Report: Displaying Graph in HTML using SVG

Name: Emre Bulbul

Student ID: 28882

Assignment: CS405 First Assignment

Graph Overview:

The graph shows "Bebek ölüm sayısı ve hızı" (Infant mortality count and rate) for the years 2009-2022.

Title: The title "Bebek ölüm sayısı ve hızı, 2009-2022" is displayed at the top of the graph, providing context.

Axis Labels:

The X-axis represents the years, labeled from 2009 to 2022.

The Y-axis on the left side represents the infant mortality count, labeled from 0 to 20,000.

The Y-axis on the right side represents the infant mortality rate in per thousand (binde), labeled from 0 to 15.

Axis are displayed (the small lines that aligns with numbers are included) by utilizing <path> element in SVG.

Numbers and Years displayed by using <text> element.

Data Representation:

The graph uses colored rectangles to represent the infant mortality count for each year.

Different light blue and dark red (colors are provided below) are used for visual distinction and being close to the provided graph in TUIK’s website.

The height of each rectangle is determined by the corresponding infant mortality count for the respective year.

ViewBox:  
  
viewBox="0 0 660 400" is used initially to create a view box that contains the graph.

Axis:

A path from (43 327.5) to (640 327.5) is used for x axis.

A path from (43 327.5) to (43 45) is used for y axis for infant mortality count.

A path from (640 327.5) to (640 45) is used for y axis for infant mortality rate.

For dividing x axis to the years, I divided to 14 between x from 43 to 640.

In addition to axis paths, small lines (using path), aligned with value numbers, and year numbers is added by aligning manually.

Color Coding:

rgb(66,128,191) is used to represent the infant mortality count for the years 2009-2022 (taken from the TUIK’s site by Digital Color Meter in macOS.

rgb(142,42,33) is used to represent the infant mortality rate for the years 2009-2022 (taken from the TUIK’s site by Digital Color Meter in macOS.

Bar Chart:

I managed to set the heights of the bars (rectangles) using the attributes x, y, width, and height in the SVG. These attributes define the position and dimensions of each rectangle.

For example, in the SVG code, you can see lines like <rect x="14" y="35" width="16" height="247" fill=" rgb(66,128,191) ">. Here, height="247" determines the height of the bar representing the infant mortality count for the year 2009.

To determine the starting y point, divided height of the graphs viewbox to the value and multiplied with the value by using a calculator tool, and then placed to y spots.

The width of bars is 16, but between bars’ length is not always same (because of the viewbox) so I tried to manage manually to find middle of the bars (length between bars are sometimes 42px sometimes 45px).

Also, all the bars have count of infant mortality to corresponding year. To rotate <text> element, transform="rotate(270 68.32 315)" is used I have reached to numbers 68.32142857142944 and 315 by manually trying (since view box is created beforehand dividing to 14 parts needs approximately 42px difference). So incremented 68.32 by 42 and so on.

Line Chart:

In addition to the bar chart, there is a line chart on top.

To create a line chart, I utilized <path> element in SVG.

The points where in original TUIK’s website are marked are marked with small 90 degree turned squares (for the similarity).

Rotated squares are rotated from the middle of the square.

To align path breaking points with the corresponding years I used Bars’ middle point (since width is 16 middle point is 8 incremented of the starting point of each bar).

To align path breaking points with the corresponding value, divided by using a calculator tool, and then placed to y spots.

Legend:

The bottom section provides a legend explaining the color codes for "Bebek ölüm sayısı" (Infant mortality count) and "Bebek ölüm hızı" (Infant mortality rate).

The legend made by rectangles and square (for the rate).

Scaling and Translating:

The transform attribute is used to scale and translate groups of elements within the SVG. This allows for precise positioning and sizing of elements while keeping the correct aspect ratio.

Conclusion:

The graph effectively visualizes the infant mortality count and rate over the specified years. The use of color, annotations, precise setting of bar heights, and addition of line chart points contribute to catch a similar looking to the original graph in TUIK’s website.