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Laboratory reports №1-5

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# Laboratory work №1 – Layout of a web page using HTML language

## Task and goal

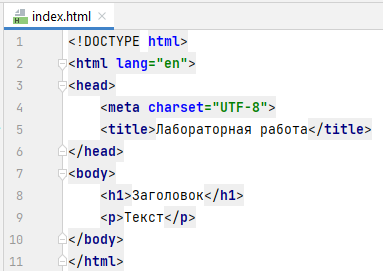
The goal of the work is to gain practical skills in creating and formatting web pages using markup tools.

The task is to make a layout of the page according to the option 8.

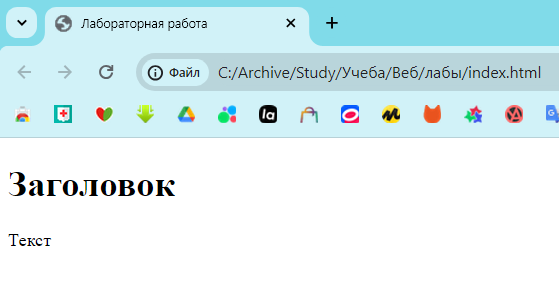


## Progress of the work

1. We created the file “index.html”. This is the basic structure of the page:



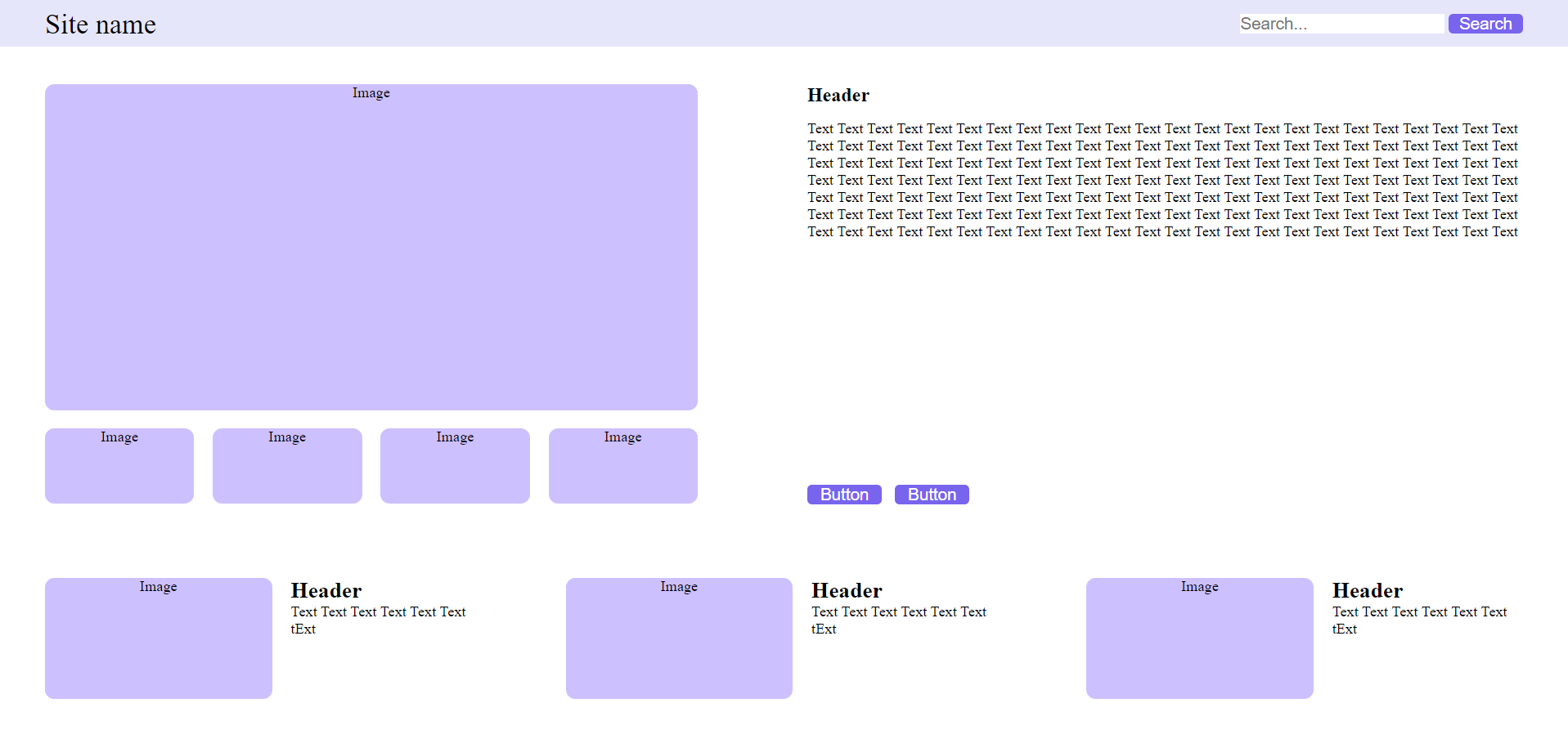
The opened page:



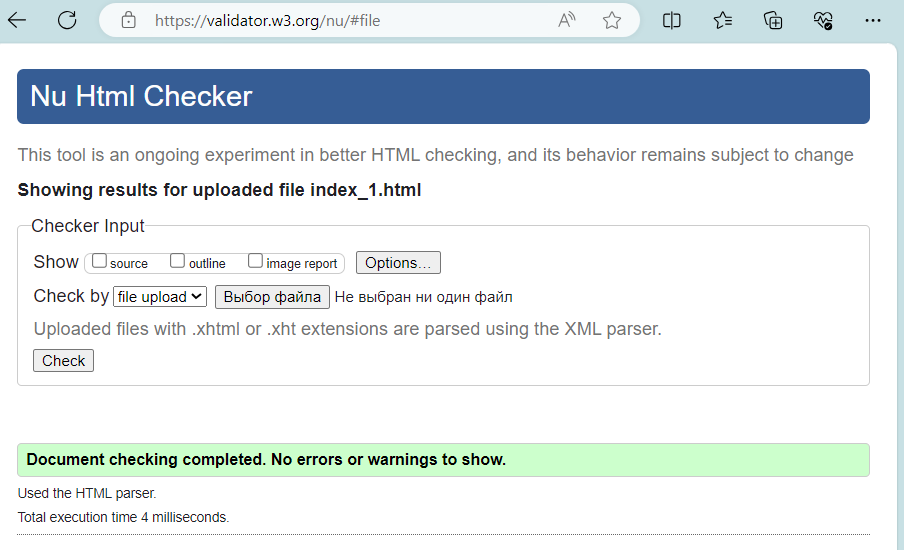
1. Let’s make a layout.

|  |  |  |  |
| --- | --- | --- | --- |
| № | Type of a block | Block ID | HTML-code |
| 1 | Navigation bar | navbar | <nav class=”navbar”>…</nav> |
| 2 | Content | content-container | <div class="content-container">…</div> |
| 3 | Footer | footer | <div class="footer">…</div> |

The final view of the layout:



1. Let’s check the code using <http://validator.w3.org/>:



# Laboratory work №2 – Styling a web page layout using CSS

## The goal and the task

The goal of the work is to gain practical skills in formatting web pages using CSS style sheets.

The task is to prepare CSS style sheets for the web page.

## Progress of the work

1. Create a file "styles.css" and connect the style sheet to the existing HTML page using <link rel="stylesheet" href="styles.css"/>.
2. In the HTML template in the page header markup code, the menu consists of a search bar and a "Search" button.



1. In the style sheet “style.css” let’s add a description of the button hover style.

.**navbar form button** {  
 **width**: 80**px**;  
 **background-color**: **#6b55f1**;  
 **color**: **white**;  
 **font-size**: 18**px**;  
 **border-radius**: 5**px**;  
 **opacity**: 0.6;  
 **transition**: 0.3**s**;  
}  
.**navbar form button**:**hover** { **opacity**: 1 }

Result:

Let’s similarly make the other two buttons on the page:



1. Let’s make the hover style for the name of the site. The code:

.**navbar a** {  
 **font-size**: 30**px**;  
 **padding**: 10**px** 50**px**;  
 **transition**: 0.3**s**;  
 **cursor**: **pointer**;  
}  
.**navbar a**:**hover** {  
 **text-shadow**: 1**px** 1**px** 1**px black**;  
}

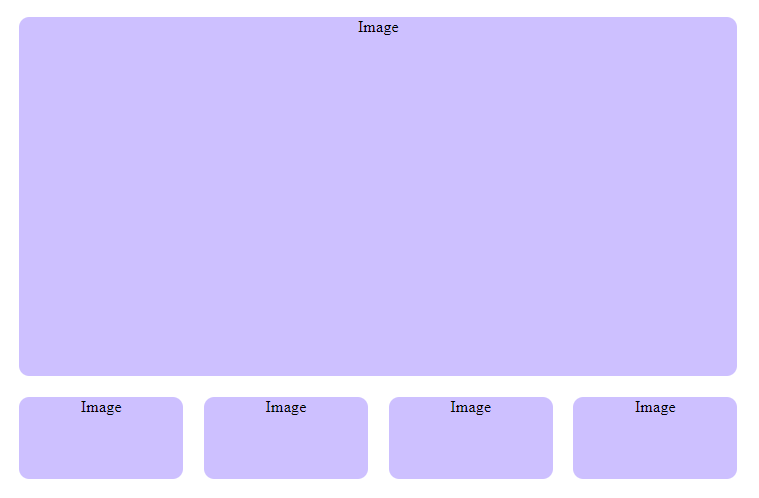
The result:

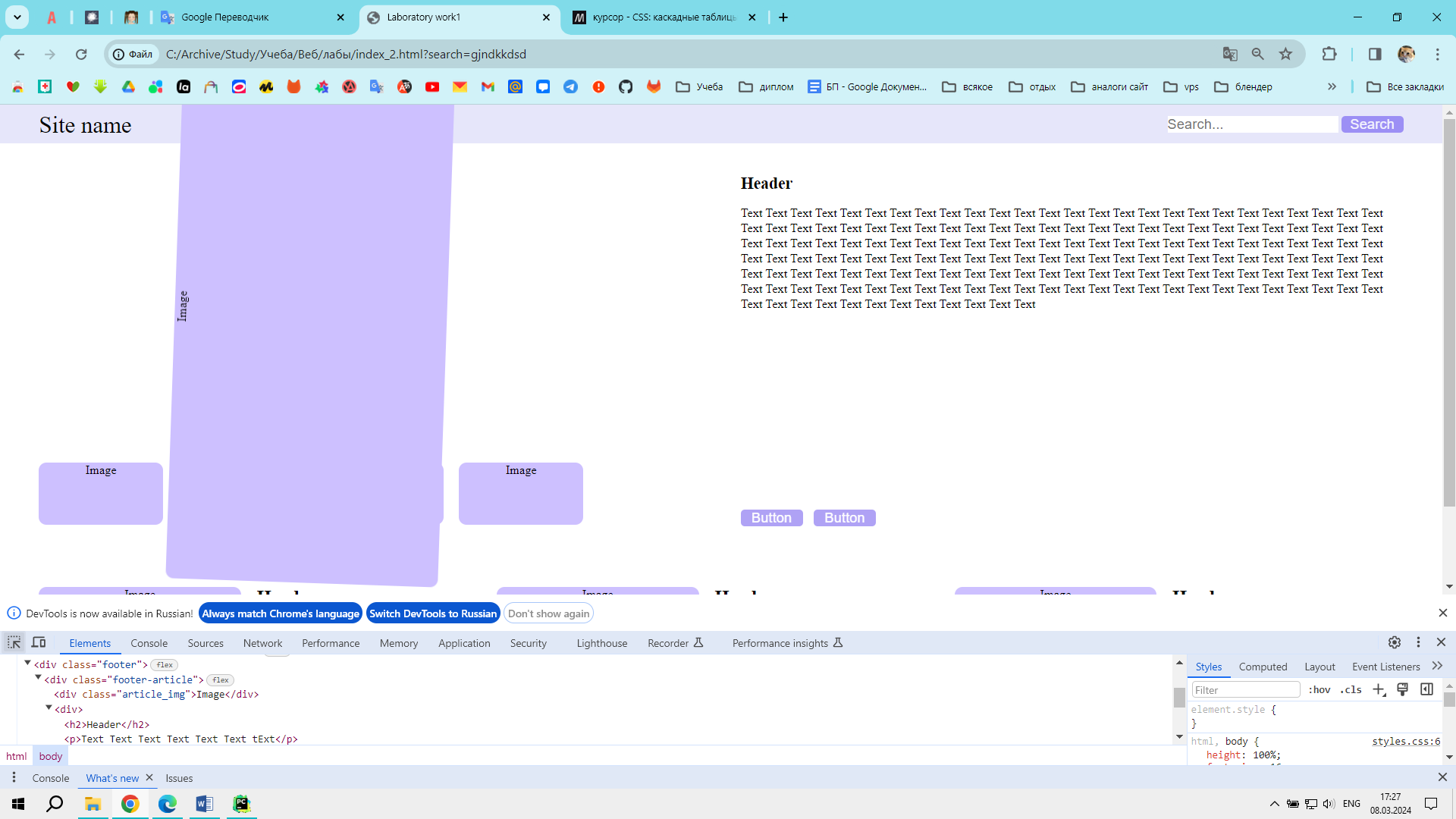
 

1. Let’s add a 360° rotation effect when hovering over it for .content\_b\_img.

.**content\_b\_img** {  
 **background-color**: **#cdc0ff**;  
 **width**: 700**px**;  
 **height**: 350**px**;  
 **text-align**: **center**;  
 **border-radius**: 10**px**;  
  
 **transition**: 0.70**s**;  
 **-webkit-transition**: 0.70**s**;  
 **-moz-transition**: 0.70**s**;  
 **-ms-transition**: 0.70**s**;  
 **-o-transition**: 0.70**s**;  
}  
.**content\_b\_img**:**hover** {  
 **transition**: 0.70**s**;  
 **-webkit-transition**: 0.70**s**;  
 **-moz-transition**: 0.70**s**;  
 **-ms-transition**: 0.70**s**;  
 **-o-transition**: 0.70**s**;  
 **-webkit-transform**: **rotate**(360**deg**);  
 **-moz-transform**: **rotate**(360**deg**);  
 **-o-transform**: **rotate**(360**deg**);  
 **-ms-transform**: **rotate**(360**deg**);  
 **transform**: **rotate**(360**deg**);  
}

The result:





1. Let’s add a stylized search line. Let's include the style sheet for Font Awesome in the HTML file via CDN:

<**link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.5.0/css/font-awesome.min.css"**/>

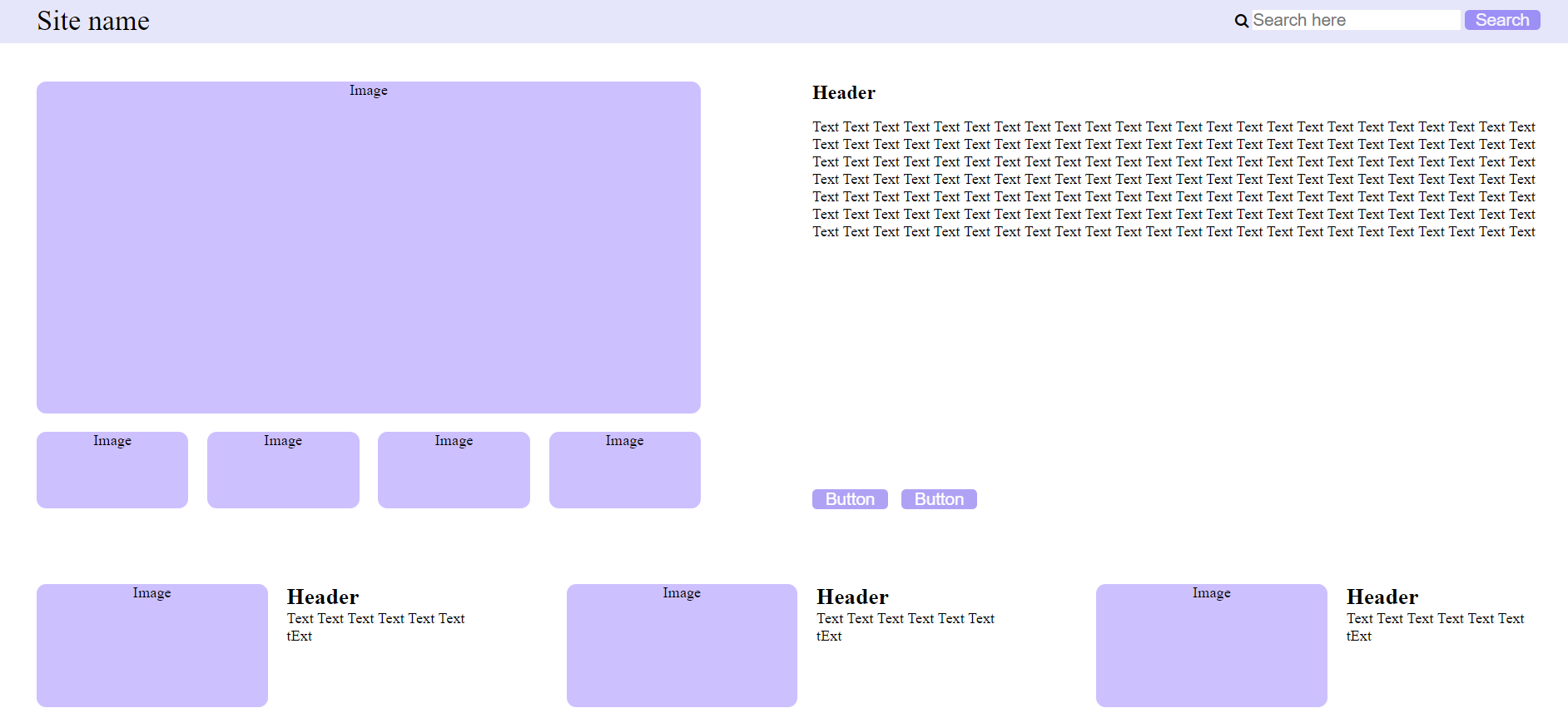
And the code of the search input:

<**form method="get"**>  
 <**i class="fa fa-search left-icon"**></**i**>  
 <**input placeholder="Search here"** /><**button type="submit"**>Search</**button**>  
 </**form**>

The result:



1. The final page:



# Laboratory work №3 – Web page interactivity using JQuery UI library

## The goal and the task

The goal of the work is to gain practical skills in ensuring the interactivity of web pages using the JQuery library.

## Progress of the work

1. Let's connect JQuery libraries and plugins to the existing HTML page. To do this, between the opening and closing tags of the “head” element, enter the following lines:

<**script src="https://code.jquery.com/jquery-1.12.4.js"**></**script**>  
<**script src="https://code.jquery.com/ui/1.12.1/jquery-ui.js"**></**script**>

Here also let’s add a link to the styles used:

**<link rel="stylesheet"**

**href="https://code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css"**/>

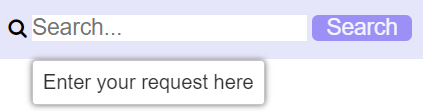
1. In the HTML template, let’s add a tooltip using the title attribute to the search input field markup code from the previous work:

<**input class="tooltip" title="Enter your request here" placeholder="Search..."** />

And between the opening and closing tags of the “head” element, enter the following lines:

<**script**>  
 **$**( **function**() {  
 **$**( ***document*** ).**tooltip**();  
 } );  
</**script**>

The result:



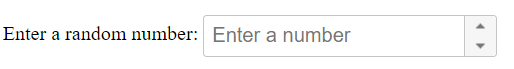
1. Let's add a numeric input field to the page with the ability to increment/decrement the value both in the element itself on the form and from the keyboard. To do this, add the input field markup with the identifier “spin” to the HTML template in the markup code of input block:

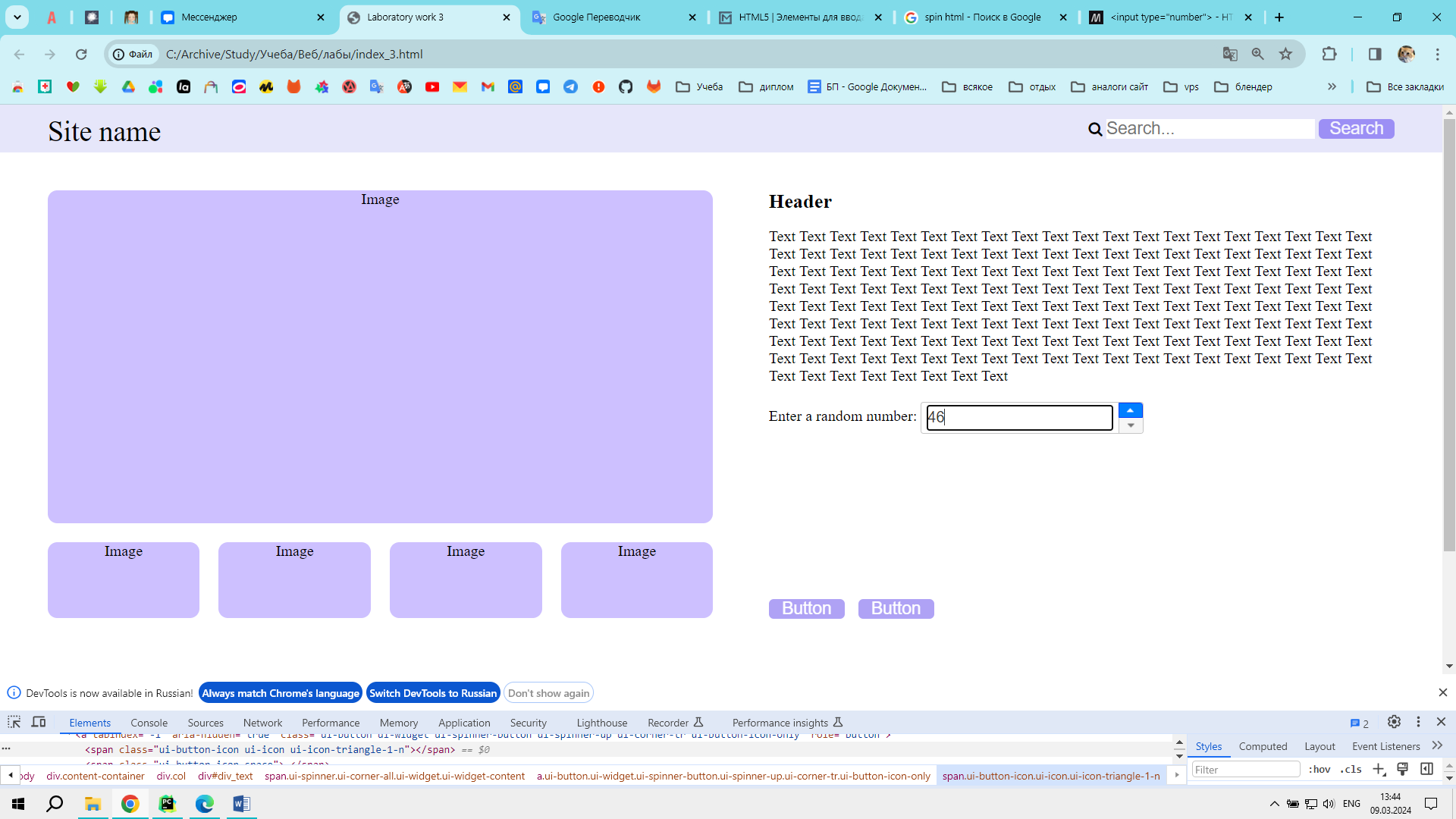
<**label**>Enter a random number:</**label**>  
<**input id="spin" placeholder="Enter a number"**/>

And add

**var** spinner = **$**( **"#spin"** ).spinner();

The result:





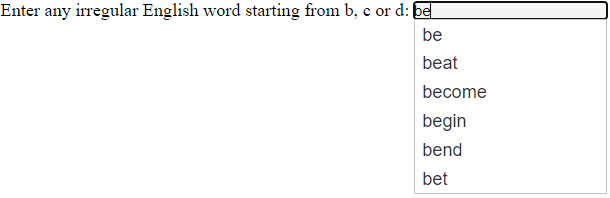
1. Let's add a text input field (identifier “tags”) with autocomplete to the page:

<**label**>Enter any irregular English word starting from b, c or d:</**label**>  
<**input id="tags" type="text"** />

To do this, after the line var spinner = $("#spin").spinner();" add the code:

**var** availableTags = [  
 **"be"**, **"beat"**, **"become"**, **"begin"**, **"bend"**, **"bet"**, **"bite"**, **"blow"**, **"break"**, **"bring"**,  
 **"build"**, **"buy"**, **"catch"**, **"choose"**, **"come"**, **"cost"**, **"cut"**, **"deal"**, **"dig"**, **"do"**,  
 **"draw"**, **"drink"**, **"drive"**];  
**$**( **"#tags"** ).**autocomplete**({ source: availableTags });

The result:



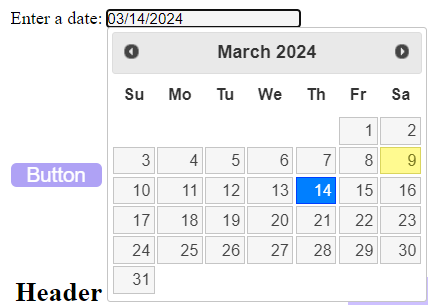
1. Add a date picker text field to the page:

<**label**>Enter a date:</**label**>  
<**input id="datepicker"** />

Further after the line “$( document ).tooltip();” add code:

$( "#datepicker" ).datepicker();

The result:



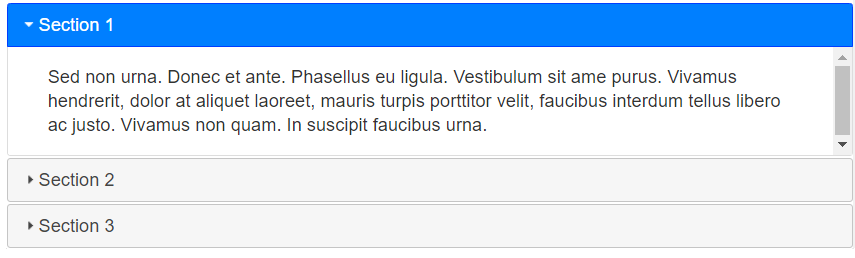
1. Let's add an accordion control to the page.

<**div id="accordion"**>  
 <**h3**>Section 1</**h3**>  
 <**div**>  
 <**p**>Sed non urna. Donec et ante. Phasellus eu ligula. Vestibulum sit ame  
 purus. Vivamus hendrerit, dolor at aliquet laoreet, mauris turpis porttitor  
 velit, faucibus interdum tellus libero ac justo. Vivamus non quam. In suscipit  
 faucibus urna. </**p**>  
 </**div**>  
 <**h3**>Section 2</**h3**>  
 <**div**>  
 <**p**>Sed non urna. Donec et ante. Phasellus eu ligula. Vestibulum sit ame  
 purus. Vivamus hendrerit, dolor at aliquet laoreet, mauris turpis porttitor  
 velit, faucibus interdum tellus libero ac justo. Vivamus non quam. In suscipit  
 faucibus urna. </**p**>  
 </**div**>  
 <**h3**>Section 3</**h3**>  
 <**div**>  
 <**p**>Sed non urna. Donec et ante. Phasellus eu ligula. Vestibulum sit ame  
 purus. Vivamus hendrerit, dolor at aliquet laoreet, mauris turpis porttitor  
 velit, faucibus interdum tellus libero ac justo. Vivamus non quam. In suscipit  
 faucibus urna. </**p**>  
 </**div**>  
</**div**>

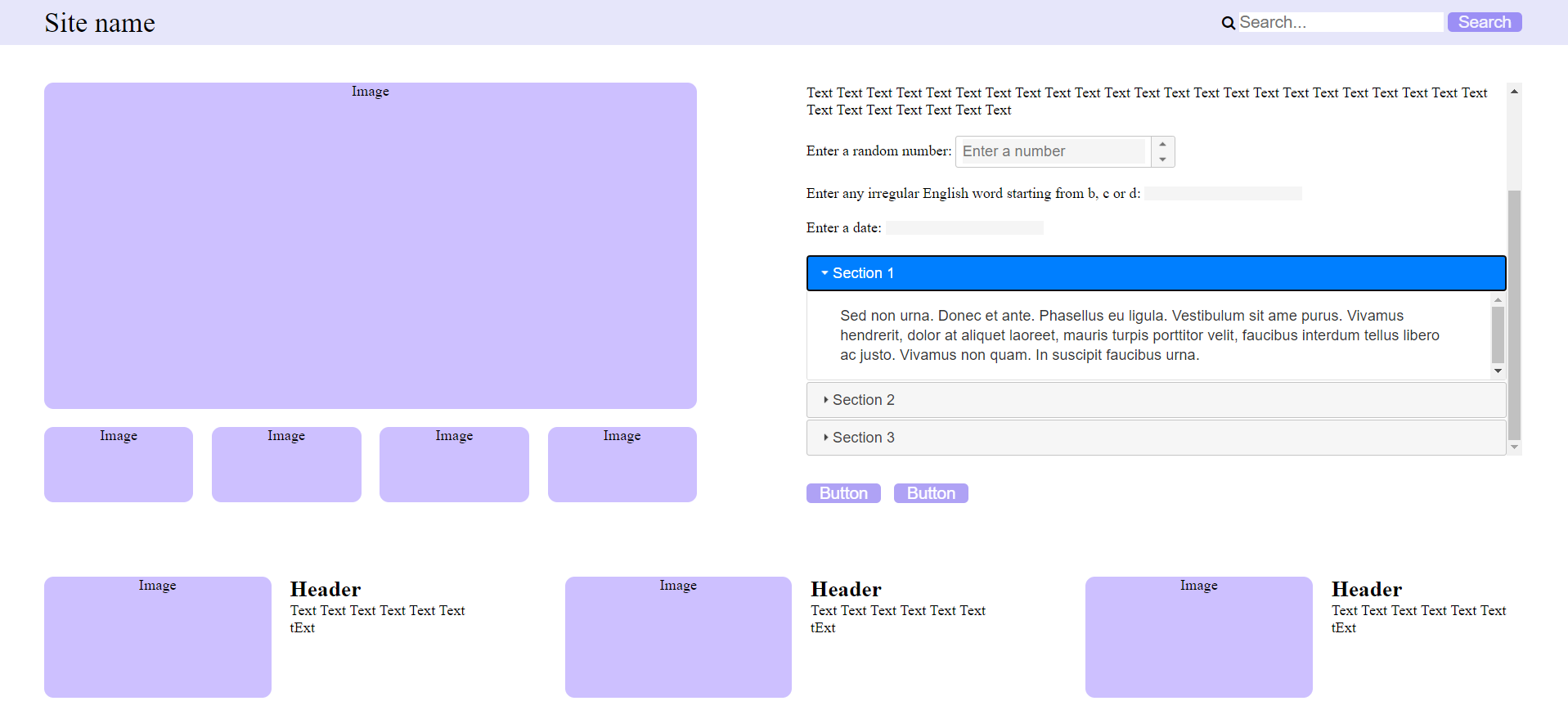
Further after the line “$( document ).tooltip();” add code:

$( "#accordion" ).accordion();

The result:



The final page:



# Laboratory work №4 – Using map service APIs when developing web applications

## The goal and the task

The goal of the work is to gain practical skills in using map data in web applications using API tools.

## Progress of the work

1. Let's connect ArcGIS API for JavaScript styles and scripts to the existing HTML page. To do this, between the opening and closing tags of the “head” element, enter the following lines:

<**link rel="stylesheet" href="https://js.arcgis.com/4.9/esri/css/main.css"**/>

<**script src="https://js.arcgis.com/4.9/"**></**script**>

1. Create new divs:

<**div class="container-map"**>  
 <**div id="map"**>  
  
 </**div**>  
</**div**>

1. Let's load modules from the API for creating a map and its visualization in two-dimensional format and create an instance of the Map class.

<**script**>  
 require([**"esri/Map"**, **"esri/views/MapView"**], **function**(Map, MapView) {   
 **var** map = **new** Map({ **basemap**: **"streets"** });  
 });  
</**script**>

# Application

## Laboratory work 1

<!DOCTYPE **html**>  
<**html lang="en"**>  
<**head**>  
 <**meta charset="UTF-8"**>  
 <**title**>Laboratory work1</**title**>  
 <**style**>  
 **\*** {  
 **margin**:0;  
 **padding**:0;  
 **border**: 0;  
 }  
 **html**, **body** {  
 **height**: 100%;  
 **font-size**: 16**px**;  
 **box-sizing**: **border-box**;  
 }  
  
 .**navbar** {  
 **background-color**: **lavender**;  
 **max-height**: 50**px**;  
 **display**: **flex**;  
 }  
 .**navbar a** {  
 **font-size**: 30**px**;  
 **padding**: 10**px** 50**px**;  
 }  
 .**navbar form** {  
 **margin-left**: **auto**;  
 **padding**: 15**px** 50**px**;  
 }  
 .**navbar form input** {  
 **font-size**: 18**px**;  
 }  
 .**navbar form button** {  
 **width**: 80**px**;  
 **background-color**: **#7964ee**;  
 **color**: **white**;  
 **font-size**: 18**px**;  
 **border-radius**: 5**px**;  
 }  
  
 .**content-container** {  
 **margin**: 40**px** 50**px**;  
 **height**: 450**px**;  
 **display**: **flex**;  
 }  
 .**content-container \***:**last-child** {  
 **padding**: 0;  
 }  
  
 .**col** {  
 **width**: 50%;  
 **padding-right**: 50**px**;  
 **display**: **flex**;  
 **flex-direction**: **column**;  
 **height**: 100%;  
 }  
  
 .**content\_b\_img** {  
 **background-color**: **#cdc0ff**;  
 **width**: 700**px**;  
 **height**: 350**px**;  
 **text-align**: **center**;  
 **border-radius**: 10**px**;  
 }  
  
 .**row** {  
 **margin**: 20**px** 0 0 0;  
 **display**: **flex**;  
 }  
 .**row \***:**last-child** {  
 **margin**:0;  
 }  
 .**content\_s\_img** {  
 **background-color**: **#cdc0ff**;  
 **width**: 160**px**;  
 **height**: 80**px**;  
 **text-align**: **center**;  
 **margin-right**: 20**px**;  
 **border-radius**: 10**px**;  
 }  
  
 .**col div h1** {  
 **font-size**: 21**px**;  
 **margin-bottom**: 15**px**;  
 }  
 .**col div** {  
 **flex**: 1 0 **auto**;  
 **overflow**: **auto**;  
 }  
 .**content-col-buttons** {  
 **margin-top**: 15**px**;  
 **flex**: 0 0 **auto**;  
 **height**: 20**px**;  
 }  
 .**content-col-buttons \***:**last-child** {  
 **margin**:0;  
 }  
 .**content-col-buttons button** {  
 **margin-right**: 10**px**;  
 **width**: 80**px**;  
 **background-color**: **#7964ee**;  
 **color**: **white**;  
 **font-size**: 18**px**;  
 **border-radius**: 5**px**;  
 }  
  
 .**footer** {  
 **margin**: 80**px** 50**px**;  
 **display**: **flex**;  
 }  
 .**footer \***:**last-child** {  
 **margin**:0;  
 }  
 .**footer-article** {  
 **margin-right**: 90**px**;  
 **display**: **flex**;  
 }  
 .**article\_img** {  
 **width**: 260**px**;  
 **height**: 130**px**;  
 **background-color**: **#cdc0ff**;  
 **border-radius**: 10**px**;  
 **text-align**: **center**;  
 **margin-right**: 20**px**;  
 }  
  
 </**style**>  
</**head**>  
<**body**>  
 <**nav class="navbar"**>  
 <**a**>Site name</**a**>  
 <**form method="get"**>  
 <**input name="search" placeholder="Search..." type="search"**>  
 <**button type="submit"**>Search</**button**>  
 </**form**>  
 </**nav**>  
  
 <**div class="content-container"**>  
 <**div class="col"**>  
 <**div class="content\_b\_img"**>  
 Image  
 </**div**>  
  
 <**div class="row"**>  
 <**div**>  
 <**div class="content\_s\_img"**>Image</**div**>  
 </**div**>  
 <**div**>  
 <**div class="content\_s\_img"**>Image</**div**>  
 </**div**>  
 <**div**>  
 <**div class="content\_s\_img"**>Image</**div**>  
 </**div**>  
 <**div**>  
 <**div class="content\_s\_img"**>Image</**div**>  
 </**div**>  
 </**div**>  
 </**div**>  
  
 <**div class="col"**>  
 <**div**>  
 <**h1**>Header</**h1**>  
 <**p**>Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text  
 Text Text Text Text Text Text Text Text Text Text Text Text </**p**>  
 </**div**>  
 <**div class="content-col-buttons"**>  
 <**button**>Button</**button**>  
 <**button**>Button</**button**>  
 </**div**>  
 </**div**>  
 </**div**>  
  
 <**div class="footer"**>  
 <**div class="footer-article"**>  
 <**div class="article\_img"**>Image</**div**>  
 <**div**>  
 <**h2**>Header</**h2**>  
 <**p**>Text Text Text Text Text Text tExt</**p**>  
 </**div**>  
 </**div**>  
 <**div class="footer-article"**>  
 <**div class="article\_img"**>Image</**div**>  
 <**div**>  
 <**h2**>Header</**h2**>  
 <**p**>Text Text Text Text Text Text tExt</**p**>  
 </**div**>  
 </**div**>  
 <**div class="footer-article"**>  
 <**div class="article\_img"**>Image</**div**>  
 <**div**>  
 <**h2**>Header</**h2**>  
 <**p**>Text Text Text Text Text Text tExt</**p**>  
 </**div**>  
 </**div**>  
 </**div**>  
  
</**body**>  
</**html**>

## Laboratory work 2