Advanced Data Visualization

Experiment - 8

Harshey Kaur Soi

2021300057

BE COMPS A - BATCH G

Aim- Experiment to design interactive dashboards and create visual storytelling using D3.js on a dataset related to Environment/Forest cover, covering basic and advanced charts

Objectives:

1. To understand how to use D3.js for data visualization.
2. To implement basic charts like Bar chart, Pie chart, Histogram, Timeline chart, Scatter plot, and Bubble plot.
3. To implement advanced charts like Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, and Jitter.
4. To draw observations and insights from each chart.
5. To create an interactive storytelling dashboard using the above visualizations.

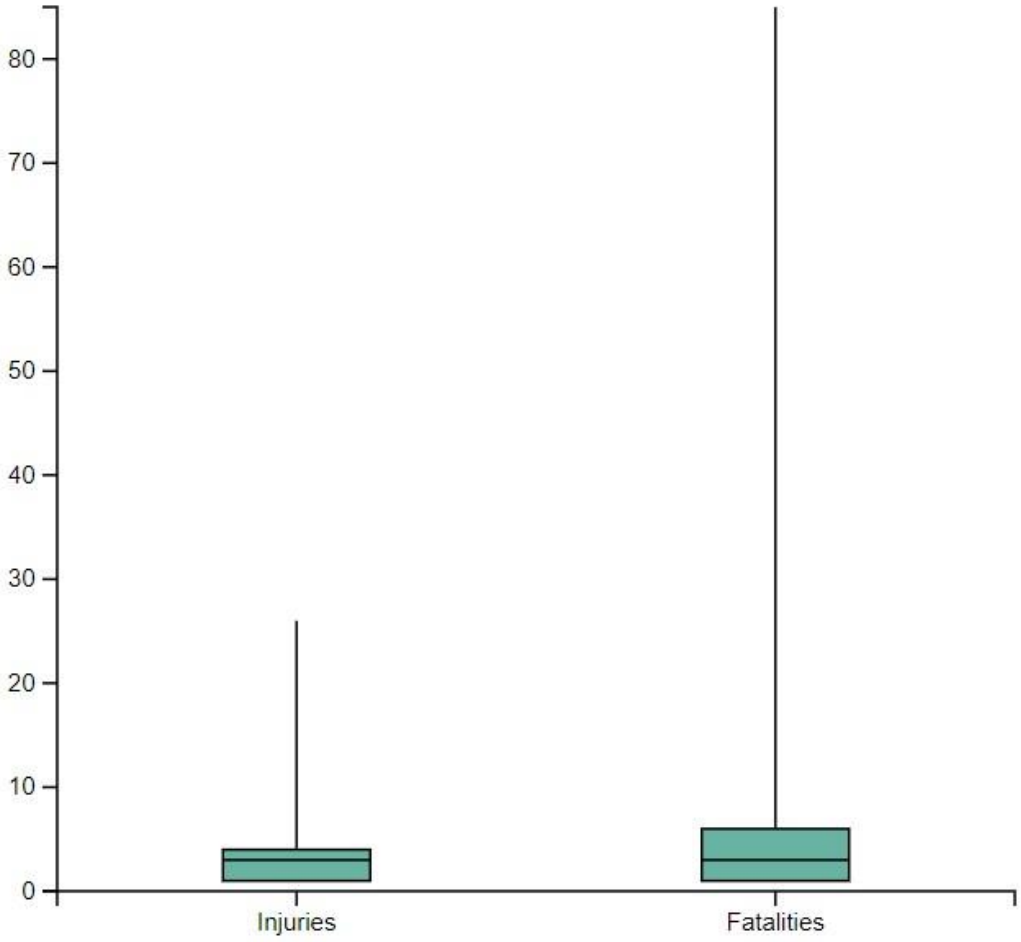
Expected Outcomes:

1. Ability to create various types of visualizations using D3.js.
2. Interactive dashboards demonstrating different types of charts.
3. Insights from the Environment/Forest cover the dataset through visual storytelling.

Word Chart-

- Places like Placer and San Joaquin etc. have more fire incidents over the years.
- **Observation**: The box plot likely visualizes the spread and distribution of fire-related data, such as the number of incidents, acres burned, or personnel involved.
- **Insight**: Box plots help in understanding the variability within the dataset by showing the median, quartiles, and any outliers. In this case, it could reveal regions or time periods with extreme fire incidents or resource usage.

Box Plot-



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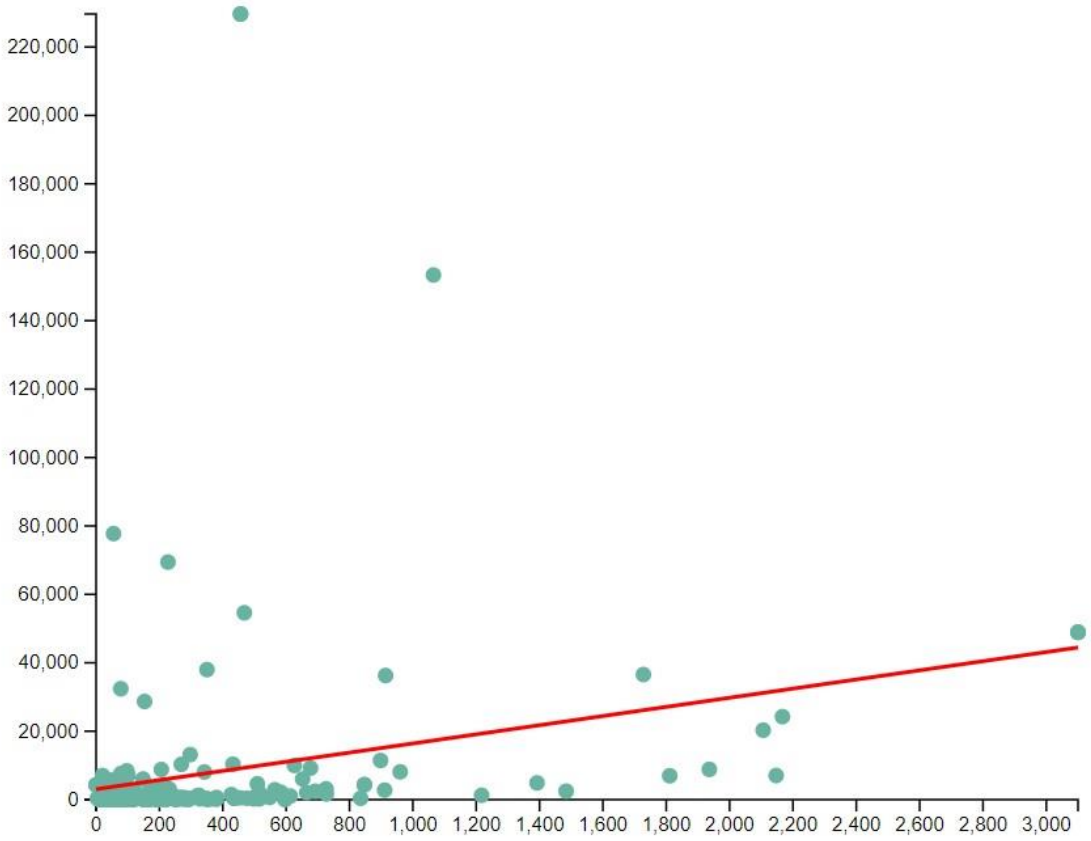
Regression Plot-



Personnel Involved VS Acres Burned

- **Observation**: The regression plot visualizes the relationship between the number of personnel involved and the acres burned during fire incidents.
- **Insight**: A linear or nonlinear trend may show whether increasing personnel leads to reduced acreage burned or not. For instance, if a positive correlation exists, it might imply that larger fire incidents required more personnel.

Conclusion- Learnt how to make advanced Charts in D3.js. Studied california fire incidents Dataset, made advanced charts on some important statistics. The dashboards and visual storytelling created as part of this experiment provide an interactive way to analyze environmental data.This analysis gives a broad overview based on the charts

mentioned in the document, though more specific interpretations could be drawn if the charts themselves were visible or if more details were provided on each plot's structure.