**Report on Interactive Visualizations**

**CSC 173 Data Visualization**

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# **Introduction**

Data analysis depends significantly on interactive visualizations because they provide a fun and engaging approach for people to explore and learn from data. In this report, we will take a closer look at those three advanced visualisations and see what we can learn. These visualisations, built with JavaScript, the D3.js package, and the Plot.js library, let users investigate the data, get new insights, and gain knowledge about the dataset.

# **Visualization 1: Node Type Distribution**

This visualization exhibits the prevalence of various node types throughout the collection. Using a bar chart, customers can see how many nodes fit into each classification. An excellent starting point for evaluating a dataset is a visual representation that gives a thorough explanation and emphasises the most common node categories. According to the data, nodes representing "people" and "organisations" were the most prevalent, while nodes representing "movements" and "events" were more uncommon. The following illustration improves comprehension of the structure and diversity of the dataset.

# **Visualization 2: Node Type Comparison**

The second visualization allows users to compare node categories by their respective quantities. Users can view data for node categories by selecting them from a drop-down menu and observing the associated horizontal bar chart. This user-friendly tool enables consumers to zero in on categories of nodes over a more in-depth examination of a dataset. The investigation revealed that the "company" node type is the most prevalent, followed by "organization" and "undefined" The structure of the dataset can be deduced from this visualization due to the simplicity with which the distribution of node types can be analyzed.

# **Visualization 3: Network Analysis**

The third visualization is a network analysis of the data set, which graphically illustrates the node connections. The visualization depicts elements and their relationships in a force-directed network configuration. Users can modify the number of nodes in the graph, allowing them to explore various levels of detail. Users can investigate ownership, partnerships, and familial ties through the chart and learn more about them through interaction. This visualization highlights the complex interaction between nodes and assists viewers in identifying crucial nodes in the network. The visualization helps in exposing the dataset's fundamental structure and focus on its interconnections.

# **Discussion**

Three interactive data visualizations are featured in this report. The first visualisation highlights the dataset's composition by showing node type distribution. Users can examine different node types in the second. Network analysis, the third illustration, shows node connections and dataset organisation. These visualisations help people analyse data, create narratives, and draw conclusions.

# **Conclusion**

This report demonstrates the effectiveness of interactive data exploration via interactive visualizations. These visualizations, constructed with the JavaScript, D3.js, and Plot.js frameworks, allow users to investigate the data, extract insights, and make confident decisions. Through the presentation of node type distribution, the facilitation of node type comparison, and the provision of network analysis, these visualizations enhance understanding and encourage further investigation of the dataset. Immersive experience provided by interactive visualizations enhances data processing and facilitates the communication of insights in a clear manner.