chartRendering.js

```
import { lifeData, getMaxVal, setMaxVal, loadLifeData, loadData } from '
./dataProcessing.js';

// Entry point for the script, executed when the document has loaded
function init() {
    // Define chart dimensions and padding
    var w = 800;
    var h = 600;
    var padding = 40;

    // Select the chart container and append an SVG element to it
    var svg = d3.select("#chart").append("svg")
        .attr("width", w)
        .attr("height", h);

    // Initialize object to store historical data per country
    var historicalData = {};
    // Variable to track selected country for highlighting
    var selectedCountry = null;

    // Updates the historicalData object with new data entries
    function updateHistoricalData(filteredData) {
        filteredData.forEach(d => {
            if (!historicalData[d.country]) {
                historicalData[d.country] = [];
            }
            historicalData[d.country].push({ x: d.value, y: d.lifeExpec });
        });
    }

    // Append x-axis and y-axis groups to the SVG
    svg.append('g').attr('class', 'x-axis').attr('transform', `translate(0,${h - padding})
`);
    svg.append('g').attr('class', 'y-axis').attr('transform', `translate(${padding},0)`);

    // Append and style a label for displaying the year
    var yearLabel = svg.append("text")
        .attr("class", "year-label")
        .style("text-anchor", "end")
        .attr("x", w - padding)
        .attr("y", padding);

    // Updates the chart for a specified year
    function updateChart(year) {
        yearLabel.text(year); // Update the year label
        drawChart(lifeData, year); // Redraw the chart with current data
    }

    // Draws the chart using filtered data for a specific year
    function drawChart(dataForPlot, year) {
        let filteredData = dataForPlot.map(country => ({
            country: country.country,
            gdp: country.years[year] ? country.years[year].gdp : null,
            lifeExpec: country.years[year] ? country.years[year].expec : null
        })).filter(item => item.gdp && item.lifeExpec);

        updateHistoricalData(filteredData); // Update historical data for path drawing
```

```
56
57          // Define and configure scales for the x and y axes
58          var xScale = d3.scaleLinear().domain([0, 2000]).range([padding, w - padding]);
59          var yScale = d3.scaleLinear().domain([40, 90]).range([h - padding, padding]);
60
61          // Update axis elements with the new scales
62          svg.select('.x-axis').call(d3.axisBottom(xScale).ticks(5));
63          svg.select('.y-axis').call(d3.axisLeft(yScale).ticks(5));
64
65          // Continue with plotting functions like line, circles, etc.
66          // Additional code would go here
67      }
68
69      // Load initial data and set up event listeners for UI elements like sliders and
    buttons
70      loadLifeData().then(() => {
71          updateChart(document.getElementById('yearSlider').value);
72      });
73
74      // Event listeners for buttons to load different datasets and update chart
75      document.getElementById('buttonCSV1').addEventListener('click', function () {
76          var csvPath = './data/cleanedData/gdpPerCapita_csv.csv';
77          setMaxVal(0); // Reset maximum value for scale
78          historicalData = {}; // Reset historical data
79          loadData(csvPath).then(() => {
80              updateChart(document.getElementById('yearSlider').value);
81          });
82      });
83
84      document.getElementById('buttonCSV2').addEventListener('click', function () {
85          var csvPath = './data/cleanedData/gdp_cleaned_csv.csv';
86          setMaxVal(0); // Reset maximum value for scale
87          historicalData = {}; // Reset historical data
88          loadData(csvPath).then(() => {
89              updateChart(document.getElementById('yearSlider').value);
90          });
91      });
92
93      // Event listener for the year slider to update the chart as the user changes the year
94      document.getElementById('yearSlider').addEventListener('input', function() {
95          updateChart(this.value);
96      });
97  }
98
99  window.onload = init;
100
```