

МГТУ им. Н. Э. Баумана, кафедра ИУ5  
курс “Разработка интернет-приложений”

## Лабораторная работа №7

### Работа с DOM с использованием JavaScript

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ПРОВЕРИЛ:

Гапанюк Ю.Е.

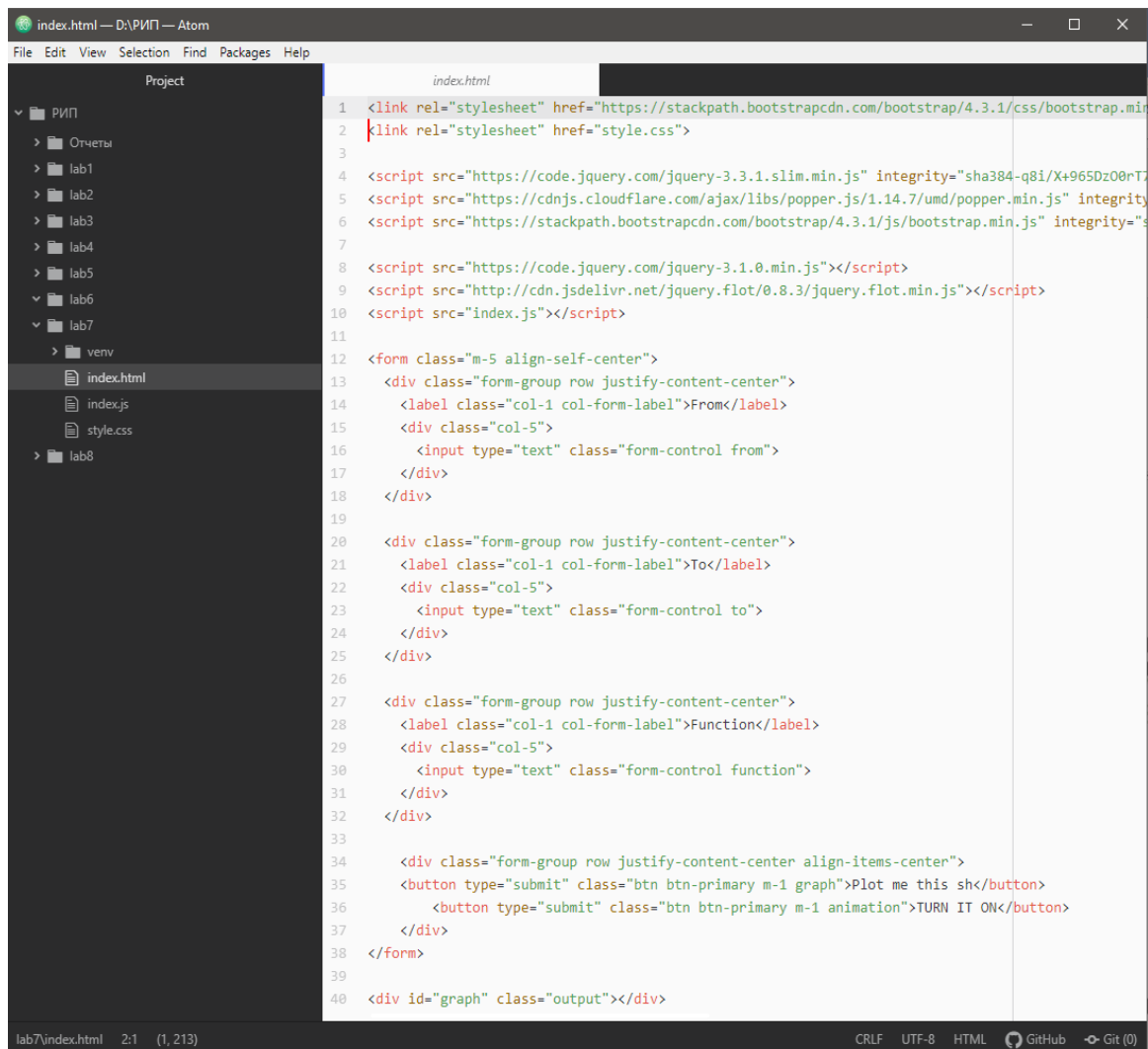
Москва 2019

## Задание и порядок выполнения

Разработать приложение для построения графиков тригонометрических функций на языке Javascript с HTML интерфейсом.

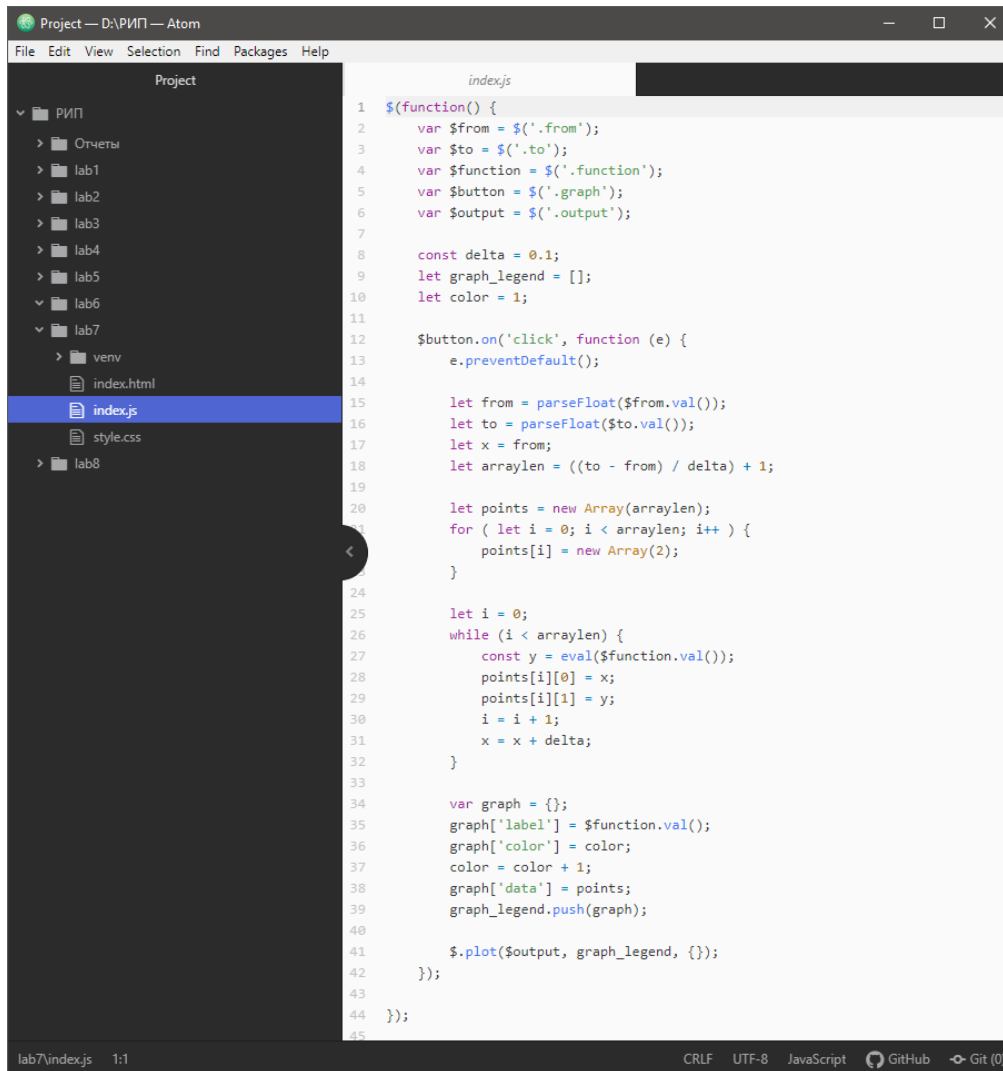
## Выполненная работа

### index.html



```
1 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css" integrity="sha384-g8i/X+965Dz00rT7j7YF4p2fP8jH4tYsVeb1XQYP0r77X7p0dWvqBBaUwv" crossorigin="anonymous">
2 <link rel="stylesheet" href="style.css">
3
4 <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-q8i/X+965Dz00rT7j7YF4p2fP8jH4tYsVeb1XQYP0r77X7p0dWvqBBaUwv" crossorigin="anonymous"></script>
5 <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js" integrity="sha384-Uh2YfwelIh1P+M0W3BCbzdS7JxmqrNBh8/EKtrhP7NmOMvcW3qN3Uj2Qm8tB0E" crossorigin="anonymous"></script>
6 <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js" integrity="sha384-g8i/X+965Dz00rT7j7YF4p2fP8jH4tYsVeb1XQYP0r77X7p0dWvqBBaUwv" crossorigin="anonymous"></script>
7
8 <script src="https://code.jquery.com/jquery-3.1.0.min.js"></script>
9 <script src="http://cdn.jsdelivr.net/jquery.flot/0.8.3/jquery.flot.min.js"></script>
10 <script src="index.js"></script>
11
12 <form class="m-5 align-self-center">
13   <div class="form-group row justify-content-center">
14     <label class="col-1 col-form-label">From</label>
15     <div class="col-5">
16       <input type="text" class="form-control from">
17     </div>
18   </div>
19
20   <div class="form-group row justify-content-center">
21     <label class="col-1 col-form-label">To</label>
22     <div class="col-5">
23       <input type="text" class="form-control to">
24     </div>
25   </div>
26
27   <div class="form-group row justify-content-center">
28     <label class="col-1 col-form-label">Function</label>
29     <div class="col-5">
30       <input type="text" class="form-control function">
31     </div>
32   </div>
33
34   <div class="form-group row justify-content-center align-items-center">
35     <button type="submit" class="btn btn-primary m-1 graph">Plot me this sh</button>
36     <button type="submit" class="btn btn-primary m-1 animation">TURN IT ON</button>
37   </div>
38 </form>
39
40 <div id="graph" class="output"></div>
```

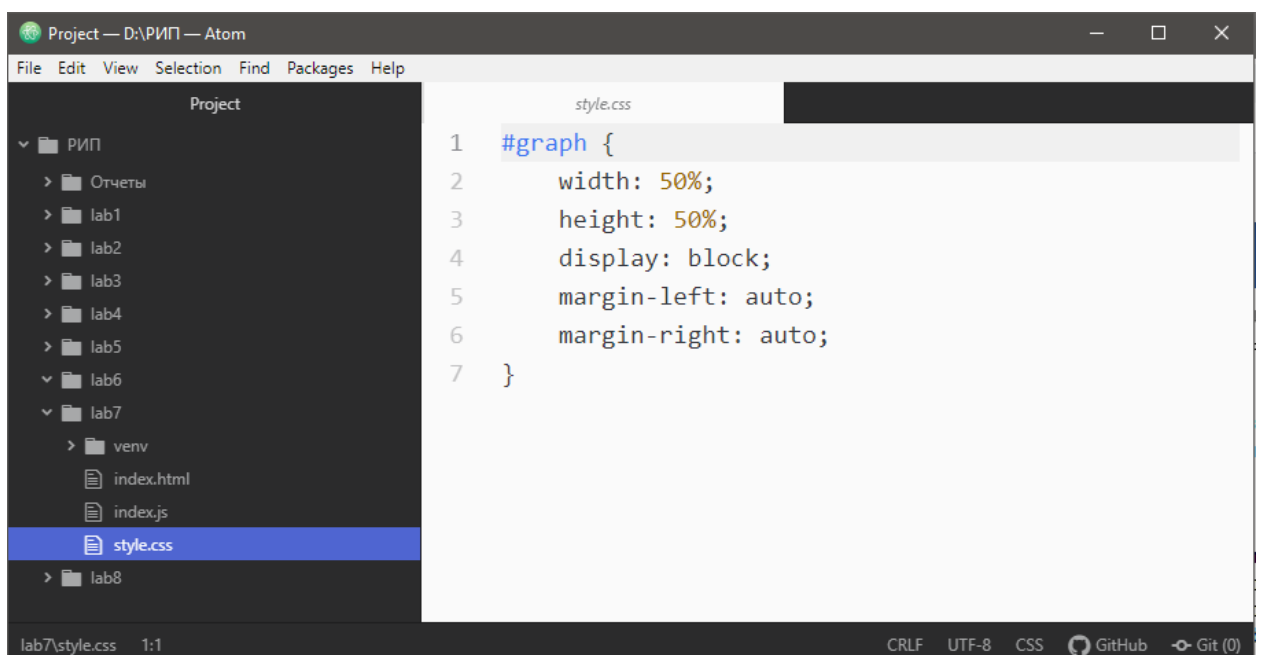
## index.js



The screenshot shows the Atom editor interface with a project named 'Project - D:\РИП - Atom'. The left sidebar displays a file tree with folders 'РИП', 'Отчеты', 'lab1', 'lab2', 'lab3', 'lab4', 'lab5', 'lab6', 'lab7', and 'lab8'. Under 'lab7', there are files 'index.html', 'index.js', and 'style.css'. The 'index.js' file is selected and its content is displayed in the main editor area. The code is a jQuery plugin for plotting a graph. It defines variables for from, to, function, button, and output. It sets a delta of 0.1 and initializes an array for points. It then uses a while loop to calculate points and push them to a graph object. Finally, it calls \$.plot to render the graph.

```
1 $(function() {  
2     var $from = $('from');  
3     var $to = $('to');  
4     var $function = $('function');  
5     var $button = $('graph');  
6     var $output = $('output');  
7  
8     const delta = 0.1;  
9     let graph_legend = [];  
10    let color = 1;  
11  
12    $button.on('click', function (e) {  
13        e.preventDefault();  
14  
15        let from = parseFloat($from.val());  
16        let to = parseFloat($to.val());  
17        let x = from;  
18        let arraylen = ((to - from) / delta) + 1;  
19  
20        let points = new Array(arraylen);  
21        for ( let i = 0; i < arraylen; i++ ) {  
22            points[i] = new Array(2);  
23        }  
24  
25        let i = 0;  
26        while (i < arraylen) {  
27            const y = eval($function.val());  
28            points[i][0] = x;  
29            points[i][1] = y;  
30            i = i + 1;  
31            x = x + delta;  
32        }  
33  
34        var graph = {};  
35        graph['label'] = $function.val();  
36        graph['color'] = color;  
37        color = color + 1;  
38        graph['data'] = points;  
39        graph_legend.push(graph);  
40  
41        $.plot($output, graph_legend, {});  
42    });  
43  
44 });  
45
```

**В css указаны размеры блока графика, отличные от нуля:**



The screenshot shows the Atom editor interface with the same project. The left sidebar is the same, but now the 'style.css' file is selected. The main editor area displays the CSS code for the graph block. It sets the width to 50%, height to 50%, display to block, and margin-left and margin-right to auto.

```
1 #graph {  
2     width: 50%;  
3     height: 50%;  
4     display: block;  
5     margin-left: auto;  
6     margin-right: auto;  
7 }
```

# Результаты



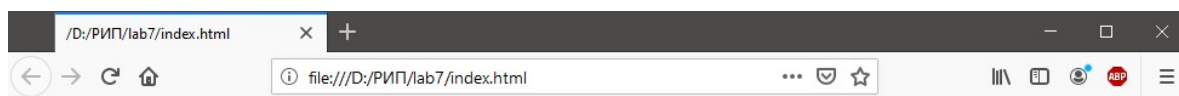
От

До

Функция

Показать

Очистить



От

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До

11

Функция

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Показать

Очистить

