CS 405 Homework 1

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Topic:

Basic Data Visualization using SVG’s

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Introduction

The purpose of this report is presenting the results of a basic data visualization project to learn SVG. Assignment was to create SVG-based visualizations to present statistical data obtained from the Turkish Statistical Institute (TUIK) website. The selected dataset focuses on "Number of Suicides and Crude Suicide Rate" in Turkey from 2022 to 2009.

Methodology

Data Collection and Preprocessing

The dataset that is been choose from the TUIK website, specifically "Olum ve Olum Nedeni Istatistikleri 2022" section. Chosen data was downloaded and relevant columns extracted from Excel for visualization. The chosen data includes the number of suicides and crude suicide rate for each year from 2022 to 2009.

Code

It's worked on a SVG (Scalable Vector Graphics) chart with interactive sliders to control the view. The chart shows data for different years and categories represented by different colored bars. The code includes HTML elements for sliders that allow you to change the view and size of the SVG container. Also used CSS for background, and border color, positions for text and width for box sizing.

HTML Structure: The code starts with the basic HTML structure, including '<head>' and <body> tags. It uses an SVG element to create the chart.

Chart Area: The chart area is defined using the '<g>' element with a transformation to set an offset. This is a common practice when working with SVG for charts.

Y-axis and X-axis: Lines and text elements are used to create both the Y-axis and X-axis labels and gridlines according to given data.

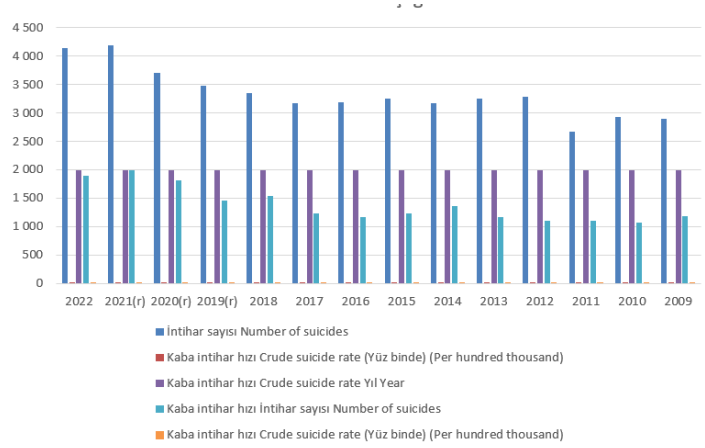
Rectangles: A series of “<rect>” elements is used to represent data points for different years. These rectangles are given different colors (blue, green, red, purple, orange). Each color represents different ratios blue represents Number of suicides, green represents crude suicide rate (per hundred thousand), red is a year, purple represents number of suicides and orange crude suicide rate (per hundred thousand).

Legend: At the bottom of the chart, there are rectangles with different colors and text labels to serve as a legend for the colors used in the chart.

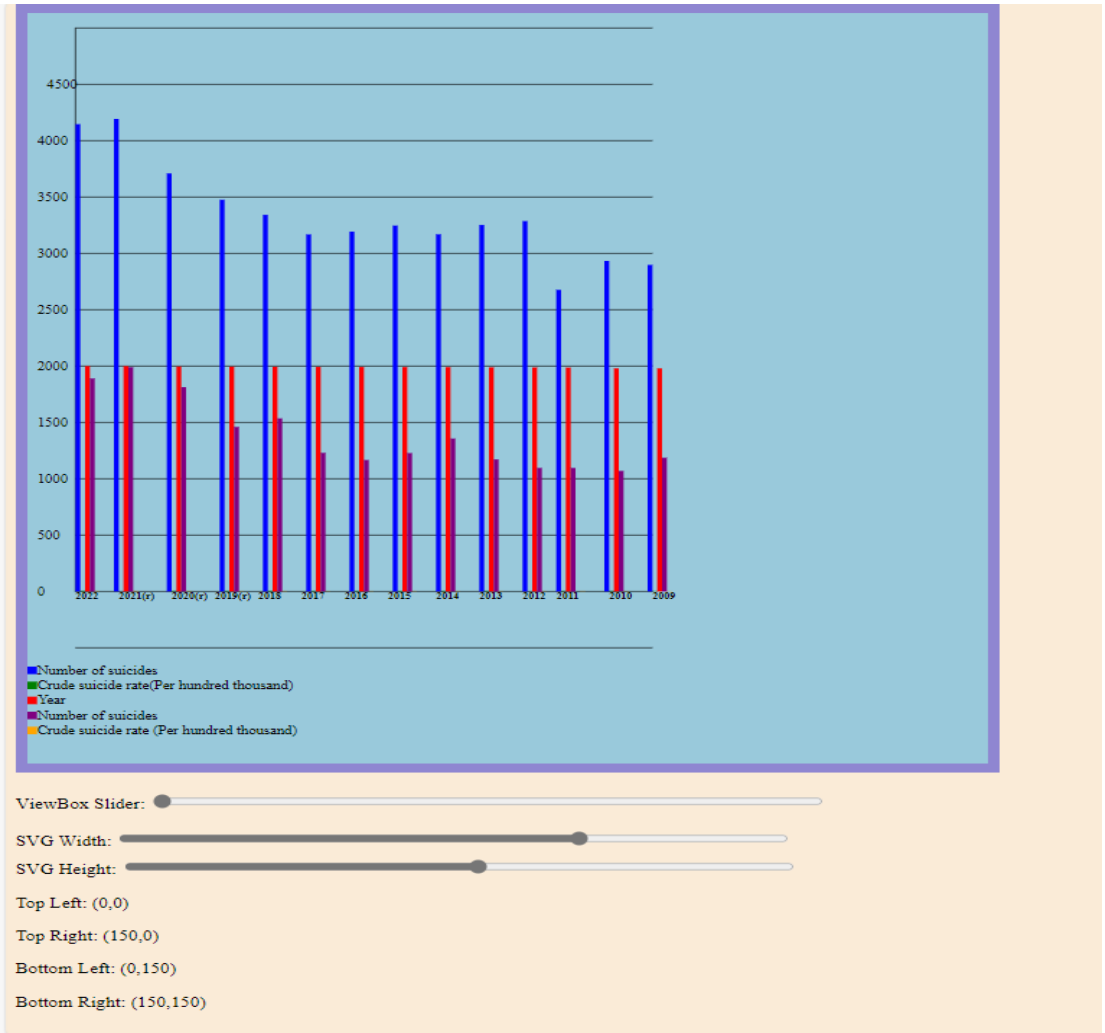
Slider Controls: The code includes slider controls for adjusting the viewBox, SVG width, and SVG height. These controls can be used to zoom in and out and adjust the chart's dimensions.
JavaScript: JavaScript code is provided to handle slider input and update the viewBox, SVG width, and SVG height accordingly. The script is functional and allows for interactive control of the chart's appearance.

Visualizations

Excel’s clustered bar chart:



Code’s clustered chart



Conclusion:

This assignment demonstrates the creation of SVG-based data visualizations to represent the number of suicides and the crude suicide rate in Turkey from 2022 to 2009. The clustered bar chart effectively shows the trends in these variables over time. The inclusion of interactive sliders enhances the user experience by allowing custom adjustments to the visualized data. Overall, this assignment provides a basic introduction to data visualization using SVGs and showcases the potential for using this technique to communicate data effectively

Reference

https://data.tuik.gov.tr/Bulten/Index?p=Olum-ve-Olum-Nedeni-Istatistikleri-2022-49679