



ФАКУЛТЕТ ЗА ЕЛЕКТРОТЕХНИКА И ИНФОРМАЦИСКИ ТЕХНОЛОГИИ

ОСНОВИ НА WEB ПРОГРАМИРАЊЕ

- CSS3 -

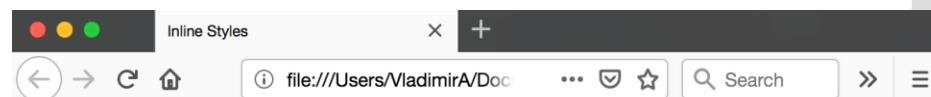
Основни поими за CSS3

- **Cascading Style Sheets 3 (CSS3)** е W3C технологија која овозможува специфицирање на **презентацијата** на елементите на веб страна (на пр. фонтови, големини, растојанија, бои, позиции итн.) посебно од структурата и содржината на документот (на пр. наслови на секции, текст, линкови итн.)
- Раздвојувањето на структурата од презентацијата го олеснува одржувањето и менувањето на веб страни особено на големи веб сайтови
- Style sheet = контрола на презентацијата на веб сайт
- Валидатор на CSS3 код: jigsaw.w3.org/css-validator/
- Три начини на декларација на стил на документ:
 - Внатре во самиот HTML5 (**inline**)
 - Во вгнездени документи за стил (**embedded style sheets**)
 - Во посебни CSS документи (**separate CSS files**)

Inline styles (1/2)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.1: inline.html -->
4 <!-- Using inline styles -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Inline Styles</title>
9   </head>
10  <body>
11    <p>This text does not have any style applied to it.</p>
12
13    <!-- The style attribute allows you to declare -->
14    <!-- inline styles. Separate multiple -->
15    <!-- style properties with a semicolon. -->
16    <p style = "font-size: 20pt;">This text has the
17      <em>font-size</em> style applied to it, making it 20pt.
18    </p>
19
20    <p style = "font-size: 20pt; color: deepskyblue;">
21      This text has the <em>font-size</em> and
22      <em>color</em> styles applied to it, making it
23      20pt and deep sky blue.</p>
24
25  </body>
</html>
```

- **Inline styles** имаат највисок приоритет во споредба со другите техники
- Декларираат формат на индивидуален елемент користејќи го HTML5 атрибутот **style**
- Секоја CSS карактеристика ја следи знак : и потоа вредност
- Ако се декларираат повеќе CSS карактеристики тогаш се раздвојуваат со ;



This text does not have any style applied to it.

This text has the *font-size* style applied to it, making it 20pt.

This text has the *font-size* and *color* styles applied to it, making it 20pt and deep sky blue.

Inline styles (2/2)

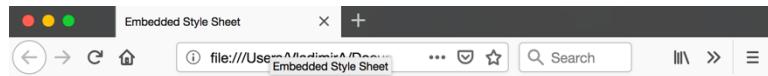
Color name	Value	Color name	Value
aqua	#00FFFF	navy	#000080
black	#000000	olive	#808000
blue	#0000FF	purple	#800080
fuchsia	#FF00FF	red	#FF0000
gray	#808080	silver	#C0C0C0
green	#008000	teal	#008080
lime	#00FF00	yellow	#FFFF00
maroon	#800000	white	#FFFFFF

Embedded style sheets (1/2)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.3: embedded.html -->
4 <!-- Embedded style sheet. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Embedded Style Sheet</title>
9
10    <!-- this begins the style sheet section -->
11    <style type = "text/css">
12      em      { font-weight: bold;
13                  color: black; }
14      h1      { font-family: tahoma, helvetica, sans-serif; }
15      p       { font-size: 12pt;
16                  font-family: arial, sans-serif; }
17      .special { color: purple; }
18    </style>
19  </head>
20  <body>
21    <!-- this attribute applies the .special style class -->
22    <h1 class = "special">Deitel & Associates, Inc.</h1>
23
24    <p>Deitel & Associates, Inc. is an authoring and
25      corporate training organization specializing in
26      programming languages, Internet and web technology,
27      iPhone and Android app development, and object
28      technology education.</p>
29
30    <h2>Clients</h2>
31    <p class = "special"> The company's clients include many
32      <em>Fortune 1000 companies</em>, government agencies,
33      branches of the military and business organizations.</p>
34
35 </body>
</html>
```

- Вгнездување на CSS3 документ во `<head>` секцијата на HTML5
- Елементот `style` го дефинира вгнездениот документ за стил
 - Атрибут `type` за специфицирање на MIME (Multipurpose Internet Mail Extensions) тип кој ја опишува содржината на елементот `style`

MIME type	Description
text/css	CSS documents
image/png	PNG images
text/javascript	JavaScript markup
text/plain	Plain text
image/jpeg	JPEG image
text/html	HTML markup



Deitel & Associates, Inc.

Deitel & Associates, Inc. is an authoring and corporate training organization specializing in programming languages, Internet and web technology, iPhone and Android app development, and object technology education.

Clients

The company's clients include many **Fortune 1000 companies**, government agencies, branches of the military and business organizations.

Embedded style sheets (2/2)

- CSS rules – запишани во телото на style sheet
- CSS selector – спецификација на елементите кои ќе бидат стилизирани согласно одредено правило
- Style-class декларации – дефинираат стилови кои може да се аплицираат на било кој елемент, им претходи (.)
- font-weight – bold, normal, bolder, lighter
- font-family
- font-size – релативни (xx-small, x-small, small, smaller, medium, large, larger, x-large, xx-large) наспроти фиксни вредности
 - За скалирање на екрани со различни димензии

Конфликтни стилови (1/2)

- Стиловите може да ги дефинира корисник (личност што ја гледа веб страната), автор (личност што го пишува документот) или кориснички агент (програма која го прегледува и прикажува документот, на пр. веб пребарувач)
 - Стиловите каскадно се надоврзуваат така што крајниот изглед на елементите на страна е резултат на комбинација на стилови дефинирани на различни начини
 - Стилови дефинирани од корисникот имаат предност над оние дефинирани од корисничкиот агент
 - Стилови дефинирани од авторот имаат предност над оние дефинирани од корисникот
- Стиловите дефинирани од родителски елементи најчесто (не секогаш!) се наследени од вгнездените елементи

Конфликтни стилови (2/2)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.6: advanced.html -->
4 <!-- Inheritance in style sheets. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>More Styles</title>
9     <style type = "text/css">
10    body { font-family: arial, helvetica, sans-serif; }
11    a.nodec { text-decoration: none; }
12    a:hover { text-decoration: underline; }
13    li em { font-weight: bold; }
14    h1, em { text-decoration: underline; }
15    ul { margin-left: 20px; }
16    ul ul { font-size: .8em; }
17  </style>
18 </head>
19 <body>
20   <h1>Shopping list for Monday:</h1>
21
22   <ul>
23     <li>Milk</li>
24     <li>Bread
25       <ul>
26         <li>white bread</li>
27         <li>Rye bread</li>
28         <li>Whole wheat bread</li>
29       </ul>
30     </li>
31     <li>Carrots</li>
32     <li>Yogurt</li>
33     <li>Pizza <em>with mushrooms</em></li>
34   </ul>
35
36   <p><em>Go to the</em>
37     <a class = "nodec" href = "http://www.deitel.com">
38       Grocery store</a>
39     </p>
40   </body>
41 </html>
```

The figure consists of two screenshots of a web browser window. Both screenshots show a page titled "More Styles" with a "Shopping list for Monday:" heading. The list includes items like Milk, Bread (with sub-items White bread, Rye bread, Whole wheat bread), Carrots, Yogurt, and Pizza *with mushrooms*. Below the list is a paragraph with a link "Go to the Grocery store".

In the top screenshot, the link "Go to the Grocery store" is displayed without any decorative underlines or styling.

In the bottom screenshot, the link "Go to the Grocery store" is displayed with underlines appearing under the text "Grocery store" when the mouse cursor is hovering over it. This demonstrates how CSS styles can be applied to specific elements based on user interaction (like hovering).

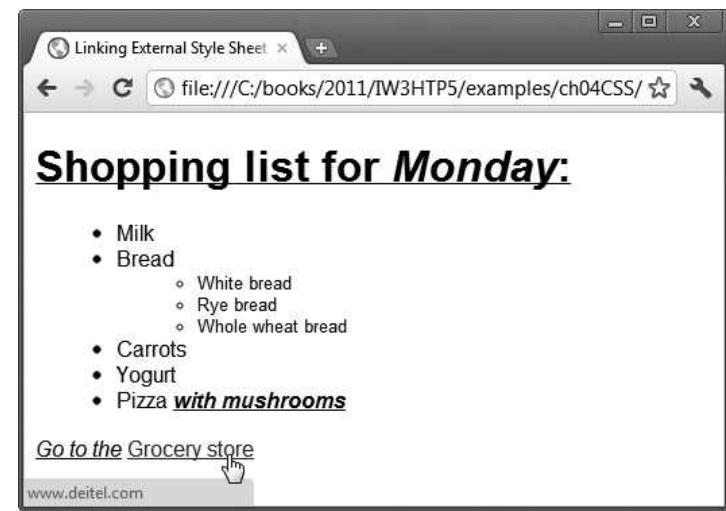
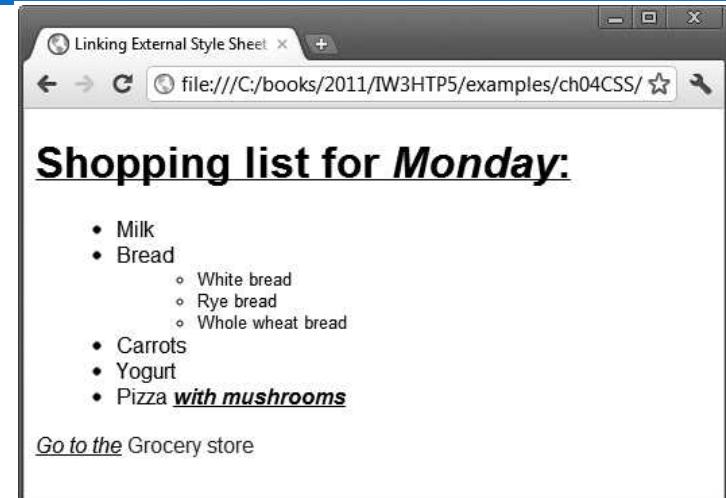
External style sheets (1/2)

- Развојување на содржината и стилот во посебни документи
 - Документите за стилот содржат само CSS правила
 - Може да се користи истиот external style sheet за сите страни на еден веб сайт, за дел од страни на еден веб сайт, па дури може и да се користи од веб страни на различни веб сайтови
 - Промена на стилот на веб сайтот подразбира промена само на external style sheet => skinning

```
1  /* Fig. 4.7: styles.css */  
2  /* External style sheet */  
3  body      { font-family: arial, helvetica, sans-serif; }  
4  a.nodec   { text-decoration: none; }  
5  a:hover   { text-decoration: underline; }  
6  li em    { font-weight: bold; }  
7  h1, em   { text-decoration: underline; }  
8  ul        { margin-left: 20px; }  
9  ul ul    { font-size: .8em; }
```

External style sheets (2/2)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.8: external.html -->
4 <!-- Linking an external style sheet. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Linking External Style Sheets</title>
9     <link rel = "stylesheet" type = "text/css"
10       href = "styles.css">
11   </head>
12   <body>
13     <h1>Shopping list for <em>Monday</em></h1>
14
15     <ul>
16       <li>Milk</li>
17       <li>Bread
18         <ul>
19           <li>white bread</li>
20           <li>Rye bread</li>
21           <li>Whole wheat bread</li>
22         </ul>
23       </li>
24       <li>Carrots</li>
25       <li>Yogurt</li>
26       <li>Pizza <em>with mushrooms</em></li>
27     </ul>
28
29     <p><em>Go to the</em>
30       <a class = "nodec" href = "http://www.deitel.com">
31         Grocery store</a>
32     </p>
33   </body>
34 </html>
```



Block-level vs. inline elements

- Секој HTML елемент има default вредност на прикажување во зависност од типот на елементот
- Постојат 2 вредности на прикажување: block-level и inline
- Block-level елементи
 - Секогаш започнуваат на нова линија и пребарувачот автоматски додава маргина пред и после елементот
 - Зафаќаат целата расположлива ширина
 - Најчесто користени `<p>` и `<div>` (дел/секција од HTML документ)

```
<address>    <article>    <aside>    <blockquote>  <canvas>    <dd>        <div>
<dl>          <dt>         <fieldset>   <figcaption> <figure>    <footer>    <form>
<h1>-<h6>    <header>    <hr>        <li>          <main>     <nav>      <noscript>
<ol>          <p>          <pre>        <section>   <table>    <tfoot>    <ul>
<video>
```

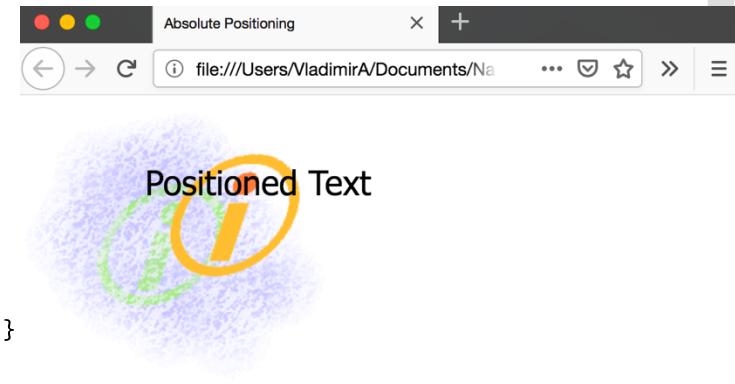
- Inline елементи
 - Не започнуваат на нова линија
 - Зафаќаат простор колку што им е потребно
 - Важно: inline елемент не може да содржи block-level елемент

```
<a>          <abbr>       <acronym>    <b>          <bdo>       <big>        <br>
<button>     <cite>       <code>       <dfn>        <em>        <i>          <img>
<input>       <kbd>       <label>      <map>        <object>    <output>    <q>
<samp>        <script>     <select>    <small>      <span>      <strong>    <sub>
<sup>         <textarea>  <time>      <tt>         <var>
```

- Grouping елементи (може да се од двета типа)

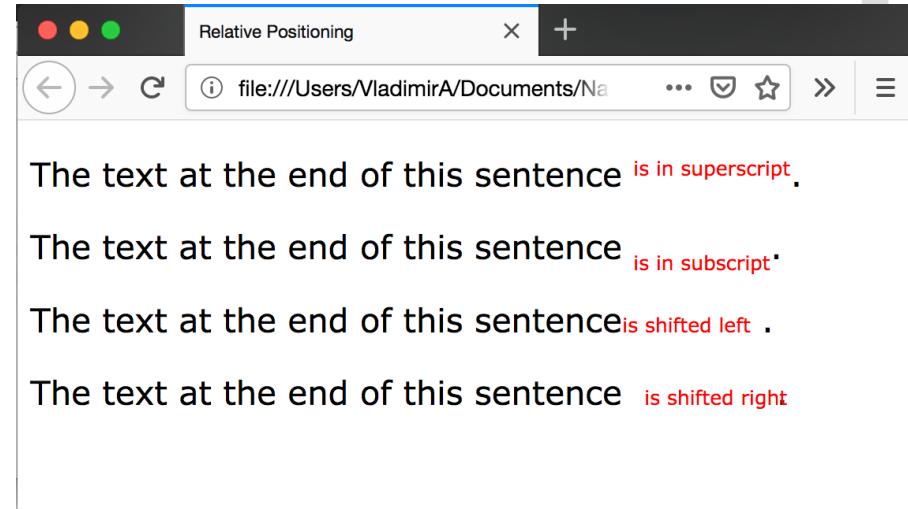
Апсолутно позиционирање, z-index

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.9: positioning.html -->
4 <!-- Absolute positioning of elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Absolute Positioning</title>
9     <style type = "text/css">
10       .background_image { position: absolute;
11         top: 0px;
12         left: 0px;
13         z-index: 1; }
14       .foreground_image { position: absolute;
15         top: 25px;
16         left: 100px;
17         z-index: 2; }
18       .text
19         { position: absolute;
20           top: 25px;
21           left: 100px;
22           z-index: 3;
23             font-size: 20pt;
24             font-family: tahoma, geneva, sans-serif; }
25     </style>
26   </head>
27   <body>
28     <p><img src = "background_image.png" class = "background_image"
29       alt = "First positioned image" /></p>
30
31     <p><img src = "foreground_image.png" class = "foreground_image"
32       alt = "Second positioned image" /></p>
33
34     <p class = "text">Positioned Text</p>
35   </body>
36 </html>
```



Релативно позиционирање, span

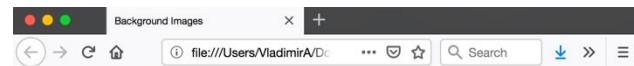
```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.10: positioning2.html -->
4 <!-- Relative positioning of elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Relative Positioning</title>
9     <style type = "text/css">
10       p          { font-size: 1.3em;
11                     font-family: verdana, arial, sans-serif; }
12       span        { color: red;
13                     font-size: .6em;
14                     height: 1em; }
15       .super      { position: relative;
16                     top: -1ex; }
17       .sub        { position: relative;
18                     bottom: -1ex; }
19       .shiftleft  { position: relative;
20                     left: -1ex; }
21       .shiftright { position: relative;
22                     right: -1ex; }
23     </style>
24   </head>
25   <body>
26     <p>The text at the end of this sentence
27       <span class = "super">is in superscript</span>.</p>
28
29     <p>The text at the end of this sentence
30       <span class = "sub">is in subscript</span>.</p>
31
32     <p>The text at the end of this sentence
33       <span class = "shiftleft">is shifted left</span>.</p>
34
35     <p>The text at the end of this sentence
36       <span class = "shiftright">is shifted right</span>.</p>
37   </body>
38 </html>
```



Позадини

```
1  <!DOCTYPE html>
2
3  <!-- Fig. 4.11: background.html --&gt;
4  &lt;!-- Adding background images and indentation --&gt;
5  &lt;html&gt;
6    &lt;head&gt;
7      &lt;meta charset = "utf-8"&gt;
8      &lt;title&gt;Background Images&lt;/title&gt;
9      &lt;style type = "text/css"&gt;
10        body { background-image: url(logo.png);
11          background-position: bottom right;
12          background-repeat: no-repeat;
13          background-attachment: fixed;
14          background-color: lightgrey; }
15
16        p { font-size: 18pt;
17          color: Darkblue;
18          text-indent: 1em;
19          font-family: arial, sans-serif; }
20
21        .dark { font-weight: bold; }
22
23      &lt;/style&gt;
24    &lt;/head&gt;
25    &lt;body&gt;
26      &lt;p&gt;
27        This example uses the background-image,
28        background-position and background-attachment
29        styles to place the &lt;span class = "dark"&gt;Deitel
30
31        &amp; Associates, Inc.&lt;/span&gt; logo in the
32        bottom-right corner of the page. Notice how the logo
33        stays in the proper position when you resize the
34        browser window. The background-color fills in where
35        there is no image.
36
37      &lt;/p&gt;
38    &lt;/body&gt;
39  &lt;/html&gt;</pre>
```

- CSS нуди контрола на позадините на block-level елементите
- **background-image**
- **background-position**
- **background-repeat**
- **background-attachment**
- **text-indent**
- **font-style**

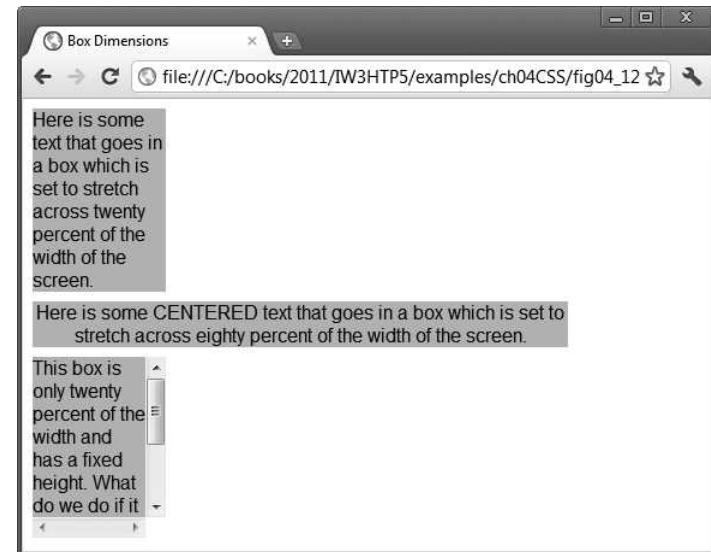


This example uses the background-image, background-position and background-attachment styles to place the **Deitel & Associates, Inc.** logo in the bottom-right corner of the page. Notice how the logo stays in the proper position when you resize the browser window. The background-color fills in where there is no image.



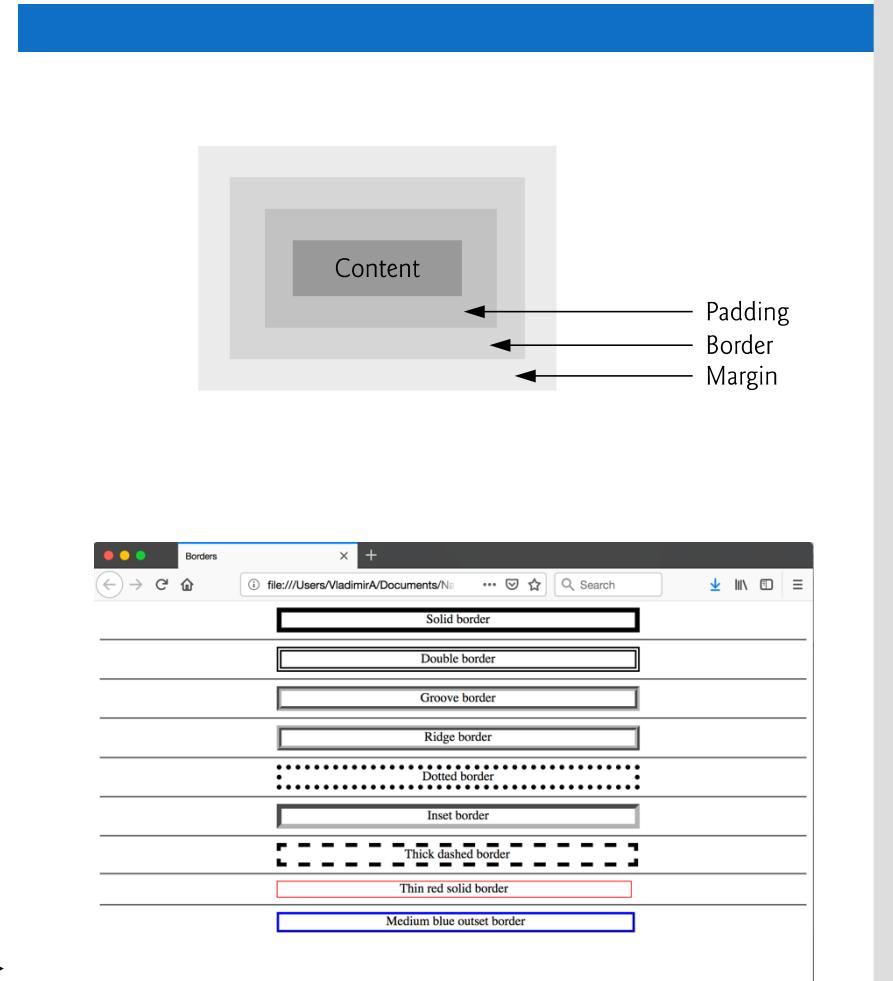
Димензии на елементите

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.12: width.html -->
4 <!-- Element dimensions and text alignment. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Box Dimensions</title>
9     <style type = "text/css">
10       p { background-color: lightskyblue;
11           margin-bottom: .5em;
12           font-family: arial, helvetica, sans-serif; }
13     </style>
14   </head>
15   <body>
16     <p style = "width: 20%">Here is some
17       text that goes in a box which is
18       set to stretch across twenty percent
19       of the width of the screen.</p>
20
21     <p style = "width: 80%; text-align: center">
22       Here is some CENTERED text that goes in a box
23       which is set to stretch across eighty percent of
24       the width of the screen.</section>
25
26     <p style = "width: 20%; height: 150px; overflow: scroll">
27       This box is only twenty percent of
28       the width and has a fixed height.
29       What do we do if it overflows? Set the
30       overflow property to scroll!</p>
31
32   </body>
33 </html>
```



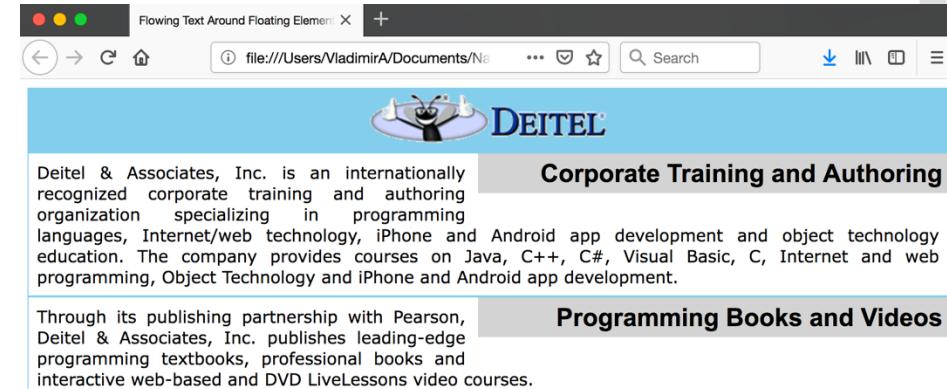
Box модель

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.14: borders.html -->
4 <!-- Borders of block-level elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Borders</title>
9     <style type = "text/css">
10       div { text-align: center;
11             width: 50%;
12             position: relative;
13             left: 25%;
14             border-width: 6px; }
15       .thick { border-width: thick; }
16       .medium { border-width: medium; }
17       .thin { border-width: thin; }
18       .solid { border-style: solid; }
19       .double { border-style: double; }
20       .groove { border-style: groove; }
21       .ridge { border-style: ridge; }
22       .dotted { border-style: dotted; }
23       .inset { border-style: inset; }
24       .outset { border-style: outset; }
25       .dashed { border-style: dashed; }
26       .red { border-color: red; }
27       .blue { border-color: blue; }
28     </style>
29   </head>
30   <body>
31     <div class = "solid">Solid border</div><hr>
32     <div class = "double">Double border</div><hr>
33     <div class = "groove">Groove border</div><hr>
34     <div class = "ridge">Ridge border</div><hr>
35     <div class = "dotted">Dotted border</div><hr>
36     <div class = "inset">Inset border</div><hr>
37     <div class = "thick dashed">Thick dashed border</div><hr>
38     <div class = "thin red solid">Thin red solid border</div><hr>
39     <div class = "medium blue outset">Medium blue outset border</div>
40   </body>
41 </html>
```



Floating елементи

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.15: floating.html -->
4 <!-- Floating elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Flowing Text Around Floating Elements</title>
9     <style type = "text/css">
10       header { background-color: skyblue;
11         text-align: center;
12         font-family: arial, helvetica, sans-serif;
13         padding: .2em; }
14       p { text-align: justify;
15         font-family: verdana, geneva, sans-serif;
16         margin: .5em; }
17       h1 { margin-top: 0px; }
18       .floated { background-color: lightgrey;
19         font-size: 1.5em;
20         font-family: arial, helvetica, sans-serif;
21         padding: .2em;
22         margin-left: .5em;
23         margin-bottom: .5em;
24         float: right;
25         text-align: right;
26         width: 50%; }
27       section { border: 1px solid skyblue; }
28     </style>
29   </head>
30   <body>
31     <header><img src = "deitel.png" alt = "Deitel" /></header>
32     <section>
33       <h1 class = "floated">Corporate Training and Authoring</h1>
34       <p>Deitel & Associates, Inc. is an internationally
35         recognized corporate training and authoring organization
36         specializing in programming languages, Internet/web
37         technology, iPhone and Android app development and
38         object technology education. The company provides courses
39         on Java, C++, C#, Visual Basic, C, Internet and web
40         programming, Object Technology and iPhone and Android
41         app development.</p>
42     </section>
43     <section>
44       <h1 class = "floated">Programming Books and Videos</h1>
45       <p>Through its publishing
46         partnership with Pearson, Deitel & Associates,
47         Inc. publishes leading-edge programming textbooks,
48         professional books and interactive web-based and DVD
49         LiveLessons video courses.</p>
50     </section>
51   </body>
52 </html>
```



CSS media types

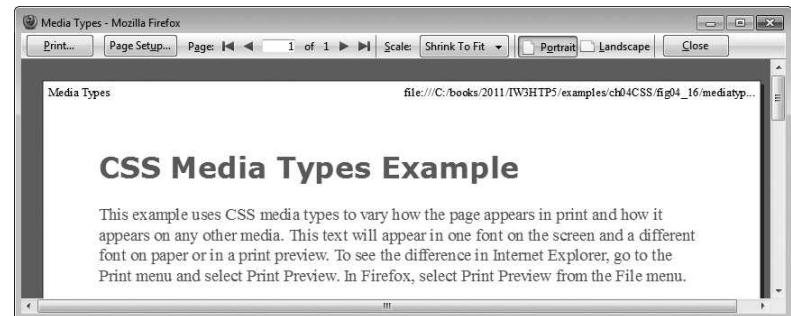
```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.16: mediatypes.html -->
4 <!-- CSS media types. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Media Types</title>
9     <style type = "text/css">
10    @media all
11    {
12      body { background-color: steelblue; }
13      h1 { font-family: verdana, helvetica, sans-serif;
14           color: palegreen; }
15      p { font-size: 12pt;
16           color: white;
17           font-family: arial, sans-serif; }
18    } /* End @media all declaration. */
19    @media print
20    {
21      body { background-color: white; }
22      h1 { color: seagreen; }
23      p { font-size: 14pt;
24           color: steelblue;
25           font-family: "times new roman", times, serif; }
26    } /* End @media print declaration. */
27  </style>
28 </head>
29 <body>
30   <h1>CSS Media Types Example</h1>
31
32   <p>
33     This example uses CSS media types to vary how the page
34     appears in print and how it appears on any other media.
35     This text will appear in one font on the screen and a
36     different font on paper or in a print preview. To see
37     the difference in Internet Explorer, go to the Print
38     menu and select Print Preview. In Firefox, select Print
39     Preview from the File menu.
40   </p>
41 </body>
42 </html>
```

- CSS media types овозможуваат различен изглед на веб страната во зависност од типот на медиумот кој се користи за нејзино прикажување (screen, handheld, braille, speech, print)

a) Background color appears on the screen.



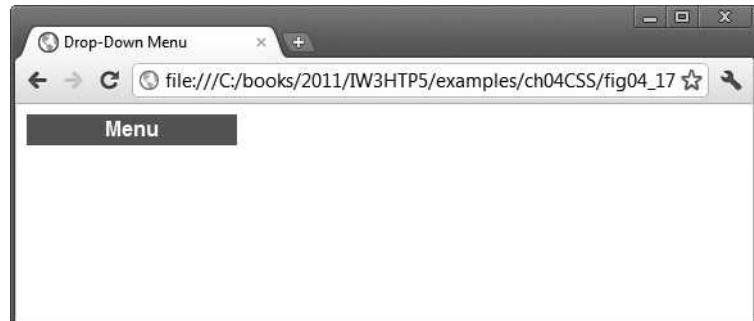
b) Background color is set to white for the print media type.



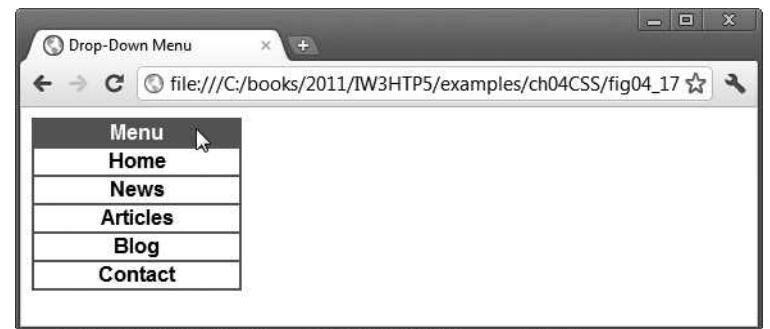
Паѓачки менија (drop-down menus)

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 4.17: dropdown.html -->
4 <!-- CSS drop-down menu. -->
5
6 <html>
7   <head>
8     <meta charset = "utf-8">
9     <title>
10       Drop-Down Menu
11     </title>
12     <style type = "text/css">
13       body          { font-family: arial, sans-serif }
14       nav           { font-weight: bold;
15                     color: white;
16                     border: 2px solid royalblue;
17                     text-align: center;
18                     width: 10em;
19                     background-color: royalblue; }
20
21       nav ul        { display: none;
22                     list-style: none;
23                     margin: 0;
24                     padding: 0; }
25
26       nav:hover ul { display: block }
27       nav ul li    { border-top: 2px solid royalblue;
28                     background-color: white;
29                     width: 10em;
30                     color: black; }
31
32       nav ul li:hover { background-color: powderblue; }
33
34       a             { text-decoration: none; }
35
36   </style>
37 </head>
38 <body>
39   <nav>Menu
40     <ul>
41       <li><a href = "#">Home</a></li>
42       <li><a href = "#">News</a></li>
43       <li><a href = "#">Articles</a></li>
44       <li><a href = "#">Blog</a></li>
45       <li><a href = "#">Contact</a></li>
46     </ul>
47   </nav>
48 </body>
49
50 </html>
```

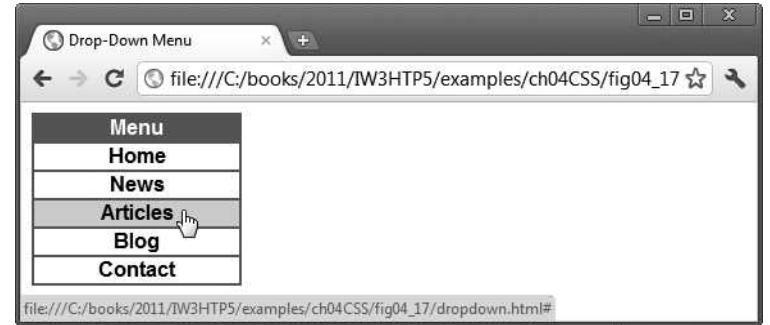
a) A collapsed menu



b) A drop-down menu is displayed when the mouse cursor is hovered over **Menu**



c) Hovering the mouse cursor over a menu link highlights the link



file:///C:/books/2011/IW3HTP5/examples/ch04CSS/fig04_17/dropdown.html#

Text shadows

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.1: textshadow.html -->
4 <!-- Text shadow in CSS3. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Text Shadow</title>
9     <style type = "text/css">
10    h1
11    {
12      text-shadow: -4px 4px 6px dimgrey; /* add shadow */
13      font-size: 400%; /* increasing the font size */
14    }
15  </style>
16 </head>
17 <body>
18   <h1>Text Shadow</h1>
19 </body>
20 </html>
```

□ **text-shadow**

- **Horizontal offset**

- **Vertical offset**

- **Blur**

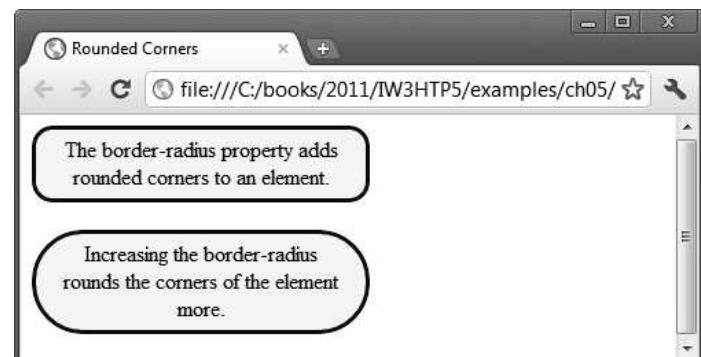
- **Color**



Rounded corners

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.2: roundedcorners.html -->
4 <!-- Using border-radius to add rounded corners to two elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Rounded Corners</title>
9     <style type = "text/css">
10    div
11    {
12      border: 3px solid navy;
13      padding: 5px 20px;
14      background: lightcyan;
15      width: 200px;
16      text-align: center;
17      border-radius: 15px; /* adding rounded corners */
18      margin-bottom: 20px;
19    }
20    #round2
21    {
22      border: 3px solid navy;
23      padding: 5px 20px;
24      background: lightcyan;
25      width: 200px;
26      text-align: center;
27      border-radius: 50px; /* increasing border-radius */
28    }
29  </style>
30 </head>
31 <body>
32   <div>The border-radius property adds rounded corners
33       to an element.</div>
34   <div id = "round2">Increasing the border-radius rounds the corners
35       of the element more.</div>
36 </body>
37 </html>
```

- **border-radius**
 - **border-top-left-radius**
 - **border-top-right-radius**
 - **border-bottom-left-radius**
 - **border-bottom-right-radius**



Боја

- CSS3 нуди повеќе можности за манипулирање со боја отколку стандардниот HTML пристап (имиња или хексадецимални кодови, 140+)
- RGB (Red, Green, Blue) и RGBA (Red, Green, Blue, Alpha), 16M+
 - R, G и B вредностите се движат од 0 до 255
 - Alpha вредноста се однесува на транспарентноста и се движи од 0.0 (целосна транспарентност) до 1.0 (нула транспарентност)
 - `background: rgba(255, 0, 0, 0.5);`
- HSL (Hue, Saturation, Lightness) и HSLA (Hue, Saturation, Lightness, Alpha)
 - Hue е боја или сенка изразена со вредност од 0 до 359 кои претставуваат степени на тркало на боја (боите на тркалото го следат виножитото)
 - Saturation е интензитетот на бојата или сенката (`hue`) со вредности од 0% (сиво) до 100% (целосна боја)
 - Lightness е интензитетот на светлината на бојата, 50% е самата боја, пониски вредности носат кон комплетно темно (0%, црна боја), повисоки вредности носат кон комплетно светло (100%, бела боја)
 - `background: hsla(0, 100%, 50%, 0.5)`

Box shadows

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.3: boxshadow.html -->
4 <!-- Creating box-shadow effects. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Box Shadow</title>
9     <style type = "text/css">
10    div
11    {
12      width: 200px;
13      height: 200px;
14      background-color: plum;
15      box-shadow: 25px 25px 50px dimgrey;
16      float: left;
17      margin-right: 120px;
18      margin-top: 40px;
19    }
20    #box2
21    {
22      width: 200px;
23      height: 200px;
24      background-color: plum;
25      box-shadow: -25px -25px 50px dimgrey;
26    }
27    h2
28    {
29      text-align: center;
30    }
31  </style>
32 </head>
33 <body>
34   <div><h2>Box Shadow Bottom and Right</h2></div>
35   <div id = "box2"><h2>Box Shadow Top and Left</h2></div>
36 </body>
37 </html>
```

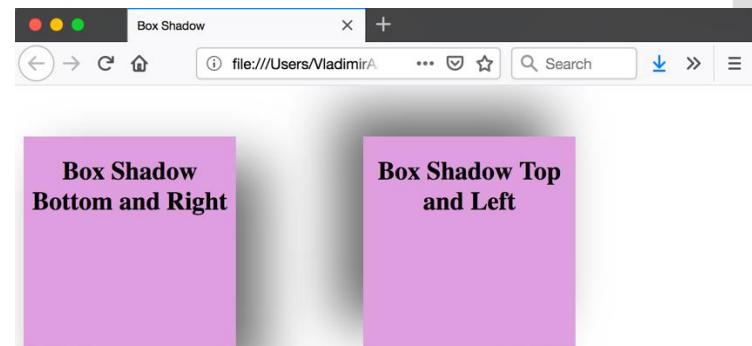
□ box-shadow

□ Horizontal offset

□ Vertical offset

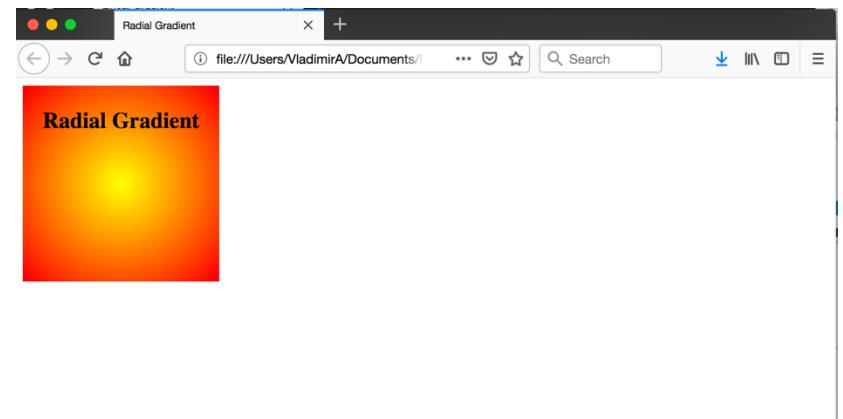
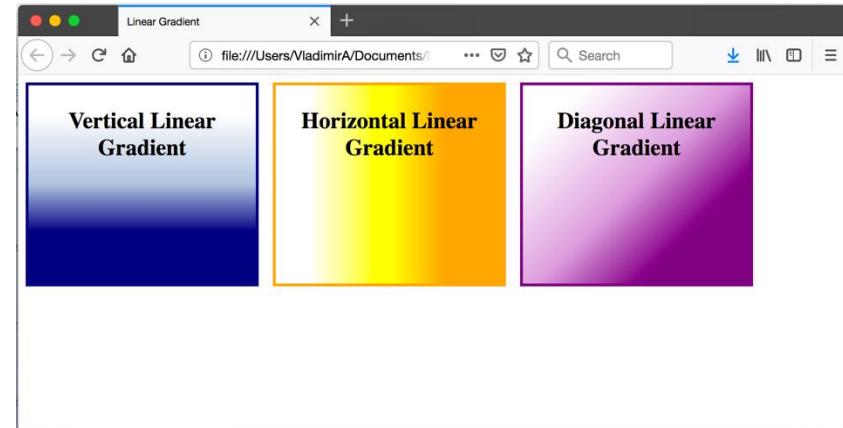
□ Blur

□ Color



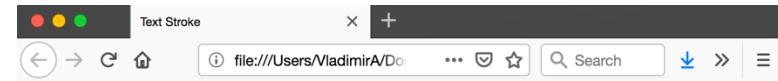
Градиенти

- Линеарни градиенти се тип на слики кои постепено транзитираат од една кон друга боја хоризонтално, вертикално или дијагонално
 - Транзиции во точки наречени `color-steps`
- Може да се користат кај било кој `property` што прифаќа `image`
- Радијални градиенти – слични на линеарните со тоа што поаѓаат од центарот на сликата и се шират кон надворешен круг



Text Stroke

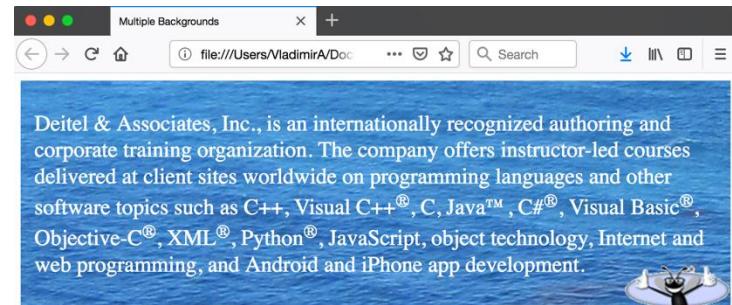
```
1  <!DOCTYPE html>
2
3  <!-- Fig. 5.7: textstroke.html --&gt;
4  &lt;!-- Text stroke in CSS3. --&gt;
5  &lt;html&gt;
6      &lt;head&gt;
7          &lt;meta charset = "utf-8"&gt;
8          &lt;title&gt;Text Stroke&lt;/title&gt;
9          &lt;style type = "text/css"&gt;
10         h1
11         {
12             color: lightcyan;
13             -webkit-text-stroke: 2px black; /* vendor prefix */
14             font-size: 500%; /* increasing the font size */
15         }
16     &lt;/style&gt;
17 &lt;/head&gt;
18 &lt;body&gt;
19     &lt;h1&gt;Text Stroke&lt;/h1&gt;
20 &lt;/body&gt;
21 &lt;/html&gt;</pre>
```



Text Stroke

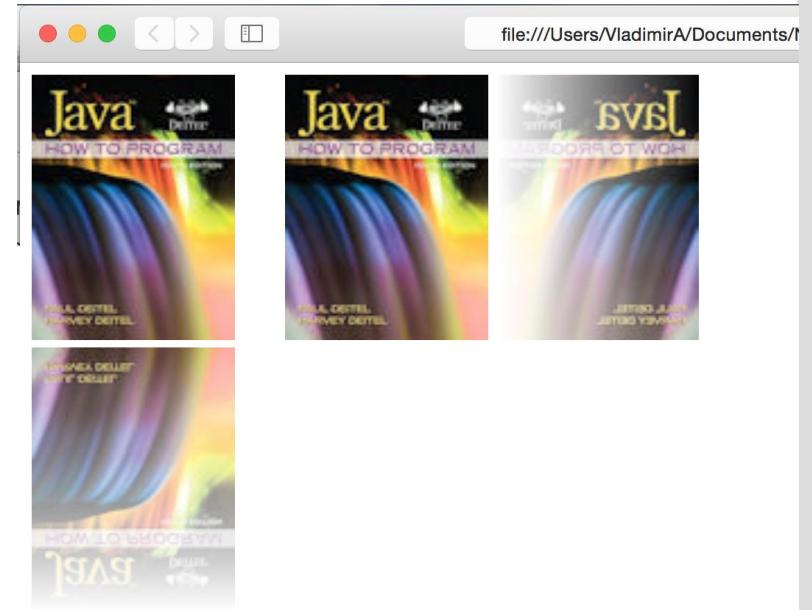
Повеќекратни позадински слики

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.8: multiplebackgrounds.html -->
4 <!-- Multiple background images in CSS3. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Multiple Backgrounds</title>
9     <style type = "text/css">
10       div.background
11         {
12           background-image: url(logo.png), url(ocean.png);
13           background-position: bottom right, 100% center;
14           background-origin: border-box, content-box;
15           background-repeat: no-repeat, repeat;
16         }
17       div.content
18         {
19           padding: 10px 15px;
20           color: white;
21           font-size: 150%;
22         }
23     </style>
24   </head>
25   <body>
26     <div class = "background">
27       <div class = "content">
28         <p>Deitel & Associates, Inc., is an internationally recognized
29             authoring and corporate training organization. The company
30             offers instructor-led courses delivered at client sites
31             worldwide on programming languages and other software topics
32             such as C++, Visual C++®, C, Java™, C#®, Visual Basic®,
33             Objective-C®®, XML®, Python®, JavaScript, object technology, Internet
34             and web programming, and Android and iPhone app
35             development.</p>
36       </div></div>
37     </body>
38   </html>
```



Reflections

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.9: reflection.html -->
4 <!-- Reflections in CSS3. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Reflection</title>
9     <style type = "text/css">
10    img { margin: 10px; }
11    img.below
12    {
13      -webkit-box-reflect: below 5px
14      -webkit-gradient(
15        linear, left top, left bottom,
16        from(transparent), to(white));
17    }
18    img.right
19    {
20      -webkit-box-reflect: right 5px
21      -webkit-gradient(
22        linear, right top, left top,
23        from(transparent), to(white));
24    }
25  </style>
26 </head>
27 <body>
28   <img class = "below" src = "jhtp.png" width = "138" height = "180"
29     alt = "Java How to Program book cover">
30   <img class = "right" src = "jhtp.png" width = "138" height = "180"
31     alt = "Java How to Program book cover">
32 </body>
33 </html>
```



Граници на елементи со слики

```
1 <!DOCTYPE html>
2
3     <!-- Fig. 5.10: imageborder.html --&gt;
4     <!-- Stretching and repeating an image to create a border. --&gt;
5 &lt;html&gt;
6     &lt;head&gt;
7         &lt;meta charset = "utf-8"&gt;
8         &lt;title&gt;Image Border&lt;/title&gt;
9         &lt;style type = "text/css"&gt;
10            div
11            {
12                border-width: 30px;
13                width: 234px;
14                padding: 20px 20px;
15            }
16            #stretch
17            {
18                -webkit-border-image: url(border.png) 80 80 80 80 stretch;
19                -moz-border-image: url(border.png) 80 80 80 80 stretch;
20                -o-border-image: url(border.png) 80 80 80 80 stretch;
21                border-image: url(border.png) 80 80 80 80 stretch;
22            }
23            #repeat
24            {
25                -webkit-border-image:url(border.png) 34% 34% repeat;
26                -moz-border-image:url(border.png) 34% 34% repeat;
27                -o-border-image:url(border.png) 34% 34% repeat;
28                border-image:url(border.png) 34% 34% repeat;
29            }
30        &lt;/style&gt;
31    &lt;/head&gt;
32    &lt;body&gt;
33        &lt;h2&gt;Image Borders&lt;/h2&gt;
34        &lt;img src = "border.png" alt = "image used to demonstrate borders"&gt;
35        &lt;p&gt;&lt;div id="stretch"&gt;Stretching the image border&lt;/div&gt;&lt;/p&gt;
36        &lt;p&gt;&lt;div id="repeat"&gt;Repeating the image border&lt;/div&gt;&lt;/p&gt;
37    &lt;/body&gt;
38 &lt;/html&gt;</pre>
```



Анимации

```
1  <!DOCTYPE html>
2
3  <!-- Fig. 5.11: animation.html --&gt;
4  <!-- Animation in CSS3. --&gt;
5  &lt;html&gt;
6      &lt;head&gt;
7          &lt;meta charset = "utf-8"&gt;
8          &lt;title&gt;Animation&lt;/title&gt;
9          &lt;style type = "text/css"&gt;
10         img
11         {
12             position: relative;
13             -webkit-animation: movingImage linear 10s 1s 2 alternate;
14             -moz-animation: movingImage linear 10s 1s 2 alternate;
15             animation: movingImage linear 10s 2 1s alternate;
16         }
17         @-webkit-keyframes movingImage
18         {
19             0%   {opacity: 0; left: 50px; top: 0px;}
20
21
22
23
24
25
26
27             25%  {opacity: 1; left: 0px; top:5 0px;}
28             50%  {opacity: 0; left: 50px; top: 100px;}
29             75%  {opacity: 1; left: 100px; top: 50px;}
30             100% {opacity: 0; left: 50px; top: 0px;}
31         }
32         @-moz-keyframes movingImage
33         {
34             0%   {opacity: 0; left: 50px; top: 0px;}
35             25%  {opacity: 1; left: 0px; top:5 0px;}
36             50%  {opacity: 0; left: 50px; top: 100px;}
37             75%  {opacity: 1; left: 100px; top: 50px;}
38             100% {opacity: 0; left: 50px; top: 0px;}
39         }
40         @keyframes movingImage
41         {
42             0%   {opacity: 0; left: 50px; top: 0px;}
43             25%  {opacity: 1; left: 0px; top: 50px;}
44             50%  {opacity: 0; left: 50px; top: 100px;}
45             75%  {opacity: 1; left: 100px; top: 50px;}
46             100% {opacity: 0; left: 50px; top: 0px;}
47     }
48
49     &lt;/style&gt;
50
51     &lt;/head&gt;
52     &lt;body&gt;
53
54         &lt;img src = "jhtp.png" width = "138" height = "180"
55             alt = "Java How to Program book cover"&gt;
56
57         &lt;div&gt;&lt;/div&gt;
58
59     &lt;/body&gt;
60
61 &lt;/html&gt;</pre>
```

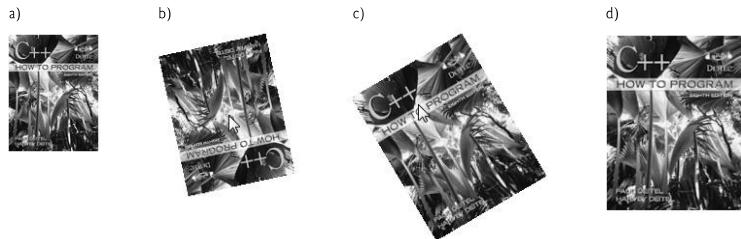
```
animation-name: movingImage;
animation-timing-function: linear;
animation-duration: 10s;
animation-delay: 1s;
animation-iteration-count: 2;
animation-direction: alternate;
```

@keyframes rule and selectors

Транзиции и трансформации

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 5.12: transitions.html -->
4 <!-- Transitions in CSS3. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Transitions</title>
9     <style type = "text/css">
10    img
11    {
12      margin: 80px;
13      -webkit-transition: -webkit-transform 4s;
14      -moz-transition: -moz-transform 4s;
15      -o-transition: -o-transform 4s;
16      transition: transform 4s;
17    }
18    img:hover
19    {
20      -webkit-transform: rotate(360deg) scale(2, 2);
21      -moz-transform: rotate(360deg) scale(2, 2);
22      -o-transform: rotate(360deg) scale(2, 2);
23      transform: rotate(360deg) scale(2, 2);
24    }
25  </style>
26 </head>
27 <body>
28   <img src = "cpphttp.png" width = "76" height = "100"
29     alt = "C++ How to Program book cover">
30 </body>
31 </html>
```

- Со помош на CSS3 транзиции може да се менува стилот на еден елемент за одреден временски период
- CSS3 трансформациите овозможуваат move, rotate, scale и skew на елементи
- Можно е истовремено манипулирање и со транзиции и со трансформации



Домашна задача #2

- Да се стилизира домашната задача #1
 - Да се креира посебен CSS документ кој ќе содржи најмалку 4 CSS rules кои ќе опфатат најмалку 8 CSS карактеристики
- Да се постават html и css документ на [github](#) до 27.10.2024, 23:59

Проектна задача #1

- Веб страна на продавница за возила:
 - Дома
 - Најава, стилизиран header и footer, опис на категории на производи кои се нудат (нови возила и половни возила)
 - Кај секоја категорија на производи
 - Опис, линкови кон страни за конкретни модели, линкови кон страни за рецензии за моделите, динамичко преземање текст од одредени линкови, **слики од конкретните производи**, форма за закажување тест возење
 - Слики од конкретните производи
 - Отвора нов дел
 - Мини инстаграм, да може да се додаваат/бришат, да се ставаат коментари на сликите и лајкови
 - Анкета за посетителите за импресии од сајтот
 - Прашалник за приирање податоци за импресии, да има внесување податоци, избор на опции, внесување текст и слично
- Презентација во термините за часови на 12 ноември 2024
- Да се постави кодот на `github` до 11.11.2023, 23:59