which might lead to a larger number of fatal pedestrian crashes.”. Which of the suggested countermeasures would you think might successfully address this issue? If you do not find anything sufficient, what might you recommend instead?

**Answers - *Geometric countermeasures*** are one type of measure we shall use. Geometric countermeasures can take the form of raised medians at unsignalized crossroads, roundabouts at unsignalized intersections, Refuge Islands, raised pedestrian overpasses, paved shoulders, etc. Some of the operational methods we can take care of include adding intersection lights, enhancing pavements, and regulating parking in specific places. In such circumstances, pedestrian awareness is especially crucial. Installing speed check cameras is also necessary so that offenders receive timely penalties and appropriate punishment. These are a few suggestions for lowering the number of pedestrian fatalities.