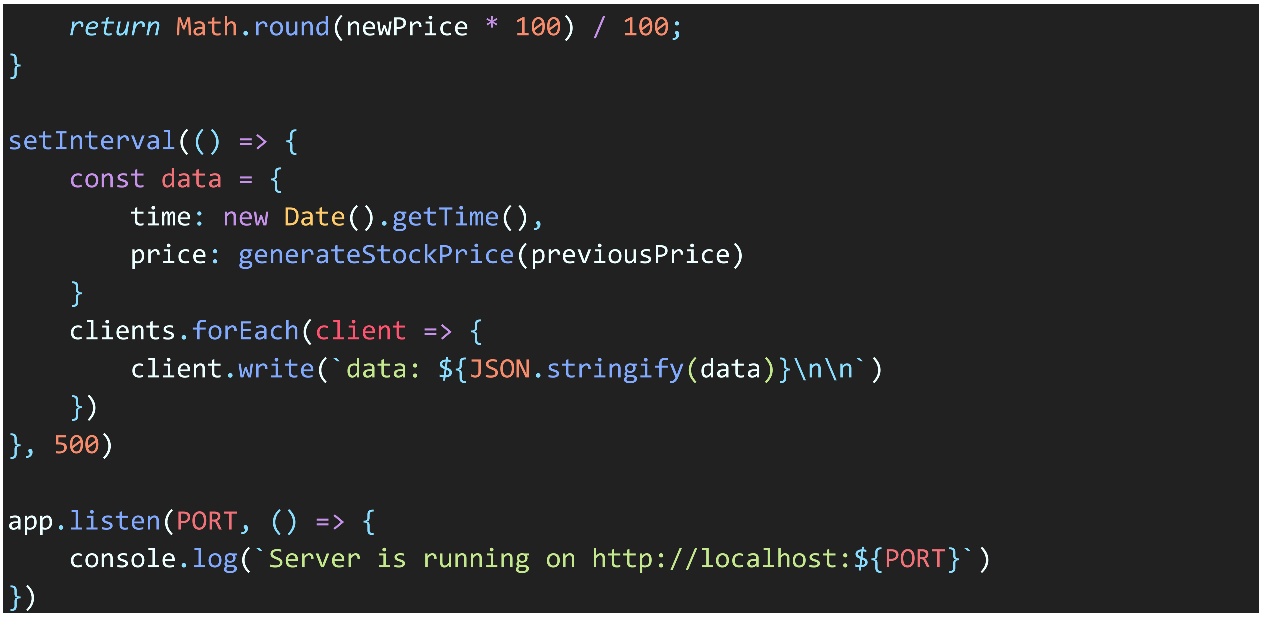
SSE

This project creates a real-time stock price chart using Server-Sent Events (SSE) with HTML, JavaScript, Express.js, and Chart.js. The HTML file sets up a canvas to display the live stock price chart. JavaScript utilizes Chart.js to render the chart and Event Source to receive updates from the server. Express.js handles the server-side logic, generating and broadcasting random stock price data to clients every 500 milliseconds. Clients receive updates via SSE, enabling real-time visualization of stock prices on the chart.

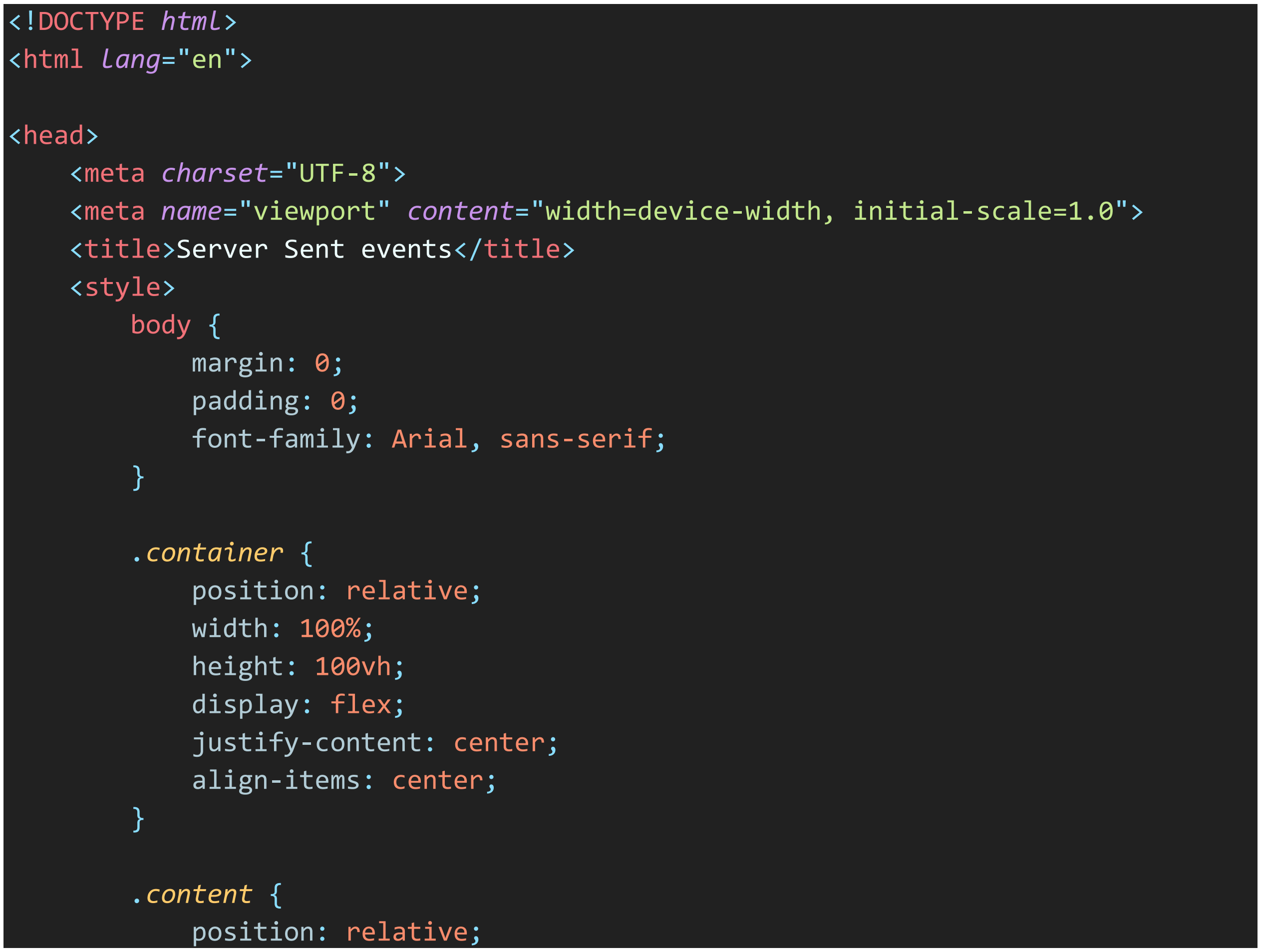
App.js

```
const express = require('express')
const cors = require('cors')

const PORT = process.env.PORT || 3000
const clients = []
const app = express()

app.use(cors())
app.use(express.json())

app.get('/', (req, res) => {
    res.send('Hello I am alive!')
})

app.get('/price', (req, res) => {
    res.set({
        "Content-Type": "text/event-stream"
    })
    clients.push(res)
    res.on('close', () => {
        clients.splice(clients.indexOf(res), 1)
    })
})

let previousPrice = 500
function generateStockPrice(previousPrice) {
    const changePercent = (Math.random() - 5) / 50;
    const newPrice = previousPrice * (1 + changePercent);
    previousPrice = newPrice;
```

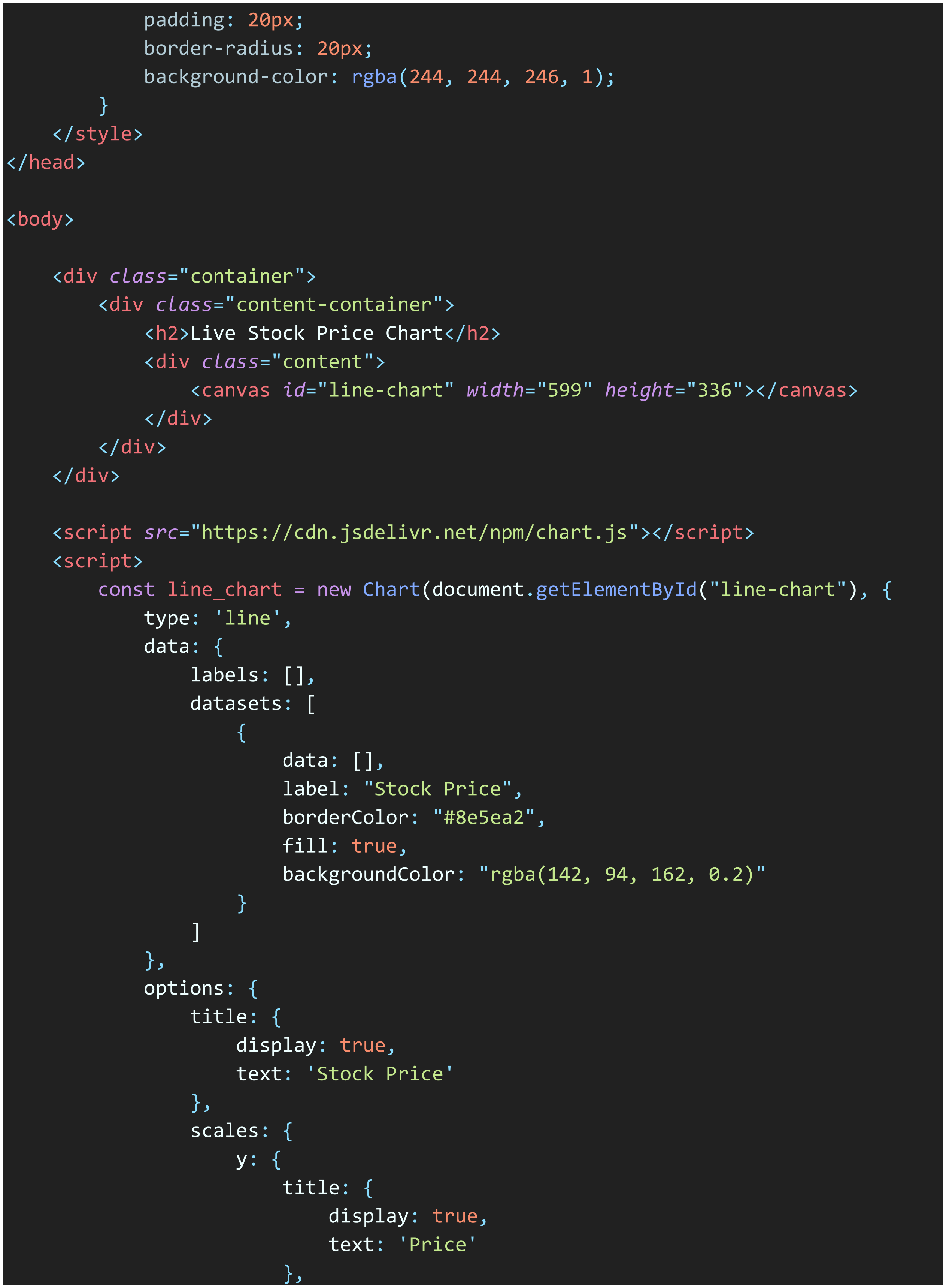


```
    return Math.round(newPrice * 100) / 100;
}

setInterval(() => {
    const data = {
        time: new Date().getTime(),
        price: generateStockPrice(previousPrice)
    }
    clients.forEach(client => {
        client.write(`data: ${JSON.stringify(data)}\n\n`)
    })
}, 500)

app.listen(PORT, () => {
    console.log(`Server is running on http://localhost:${PORT}`)
})
```

Index.js

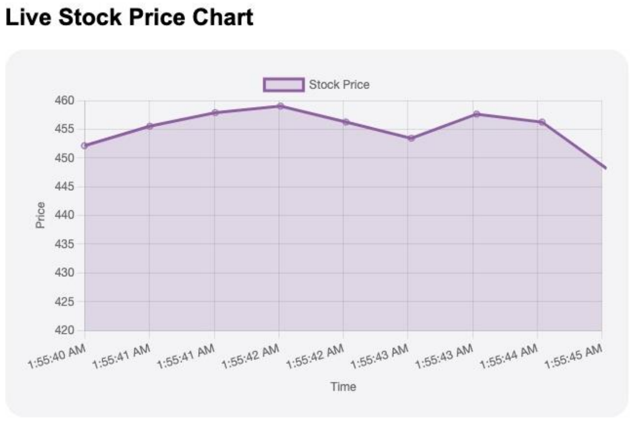


```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Server Sent events</title>
    <style>
        body {
            margin: 0;
            padding: 0;
            font-family: Arial, sans-serif;
        }

        .container {
            position: relative;
            width: 100%;
            height: 100vh;
            display: flex;
            justify-content: center;
            align-items: center;
        }

        .content {
            position: relative;
```

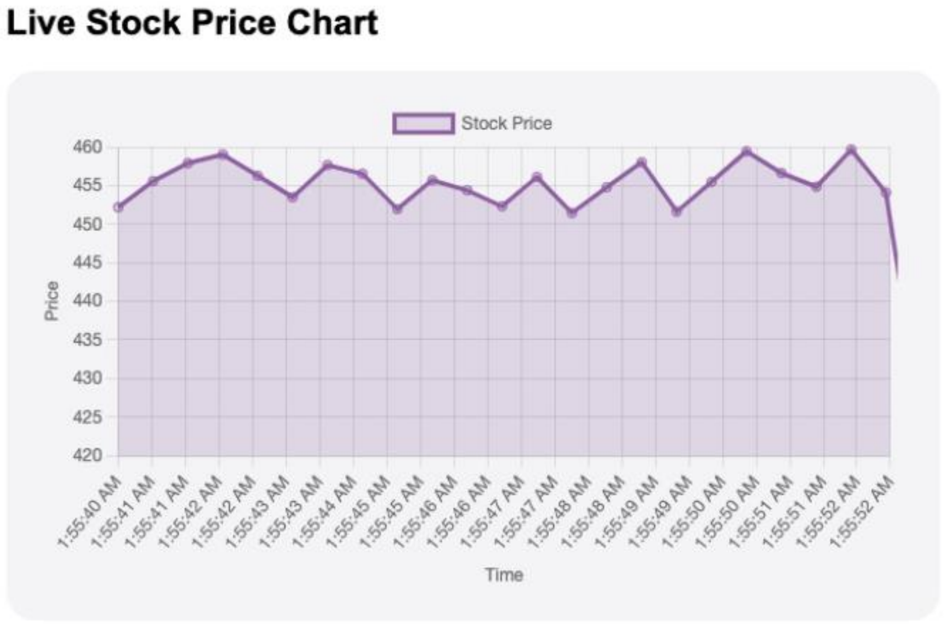


```
            padding: 20px;
            border-radius: 20px;
            background-color: rgba(244, 244, 246, 1);
        }
    </style>
</head>

<body>

    <div class="container">
        <div class="content-container">
            <h2>Live Stock Price Chart</h2>
            <div class="content">
                <canvas id="line-chart" width="599" height="336"></canvas>
            </div>
        </div>
    </div>

    <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
    <script>
        const line_chart = new Chart(document.getElementById("line-chart"), {
            type: 'line',
            data: {
                labels: [],
                datasets: [
                    {
                        data: [],
                        label: "Stock Price",
                        borderColor: "#8e5ea2",
                        fill: true,
                        backgroundColor: "rgba(142, 94, 162, 0.2)"
                    }
                ]
            },
            options: {
                title: {
                    display: true,
                    text: 'Stock Price'
                },
                scales: {
                    y: {
                        title: {
                            display: true,
                            text: 'Price'
                        },
                        suggestedMin: 420,
                    },
                    x: {
                        title: {
                            display: true,
                            text: 'Time'
                        }
                    }
                },
                hover: {
                    mode: 'nearest',
                    intersect: true
                },
                tooltips: {
                    mode: 'index',
                    intersect: false
                }
            }
        });

        const eventSource = new EventSource("http://localhost:3000/price");
        eventSource.onmessage = (event) => {
            const data = JSON.parse(event.data);
            const time = new Date(data.time).toLocaleTimeString();
            const price = data.price;
            line_chart.data.labels.push(time);
            line_chart.data.datasets[0].data.push(price);
            line_chart.update();
        };
    </script>
</body>

</html>
```

```
{
  "dependencies": {
    "cors": "^2.8.5",
    "express": "^4.18.3"
  }
}
```



Live Stock Price Chart



Live Stock Price Chart