

Jquery Library

INF1802

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Outline

- Module 3 – JQuery Library

Reference

- W3Schools - Javascript
 - <http://www.w3schools.com/js/>
- JQuery API
 - <http://api.jquery.com/>
- Learn JQuery
 - <http://learn.jquery.com>
- jQuery Cookbook. jQuery Community Experts. O'Reilly Media, Inc.

Module 3 – JQuery

jQuery

- jQuery is an open source **JavaScript library** that simplifies the interactions between an HTML document, or more precisely the Document Object Model (aka the DOM), and JavaScript.
- The purpose of jQuery is to make it much easier to use JavaScript. jQuery takes a lot of common tasks that requires many lines of JavaScript code to accomplish, and wraps it into methods that you can call with a single line of code.

Why jQuery ?

- It's open source
- It's free!
- It's small (18 KB minified) and gzipped (114 KB, uncompressed).
- It's incredibly popular, which is to say it has a large community of users and a healthy amount of contributors who participate as developers and evangelists.
- It normalizes the differences between web browsers so that you don't have to.
- Its repository of plugins is vast and has seen steady growth since jQuery's release.
- Its API is fully documented.
- It's friendly, which is to say it provides helpful ways to avoid conflicts with other JavaScript libraries.
- ...

The JQuery Philosophy

- “Write less, do more.”
- It can be further broken down into three concepts:
 1. Finding some elements (via CSS selectors) and doing something with them (via jQuery methods)
 2. Chaining multiple jQuery methods on a set of elements
 3. Using the jQuery wrapper and implicit iteration

1. Find some elements and do something with them

- Locate a set of elements in the DOM, and then do something with that set of elements.
- For example, let's examine a scenario where you want to:
 - hide a `<div>` from the user,
 - load some new text content into the hidden `<div>`,
 - change an attribute of the selected `<div>`,
 - and then finally make the hidden `<div>` visible again


```
...
<script>
//hide all divs on the page
jQuery('div').hide();
//update the text contained inside of all divs
jQuery('div').text('new content');
//add a class attribute with a value of updatedContent
to all divs
jQuery('div').addClass("updatedContent");
//show all divs on the page
jQuery('div').show();
</script>
...
```

2. Chaining multiple jQuery methods on a set of elements

- jQuery is constructed in a manner that will allow jQuery methods to be chained.

```
...  
<script>  
    jQuery ('div')  
        .hide ()  
        .text ('new content')  
        .addClass ("updatedContent")  
        .show () ;  
</script>  
...
```

Behind the scenes, the elements previously selected before a jQuery method was applied are always returned so that the chain can continue.

3. Using the jQuery wrapper and implicit iteration

- You may not have explicitly written any programmatic loop, but jQuery is going to scan the page, *place all selected DOM elements in a wrapper set, and* perform the jQuery methods you asked.

```
...
<body>
<div>old content</div>
<div>old content</div>
<div>old content</div>
<div>old content</div>
<script>
  //hide all divs on the page
  jQuery('div')
    .hide()
    .text('new content')
    .addClass("updatedContent")
    .show();
</script>
</body>
...
```

Including the jQuery Library Code in an HTML Page

- You want to use the jQuery JavaScript library on a web page

Including the jQuery Library Code in an HTML Page

- Use the Google-hosted content delivery network (CDN) to include a version of jQuery
- Download your own version of jQuery from jquery.com and host it on your own server or local filesystem.

```
<script
  type="text/javascript"
  src="http://ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js">
</script>
```

```
C:\Users\melissa\Dropbox (Tecgraf)\Melissa-Tecgraf\Treinamento\20161-INF1802\conteudo\Aulas\05-Javascr...
File Edit Selection Find View Goto Tools Project Preferences Help
ex1.html
1 <html>
2 <head>
3
4 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
5
6 <script type="text/JavaScript"
7 src="http://ajax.googleapis.com/ajax/libs/jquery/1.3.2/jquery.min.js"></
  script>
8
9 </head>
10 <body>
11
12 <script type="text/JavaScript">
13   console.log ('jQuery ' + jQuery.fn.jquery);
14 </script>
15
16 </body>
17 </html>
Line 13, Column 5
```

The screenshot shows a web browser window with the address bar displaying the file path: file:///C:/Users/melissa/Dropbox%20(Tecgraf)/M... The browser's developer tools are open, showing the 'Elements' panel with the 'body' element selected. The 'Console' panel is also open, displaying a log message: 'jQuery 1.3.2 ex1.html:13'. The message is preceded by a blue arrow, indicating it is a log statement. The console also shows a cursor at the end of the line: '> |'. The 'Styles' panel is visible on the right, showing the default 'margin' and 'border' styles for the selected element.

Executing jQuery/JavaScript Coded After the DOM Has Loaded but Before Complete Page Load

- Any DOM traversing and manipulation will require that the DOM is loaded before it can be operated on
- We need a way to determine when the client (web browser), has completely loaded the DOM but has possibly not yet completely loaded all assets such as images and SWF files
- If we were to use the `window.onload` event in this situation, the entire document including all assets would need to be completely loaded before the `onload` event fired. That's just too timeconsuming for most web surfers.
- We need an event that will tell us when the DOM alone is ready to be traversed and manipulated.

Executing jQuery/JavaScript Coded After the DOM Has Loaded but Before Complete Page Load

- jQuery provides the ready() method.
- The ready() method is passed a single parameter, a function, that contains the JavaScript code that should be executed once the DOM is ready to be traversed and manipulated.

```
<script>
  $(document).ready(function() {
    // all jQuery code goes here
  });
</script>
```

```
C:\Users\melissa\Dropbox (Tecgraf)\Melissa-Tecgraf\Treinamento\20161-INF1802\conteudo\Aulas\05-Javascr...
File Edit Selection Find View Goto Tools Project Preferences Help

ex2.html
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script type="text/JavaScript"
6 src="http://ajax.googleapis.com/ajax/libs/jquery/1.3.2/jquery.min.js"></
  script>
7
8 <script type="text/JavaScript">
9   jQuery(document).ready(function(){
10     //DOM not loaded, must use ready event
11     alert(jQuery('p').text());
12   });
13 </script>
14 </head>
15
16 <body>
17 <p>The DOM is ready!</p>
18 </body>
19
20 </html>

Line 2, Column 7
```

The screenshot shows a web browser window with a single tab titled 'ex2.html'. The address bar displays the file path: file:///C:/Users/melissa/Dropbox%20(Tecgraf)/M. The browser content area shows the text 'The DOM is ready!'. An alert dialog box is open in the foreground, with the title 'Essa página diz:' and the message 'The DOM is ready!'. Below the message is a checkbox labeled 'Impedir que esta página crie caixas de diálogo adicionais.' which is currently unchecked. An 'OK' button is located at the bottom right of the dialog box.

Selecting DOM Elements

- You need to select a single DOM element and/or a set of DOM elements in order to operate on the element(s) using jQuery methods.
- The jQuery library allows you to select elements in your HTML by wrapping them in `$("#")` (you could also use single quotes), which is the jQuery wrapper.

```
<script>
// selects all HTML div elements
  $("div");
// selects one HTML element with ID "myElement"
  $("#myElement");
// selects HTML elements with class "myClass"
  $(".myClass");
// selects paragraph elements with ID "myElement"
  $("p#myElement"); |
// selects anchors with class "navigation" that are nested in list items|
  $("ul li a.navigation");
</script>
```

```
<script>
// selects anchors that are direct children of paragraphs
$("p > a");

// selects inputs that have specified type
$("input[type=text]");

// selects the first anchor on the page
$("a:first");

// selects all odd numbered paragraphs
$("p:odd");

// every list item that's first child in a list
$("li:first-child");
</script>
```

Manipulating CSS Styles with jQuery

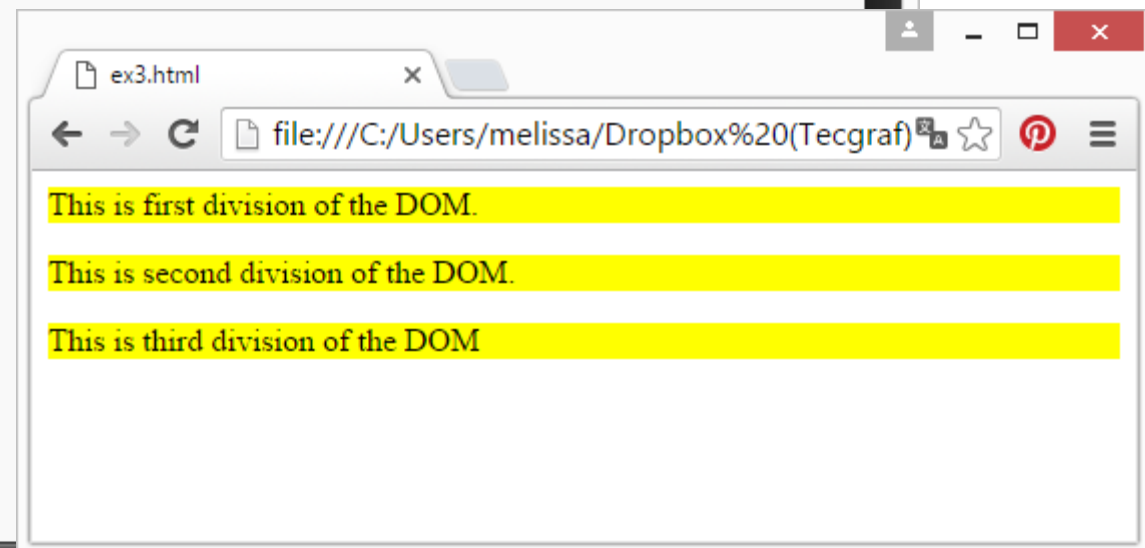
- CSS styles can be added to elements easily using jQuery.
- The `css()` method sets or returns one or more style properties for the selected elements.
- To return the value of a specified CSS property, use the following syntax: `css("propertyname");`
- To set a specified CSS property, use the following syntax: `css("propertyname","value");`

```
<script>
$("p").css("background-color");
</script>
```

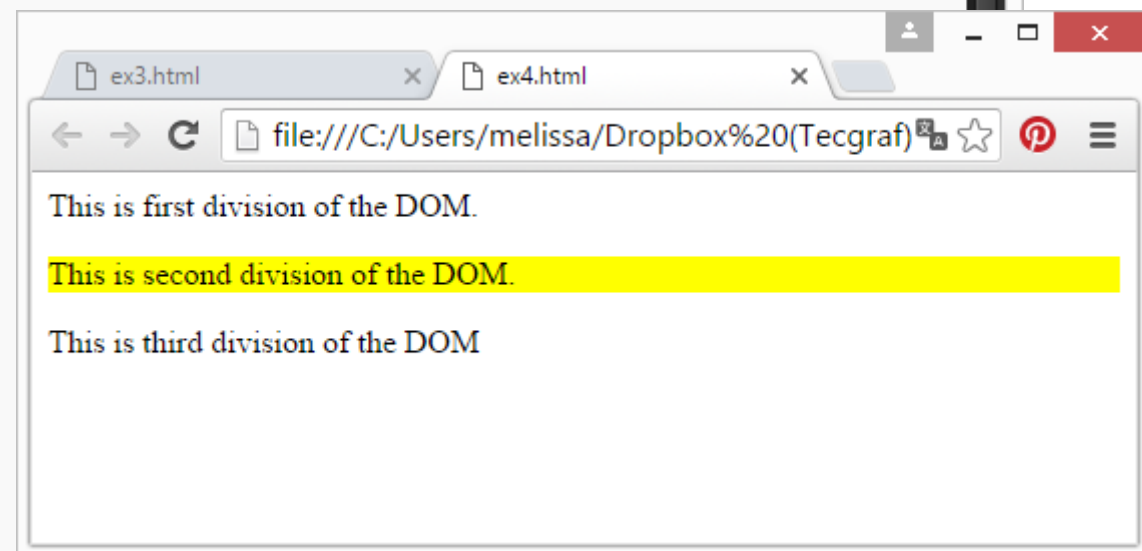
```
<script>
// adds a width to all paragraphs
$("p").css("width", "400px");
// makes text color blue on element #myElement
$("#myElement").css("color", "blue")
// adds a border to all lists
$("ul").css("border", "solid 1px #ccc")
</script>
```



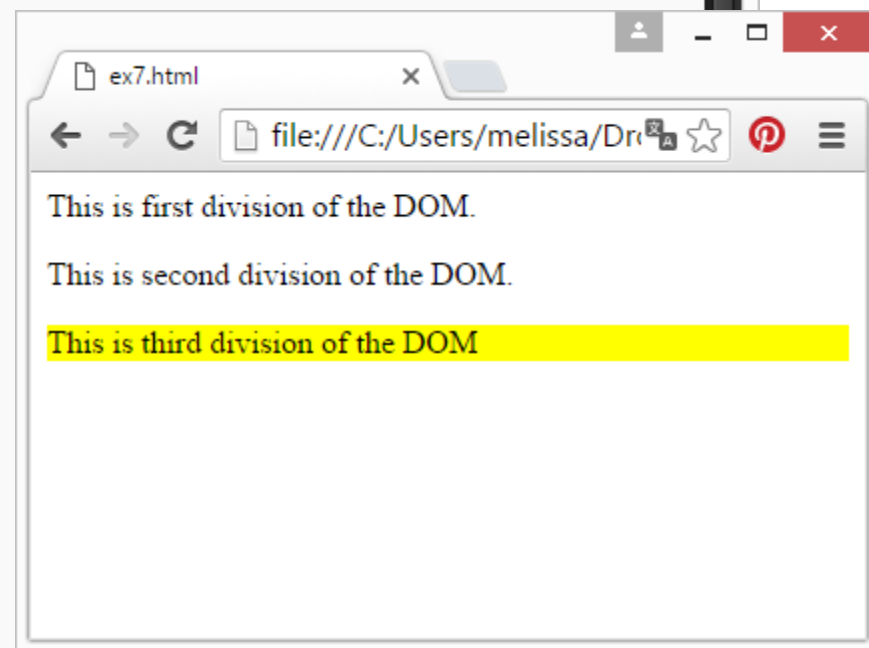
```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         /* This would select all the divisions */
10        $("div").css("background-color", "yellow");
11    });
12 </script>
13
14 </head>
15 <body>
16
17 <div class="big" id="div1">
18 <p>This is first division of the DOM.</p>
19 </div>
20 <div class="medium" id="div2">
21 <p>This is second division of the DOM.</p>
22 </div>
23 <div class="small" id="div3">
24 <p>This is third division of the DOM</p>
25 </div>
26 </body>
27 </html>
```



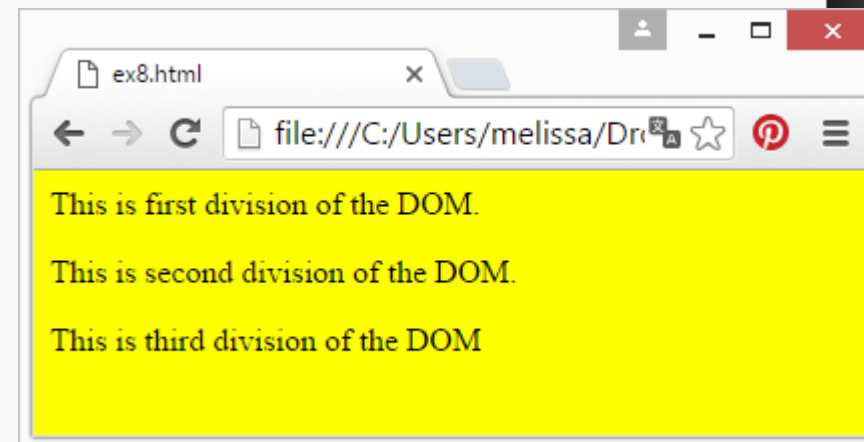
```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script type="text/javascript" language="javascript">
8 $(document).ready(function() {
9     /* This would select second division only*/
10     $("#div2").css("background-color", "yellow");
11 });
12 </script>
13
14 </head>
15 <body>
16
17 <div class="big" id="div1">
18 <p>This is first division of the DOM.</p>
19 </div>
20 <div class="medium" id="div2">
21 <p>This is second division of the DOM.</p>
22 </div>
23 <div class="small" id="div3">
24 <p>This is third division of the DOM</p>
25 </div>
26 </body>
27 </html>
```



```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $(".small").css("background-color", "yellow");
10    });
11 </script>
12
13 </head>
14 <body>
15
16 <div class="big" id="div1">
17 <p>This is first division of the DOM.</p>
18 </div>
19 <div class="medium" id="div2">
20 <p>This is second division of the DOM.</p>
21 </div>
22 <div class="small" id="div3">
23 <p>This is third division of the DOM</p>
24 </div>
25 </body>
26 </html>
```



```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("*").css("background-color", "yellow");
10    });
11 </script>
12
13 </head>
14 <body>
15
16 <div class="big" id="div1">
17 <p>This is first division of the DOM.</p>
18 </div>
19 <div class="medium" id="div2">
20 <p>This is second division of the DOM.</p>
21 </div>
22 <div class="small" id="div3">
23 <p>This is third division of the DOM</p>
24 </div>
25 </body>
26 </html>
```



```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $(".big, .small").css("background-color", "yellow");
10    });
11 </script>
12
13 </head>
14 <body>
15
16 <div class="big" id="div1">
17 <p>This is first division of the DOM.</p>
18 </div>
19 <div class="medium" id="div2">
20 <p>This is second division of the DOM.</p>
21 </div>
22 <div class="small" id="div3">
23 <p>This is third division of the DOM</p>
24
25 </body>
26 </html>
```

This is first division of the DOM.

This is second division of the DOM.

This is third division of the DOM

Manipulating CSS Styles with jQuery

– more ...

- http://www.w3schools.com/jquery/jquery_dom_add.asp
 - Test yourself with Exercises 1 - 4

Changing the HTML or text content of a specified element

- `append()` - Inserts content at the end of the selected elements
- `prepend()` - Inserts content at the beginning of the selected elements

```
// variable contains all HTML (including text) inside #myElement
var myElementHTML = $("#myElement").html();

// variable contains all text (excluding HTML) inside #myElement
var myElementHTML = $("#myElement").text();

// content inside #myElement will be replaced with that specified
$("#myElement").html("<p>This is the new content.</p>");

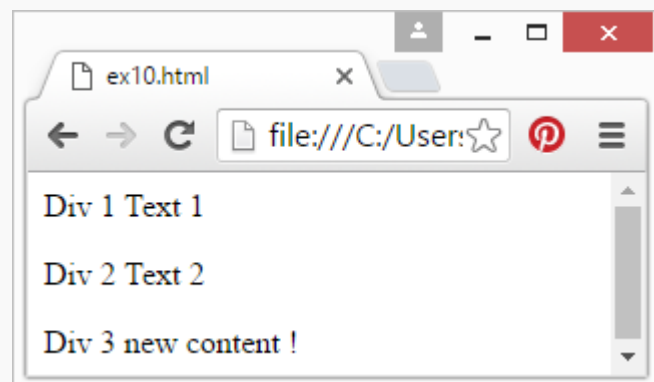
// text content will be replaced with that specified
$("#myElement").text("This is the new content.");

// keeps content intact, and adds the new content to the end
$("#myElement").append("<p>This is the new content.</p>");

// add the same content to all paragraphs
$("p").append("<p>This is the new content.</p>");
```



```
ex5.html x ex6.html x ex11.html x ex10.html x ex8.html x
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("#div3").html("Div 3 new content !");
10    });
11 </script>
12
13 </head>
14 <body>
15
16 <div class="big" id="div1">
17 <p>Div 1 Text 1</p>
18 </div>
19 <div class="medium" id="div2">
20 <p>Div 2 Text 2</p>
21 </div>
22 <div class="small" id="div3">
23 <p>Div 3 Text 3</p>
24 </div>
25 </body>
26 </html>
```



ex11.html

```
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("p").append("Paragraph content !");
10    });
11 </script>
12
13 </head>
14 <body>
15
16 <div class="big" id="div1">
17 <p>Div 1 Text 1.</p>
18 </div>
19 <div class="medium" id="div2">
20 <p>Div 2 Text 2.</p>
21 </div>
22 <div class="small" id="div3">
23 <p>Div 3 Text 3.</p>
24 </div>
25 </body>
26 </html>
```

ex10.html x ex11.html x

file:///C:/Users/melissa/

Div 1 Text 1.Paragraph content !

Div 2 Text 2.Paragraph content !

Div 3 Text 3.Paragraph content !

Add New HTML Content

Append, prepend – more ...

- http://www.w3schools.com/jquery/jquery_dom_add.asp
 - Test yourself with Exercises 1 - 4

Dealing with Events in jQuery

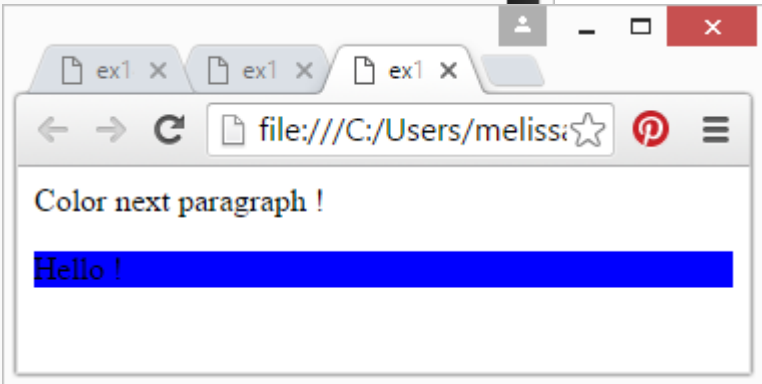
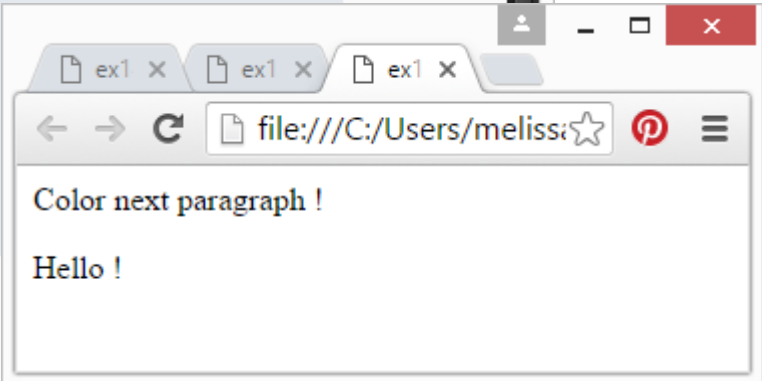
```
$("#a").click(function() {  
    // do something here  
    // when any anchor is clicked  
});
```

jQuery Events

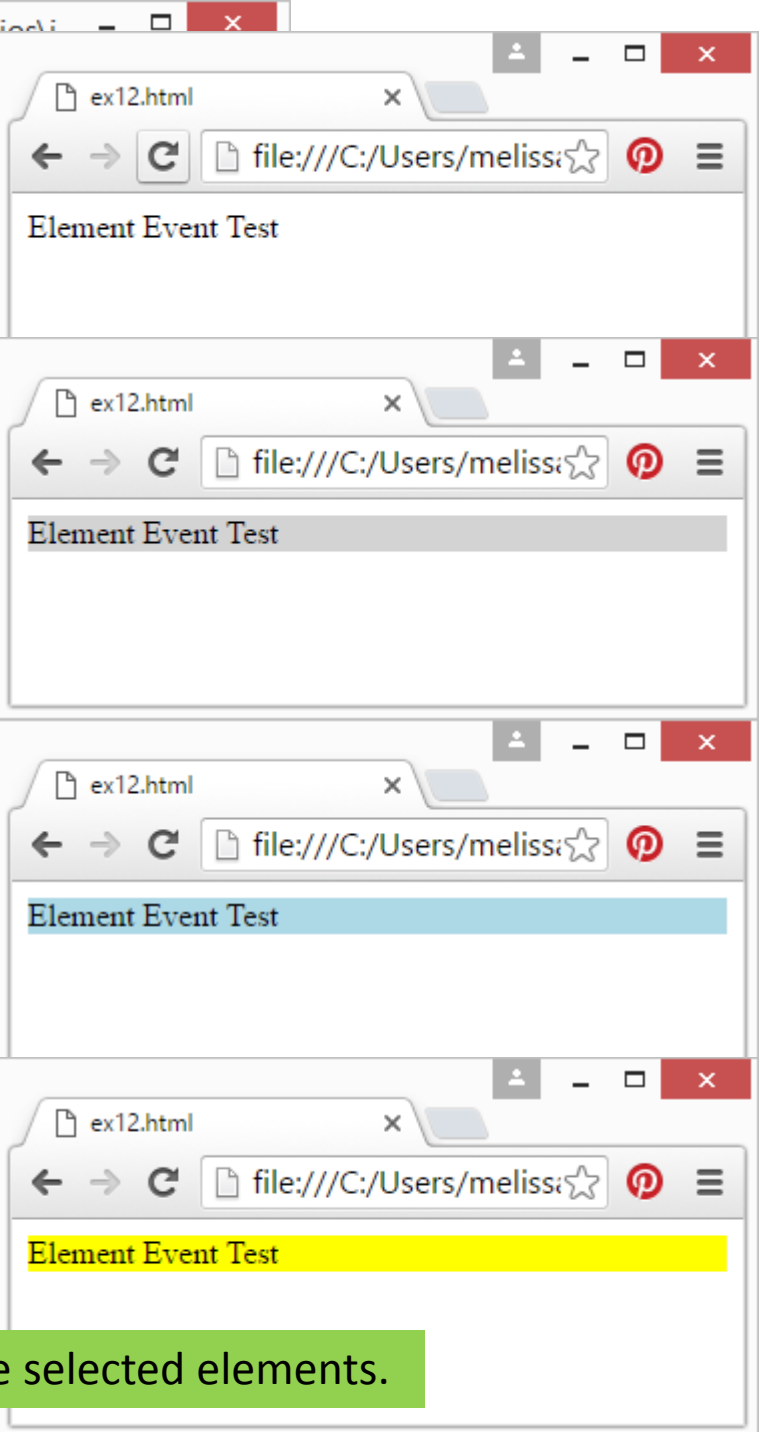
- Common Mouse Events:
 - click, dblclick, mouseenter, mouseleave, hover
- Common Keyboard Events:
 - keypress, keydown, keyup
- Common Form Events:
 - submit, change, focus, blur
- Common Document Events: load, resize, scroll, unload

```
$("#myElement").click( function() {  
    alert("You clicked me!");  
});  
  
$("p").dblclick( function() {  
    $(this).hide();  
});  
  
$(".colorful").hover(  
    function() {  
        $(this).css("background-color: FF0000"); // mouse enter  
    },  
    function () {  
        $(this).css("background-color: 0000FF"); // mouse exit  
    }  
);
```

```
C:\Users\melissa\Dropbox (Tecgraf)\Melissa-Tecgraf\Treinamento\20161-INF1802\conteudo\Aulas\05-Javascript\exercicios\j...
File Edit Selection Find View Goto Tools Project Preferences Help
ex14.html x ex16.html x
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("#par1").click(function(){
10             $("#par2").css("background-color", "blue");
11         });
12     });
13 </script>
14
15
16 </head>
17 <body>
18
19 <p id="par1">Color next paragraph !</p>
20 <p id="par2">Hello !</p>
21
22
23 </body>
24 </html>
```



```
C:\Users\melissa\Dropbox (Tecgraf)\Melissa-Tecgraf\Treinamento\20161-INF1802\conteudo\Aulas\05-Javascript\exercicios\...
File Edit Selection Find View Goto Tools Project Preferences Help
ex12.html
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("p").on({
10             mouseenter: function(){
11                 $(this).css("background-color", "lightgray");
12             },
13             mouseleave: function(){
14                 $(this).css("background-color", "lightblue");
15             },
16             click: function(){
17                 $(this).css("background-color", "yellow");
18             }
19         });
20     });
21 </script>
22
23 </head>
24 <body>
25
26 <p>Element Event Test</p>
27
28 </body>
29 </html>
```



The on() method attaches one or more event handlers for the selected elements.

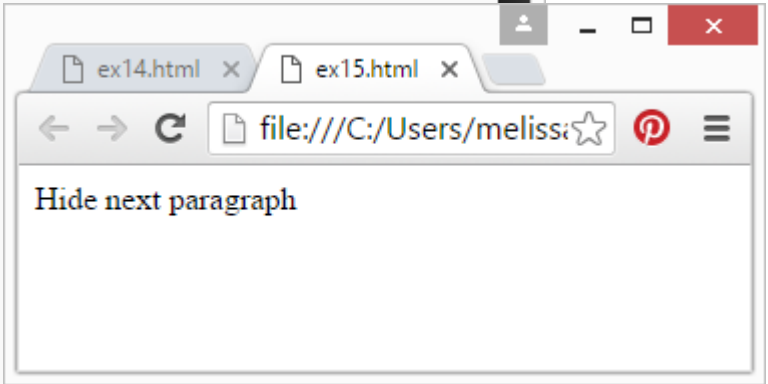
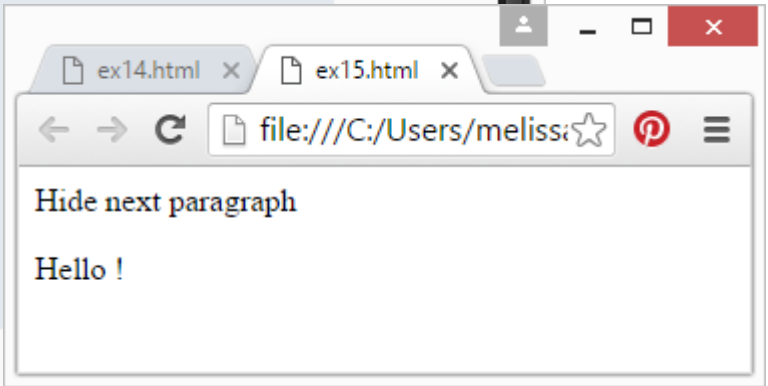
jQuery Events – more ...

- http://www.w3schools.com/jquery/jquery_events.asp
 - Test yourself with Exercises 1 - 5

Showing and Hiding Elements with jQuery

```
$("#myElement").hide("slow", function() {  
    // do something once the element is hidden  
})  
  
$("#myElement").show("fast", function() {  
    // do something once the element is shown  
})  
  
$("#myElement").toggle(1000, function() {  
    // do something once the element is shown/hidden  
})
```

```
C:\Users\melissa\Dropbox (Tecgraf)\Melissa-Tecgraf\Treinamento\20161-INF1802\conteudo\Aulas\05-Javascript\exercicios\j...
File Edit Selection Find View Goto Tools Project Preferences Help
ex14.html x ex15.html x
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4
5 <script src="jquery.min.js"></script>
6
7 <script>
8     $(document).ready(function() {
9         $("#par1").click(function(){
10             $("#par2").hide();
11         });
12
13     });
14 </script>
15
16
17 </head>
18 <body>
19
20 <p id="par1">Hide next paragraph</p>
21 <p id="par2">Hello !</p>
22
23
24 </body>
25 </html>
```



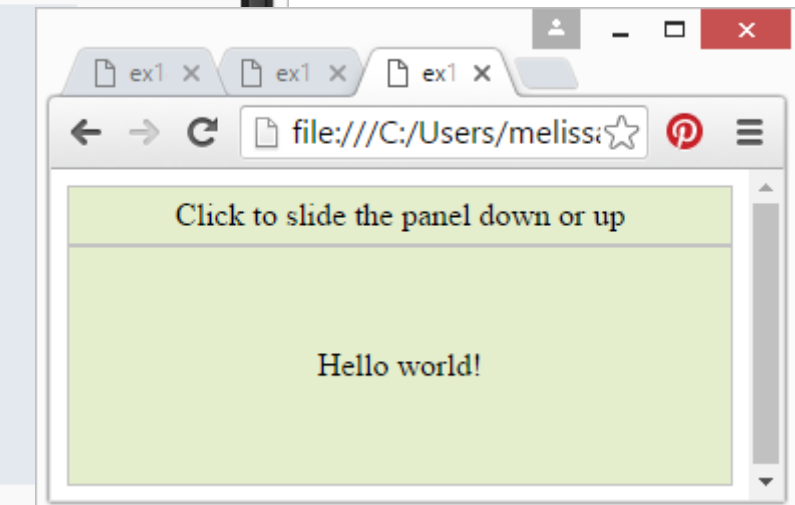
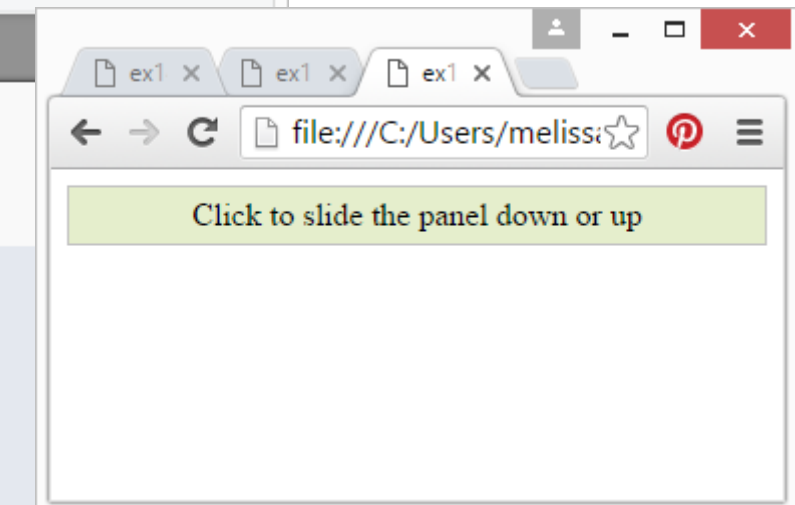
jQuery Showing and Hiding – more ...

- http://www.w3schools.com/jquery/jquery_hide_show.asp
 - Test yourself with Exercises 1 - 4

jQuery Animations and Effects

```
$("#myElement").slideDown("fast", function() {  
    // do something when slide down is finished  
})  
  
$("#myElement").slideUp("slow", function() {  
    // do something when slide up is finished  
})  
  
$("#myElement").slideToggle(1000, function() {  
    // do something when slide up/down is finished  
})
```

```
ex17.html
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
4 <script src="jquery.min.js"></script>
5 <script>
6 $(document).ready(function(){
7     $("#flip").click(function(){
8         $("#panel").slideToggle("slow");
9     });
10 });
11 </script>
12
13 <style>
14 #panel, #flip {
15     padding: 5px;
16     text-align: center;
17     background-color: #e5eccc;
18     border: solid 1px #c3c3c3;
19 }
20 #panel {
21     padding: 50px;
22     display: none;
23 }
24 </style>
25 </head>
26 <body>
27 <div id="flip">Click to slide the panel down or up</div>
28 <div id="panel">Hello world!</div>
29 </body>
30 </html>
```



jQuery Animations and Effects – more ...

- http://www.w3schools.com/jquery/jquery_slide.asp
 - Test yourself with Exercises 1 - 4