Introduction:

There is a growing concern in traffic accidents rate in recent years. Using Indian country Map with all the state traffic accident records from 2016-2018 as case study, here we have applied the combination of geo-information technology and spatial-statistical analysis to bring out the influence of spatial factors in their formation. From 2016 to 2018, accidents in various states of India have been analyzed and the accidents are classified as fatal accidents, accidents, killed persons and injured persons. The maps are represented as per the following criteria:

Map 1: MAPATHON_Road Accidents Analysis of India_ 2018
Map 2: MAPATHON_Road Accidents Analysis of India_ 2017
Map 3: MAPATHON_Road Accidents Analysis of India_ 2016
Mapathon2008_AdditionalSupportAnalysisDocument

These maps include pie chart analyses which show the total number of fatal accidents, accidents, killed persons and injured persons in the year of 2018 to 2016. Based on the total number of these detailed information, variable sizes of pie charts of different states in India have been generated, representing the severity of the accident in each state. The majorly affected states are highlighted in the figure. The same type of analysis has been conducted for 2017 and 2016. Additionally, one document is attached which gives the pie chart analysis related to the majorly affected states with respect to the four types of urban accidents.

Methodology:

- Almost all GIS data sets have both spatial and non-spatial data components. In QGIS canvas, we have used both spatial and non-spatial data.
- Add vector data layer (shapefile)
- Next step is to open attribute table of the shape file to view non-spatial data and do the Vector Styling to create a map.
- Add the data file to attribute table of shape file.
- Labeling Vector File

ISRO Data Used:

In this mapathon, we have used the data provided by the https://data.gov.in/resources/stateut-wise-total-number-fatal-road-accidents-total-road-accidents-persons-killed-and)

Complexity:
GIS is used as a management system for accident analysis by applying combination of spatial-statistical methods for the year 2016-2018 for all the states of India. The operational approach of spatial patterns was developed in Quantum Geographical Information System (QGIS) version 3.16 framework to analyze four types of urban accidents (Fatal accidents, Accidents, Killed, Injured).

Observations and Analysis:
• The number of accidents has been increased from 2016 to 2018 as shown in figures.
• The hardest-hit states may take necessary steps, such as launching publicity campaigns and improving road design to avoid accidents. In addition, in-depth analysis of such maps can be generated for each state in detail, which helps to reduce the total number of traffic accidents. In order to make the public aware, this analysis may be helpful in India.

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