Web Application Development

jQuery

jQuery

- jQuery is a fast and concise JavaScript Library created by John ***Resig in 2006*** with a nice motto: Write less, do more.

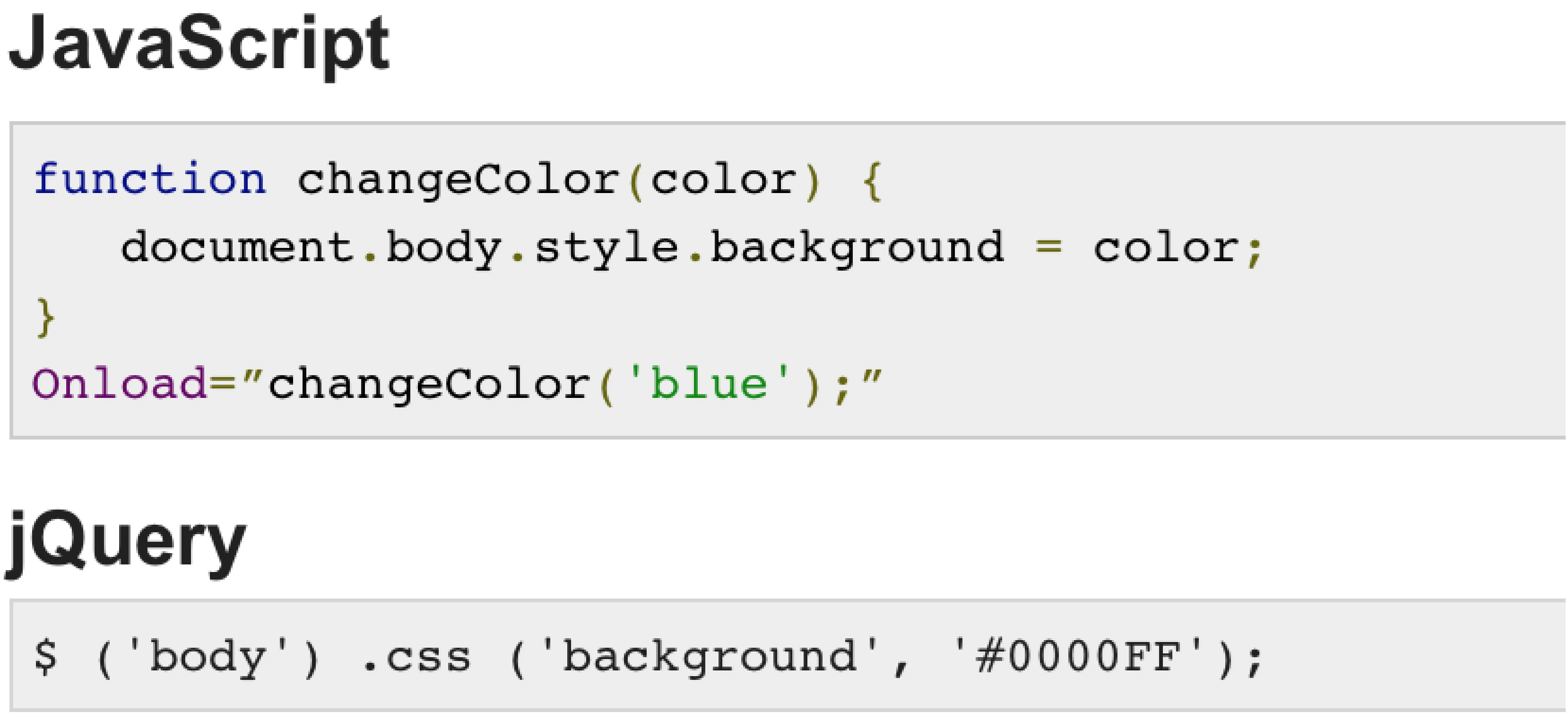
- The purpose of jQuery is to make it much easier to use JavaScript on your website.

- jQuery simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development.

Why use jQuery when we have Javascript?

- Simplicity
- Browser Compatibility
- Fast and Efficient
- Small code length
- Advance animations
- SEO friendly

jQuery vs. Javascript Example



JavaScript

```
function changeColor(color) {
    document.body.style.background = color;
}
Onload=”changeColor('blue');”
```

jQuery

```
$ ('body') .css ('background', '#0000FF');
```

jQuery

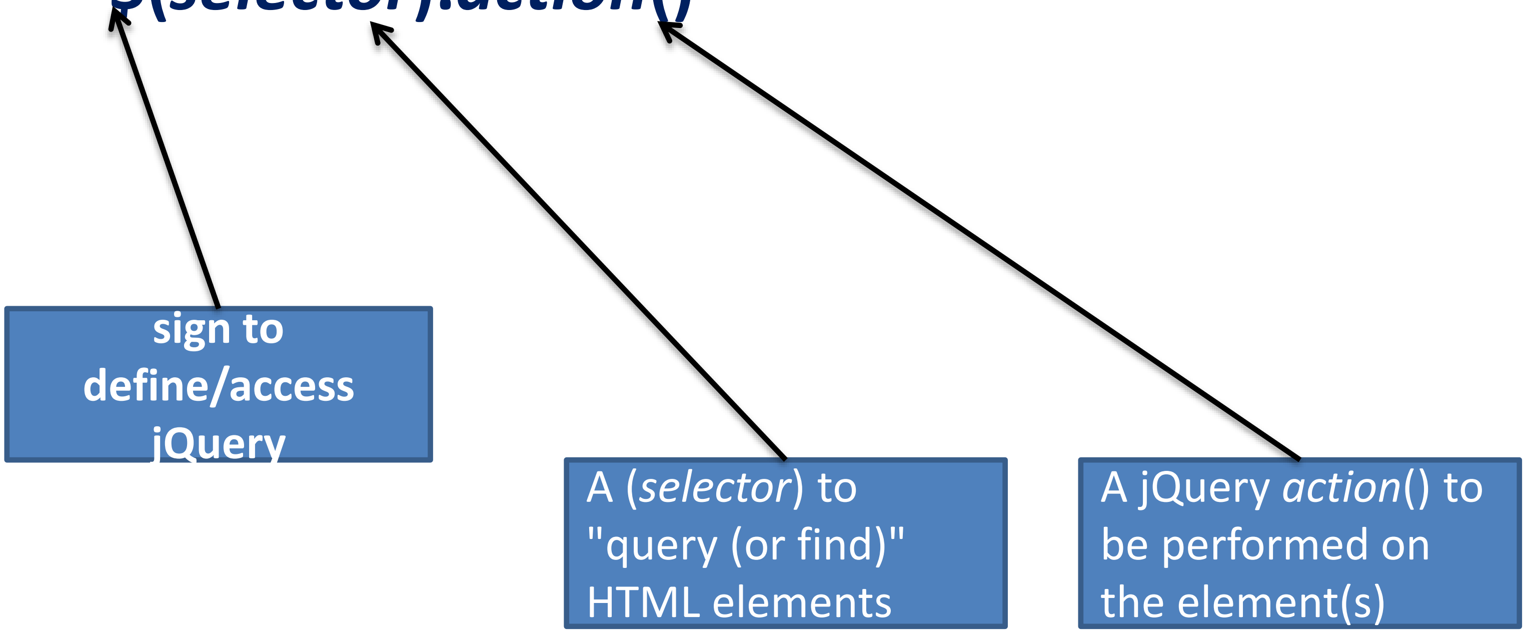
```
<head>
<script src="jquery-3.3.1.min.js"></script>
</head>
```

- Above lines are used to import or bring in scope the Jquery

- Once Jquery is in the scope then you can use it to manipulate the HTML document.

jQuery

- JQuery Simple Syntax
  - ***$(selector).action()***



sign to define/access jQuery

A (*selector*) to "query (or find)" HTML elements

A jQuery *action*() to be performed on the element(s)

jQuery

- Examples:
  - $(this).hide() - hides the current element.
  - $("p").hide() - hides all <p> elements.
  - $(".test").hide() - hides all elements with class="test".
  - $("#test").hide() - hides the element with id="test".

jQuery

- It is advised to write all Jquery code inside **`$(document).ready(…)`** function. Example

```
$(document).ready(function(){

   // jQuery methods go here...

});
```

jQuery

```
$(document).ready(function(){
   $("p").hide()
  $(".test").hide()
 });
```

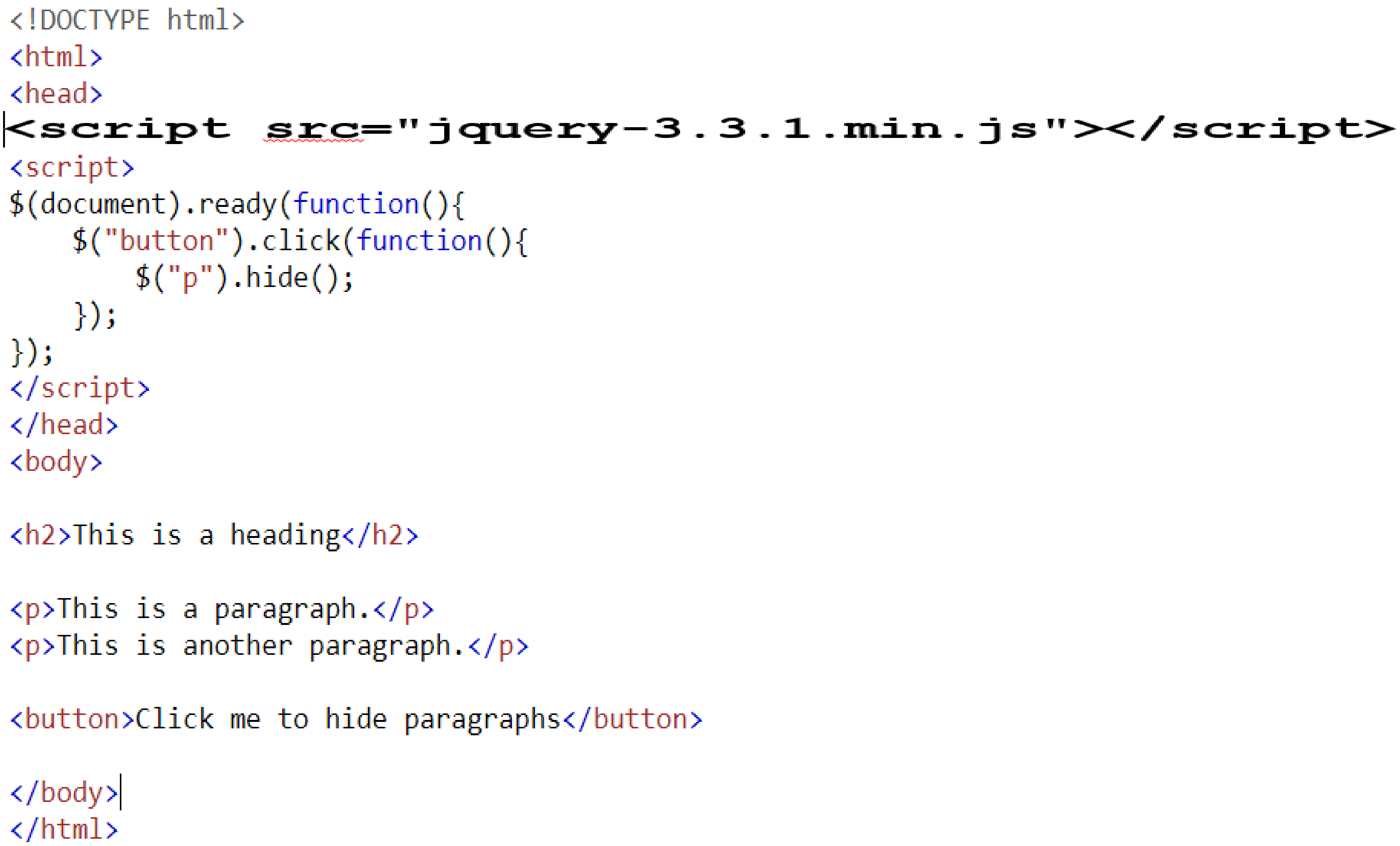
- This is to prevent any jQuery code from running before the document is finished loading (is ready).

- It is good practice to wait for the document to be fully loaded and ready before working with it. This also allows you to have your JavaScript code before the body of your document, in the head section.

jQuery

- jQuery Selectors
  - jQuery selectors allow you to select and manipulate HTML element(s).
  - jQuery selectors are used to "find" (or select) HTML elements based on their name, id, classes, types, attributes, values of attributes and much more. It's based on the existing CSS Selectors, and in addition, it has some own custom selectors.

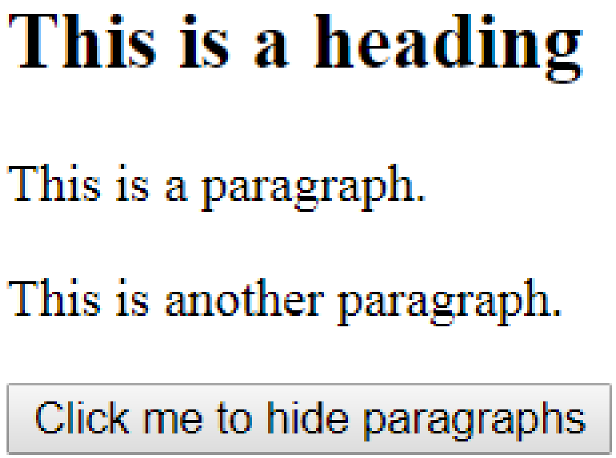
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("p").hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

<button>Click me to hide paragraphs</button>

</body>
</html>
```

jQuery

- Output
  - Once page loaded

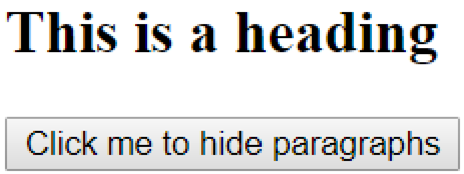


This is a heading

This is a paragraph.

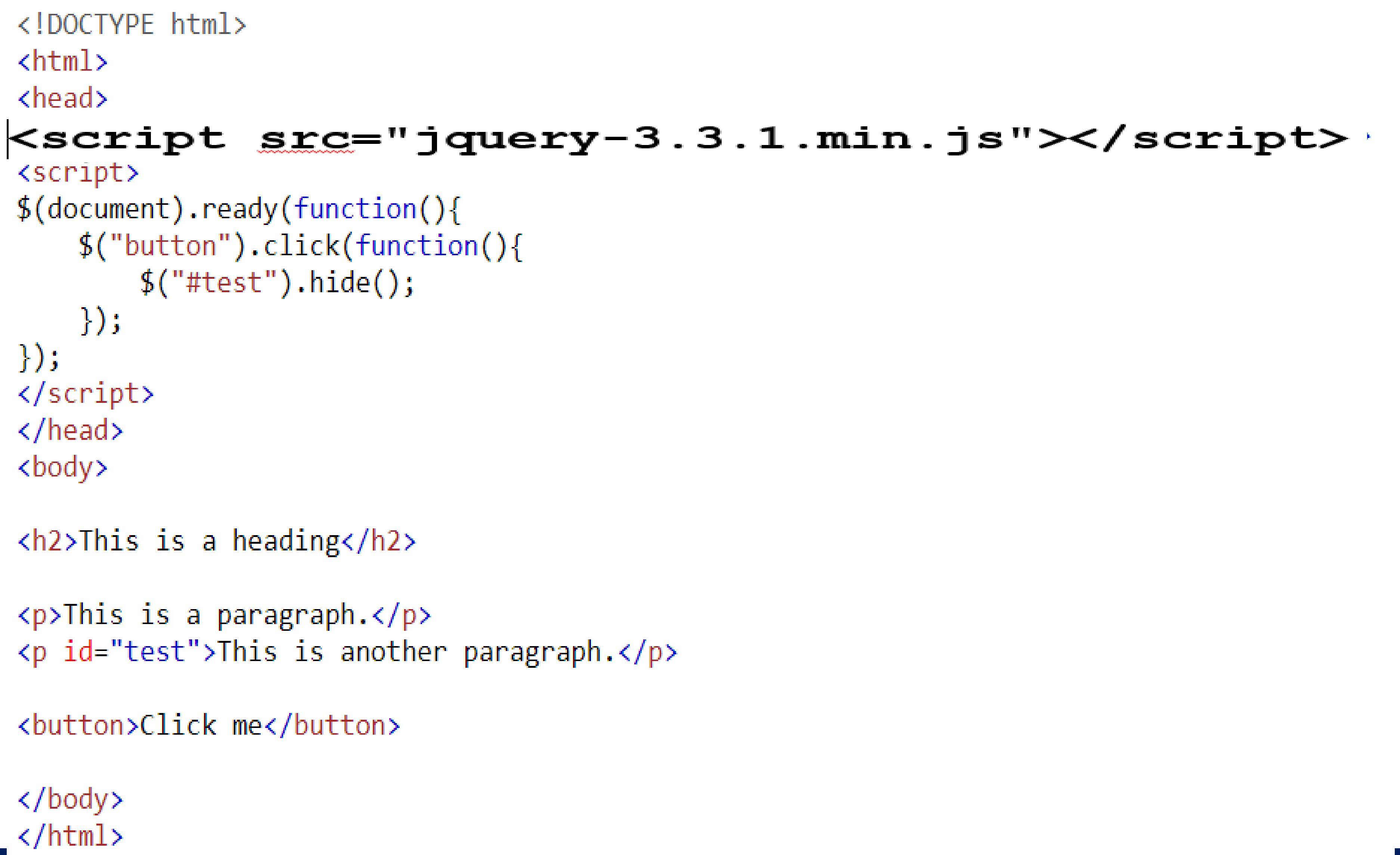
This is another paragraph.

  - Once button clicked



This is a heading

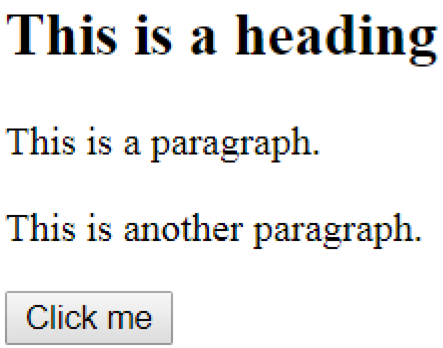
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("#test").hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p id="test">This is another paragraph.</p>

<button>Click me</button>

</body>
</html>
```

jQuery

- Output
  - On page load

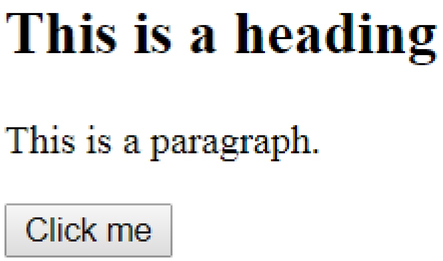


This is a heading

This is a paragraph.

This is another paragraph.

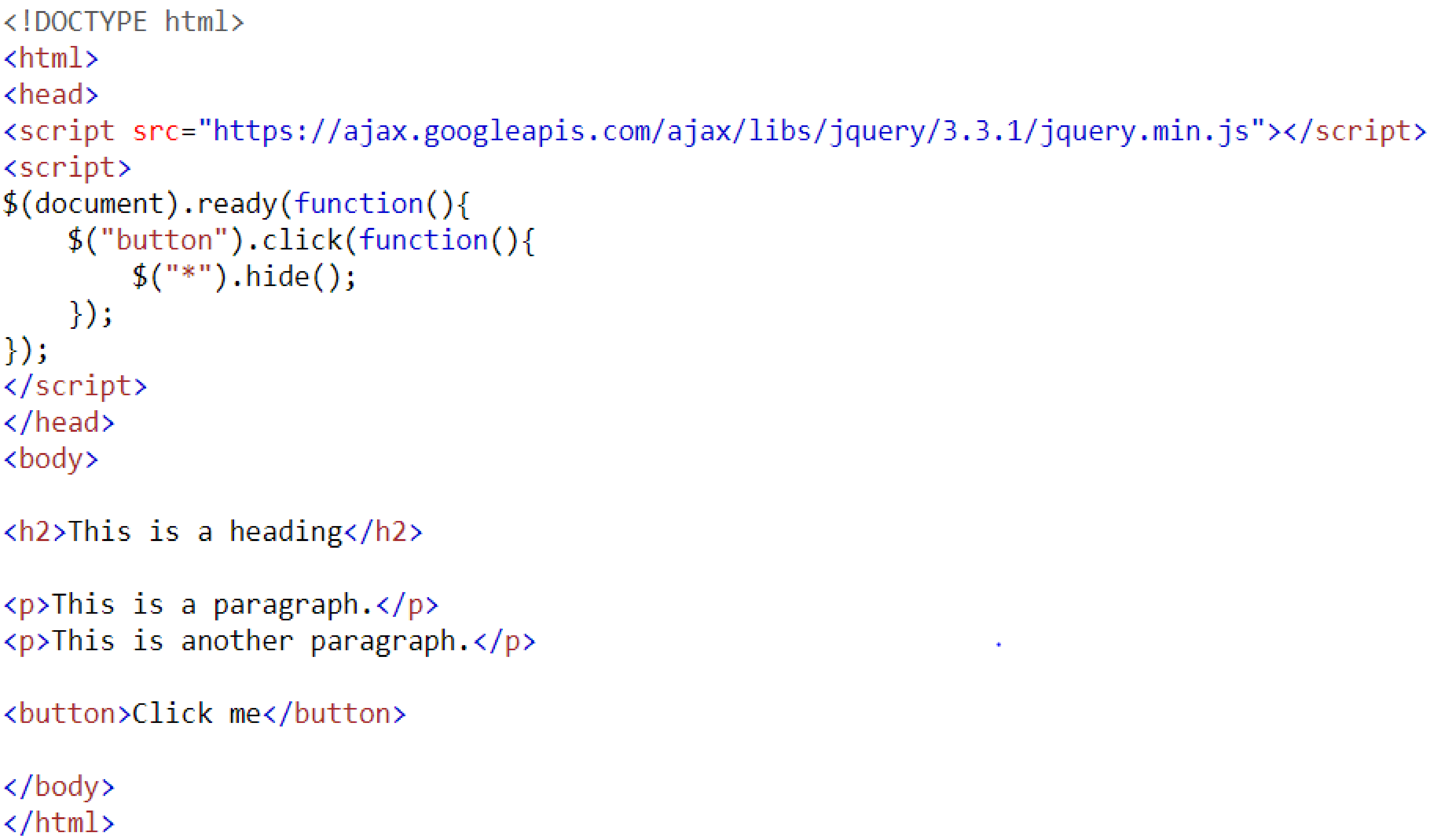
  - On button click



This is a heading

This is a paragraph.

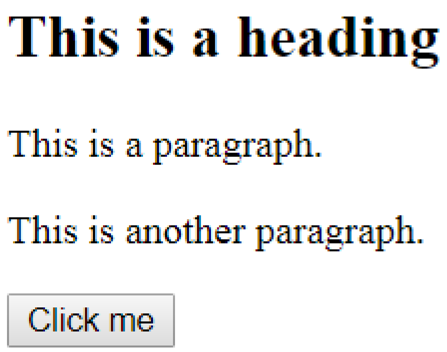
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("*").hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

<button>Click me</button>

</body>
</html>
```

jQuery

- Output
  - On load



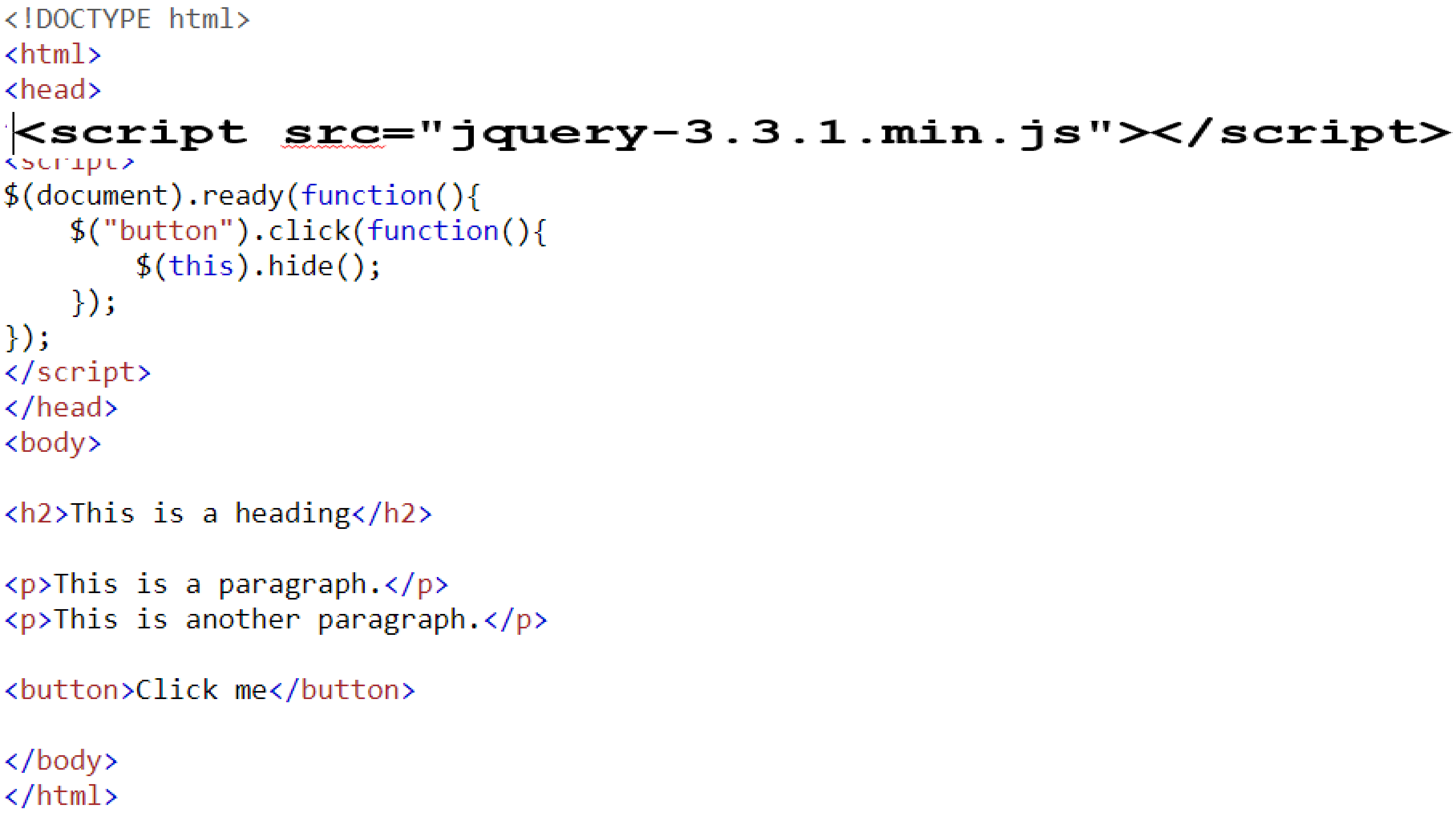
This is a heading

This is a paragraph.

This is another paragraph.

  - On click

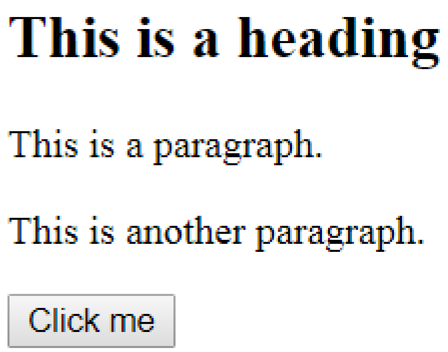
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $(this).hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

<button>Click me</button>

</body>
</html>
```

jQuery

- Output
  - On Load

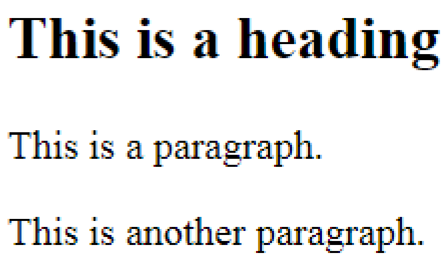


This is a heading

This is a paragraph.

This is another paragraph.

  - On click

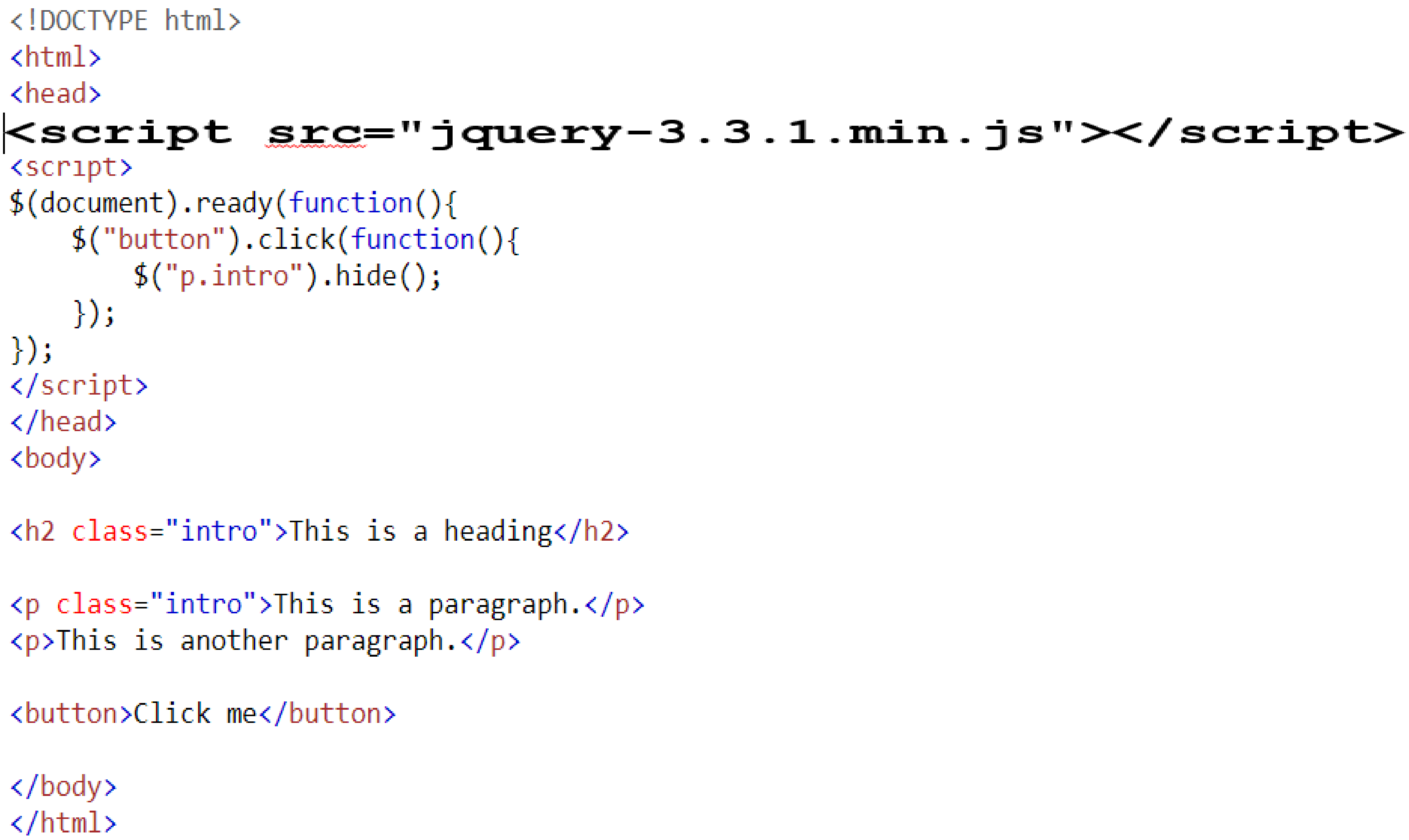


This is a heading

This is a paragraph.

This is another paragraph.

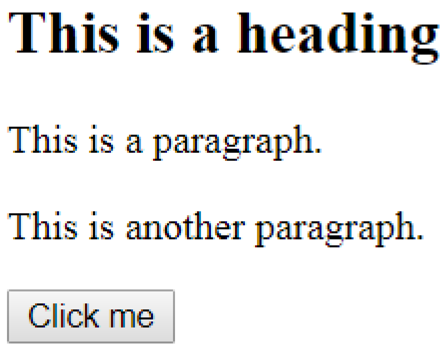
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("p.intro").hide();
    });
});
</script>
</head>
<body>

<h2 class="intro">This is a heading</h2>

<p class="intro">This is a paragraph.</p>
<p>This is another paragraph.</p>

<button>Click me</button>

</body>
</html>
```

jQuery

- Output
  - On Load

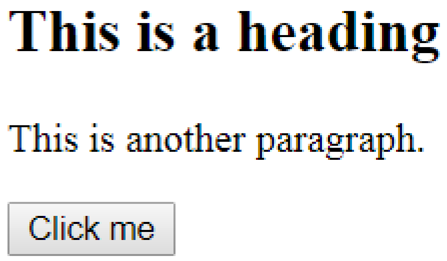


This is a heading

This is a paragraph.

This is another paragraph.

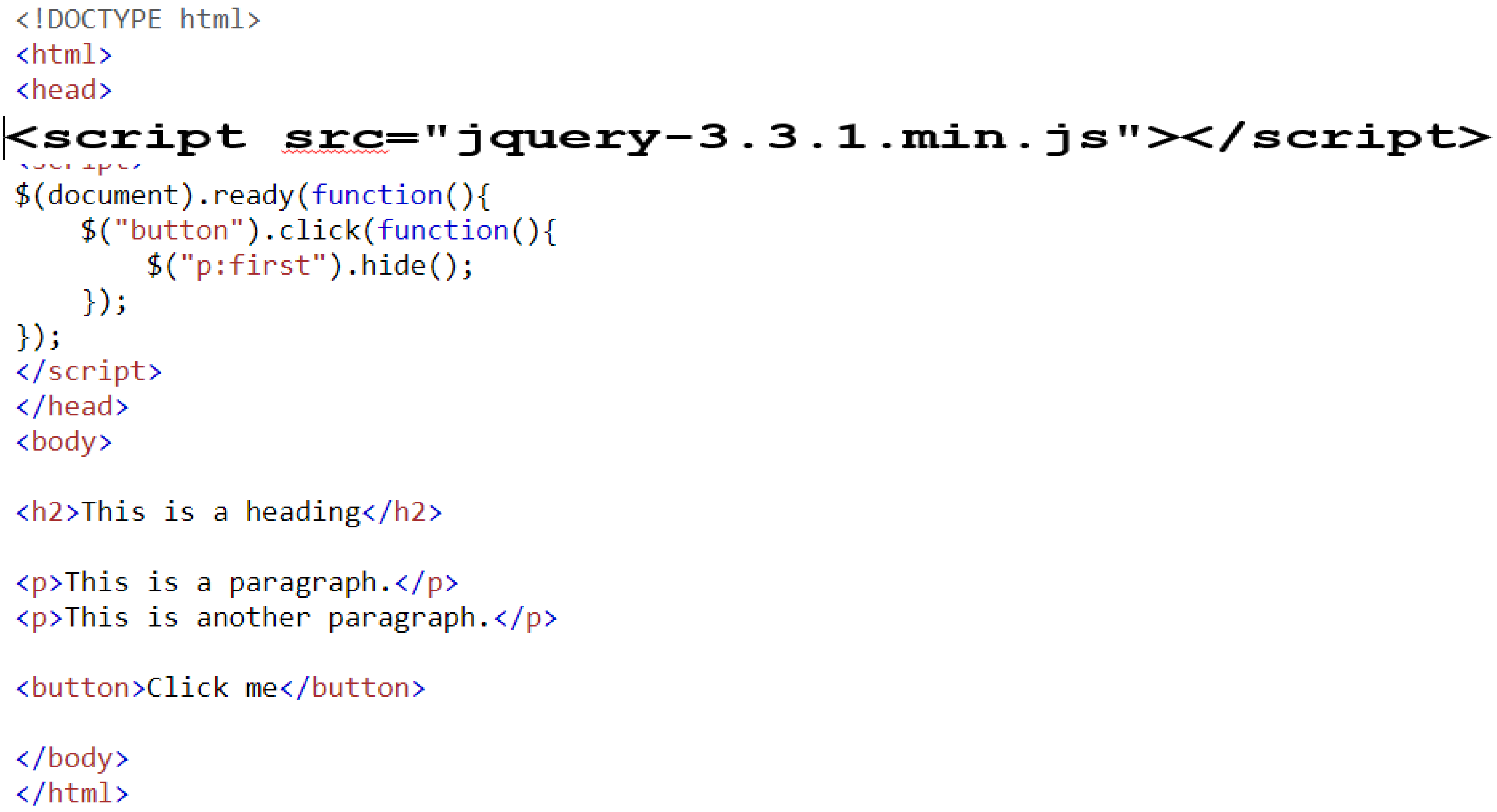
  - On click



This is a heading

This is another paragraph.

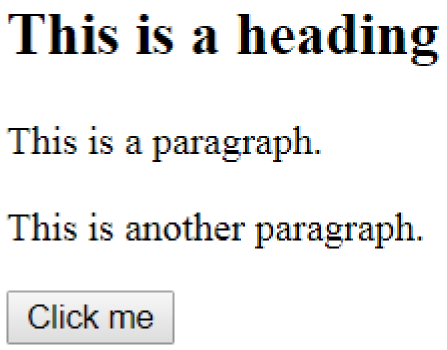
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
<script>
$(document).ready(function(){
    $("button").click(function(){
        $("p:first").hide();
    });
});
</script>
</head>
<body>

<h2>This is a heading</h2>

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

<button>Click me</button>

</body>
</html>
```

jQuery

- Output
  - On Load

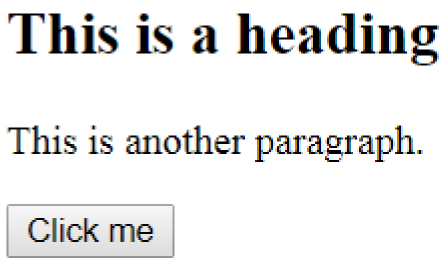


This is a heading

This is a paragraph.

This is another paragraph.

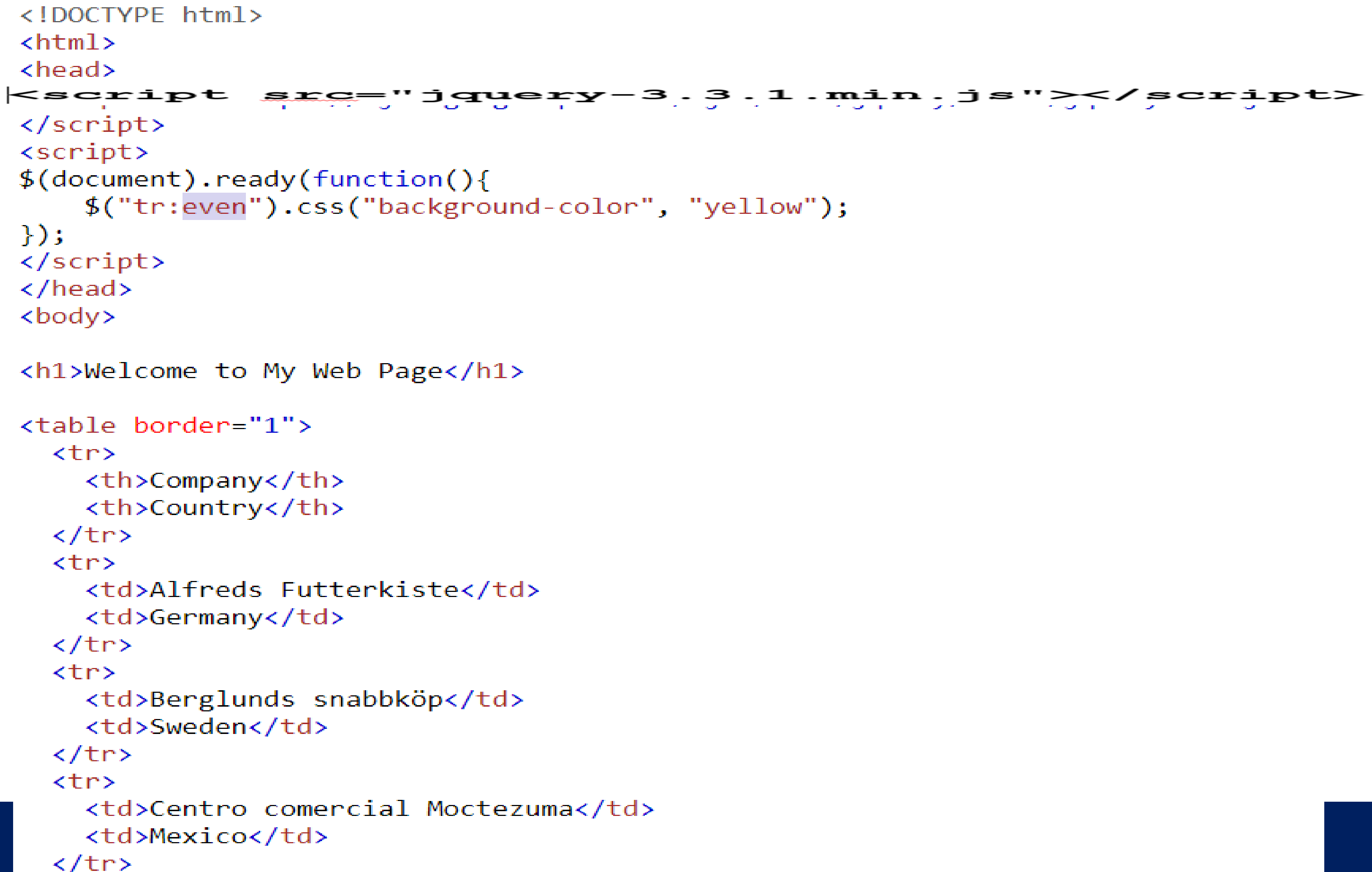
  - On click



This is a heading

This is another paragraph.

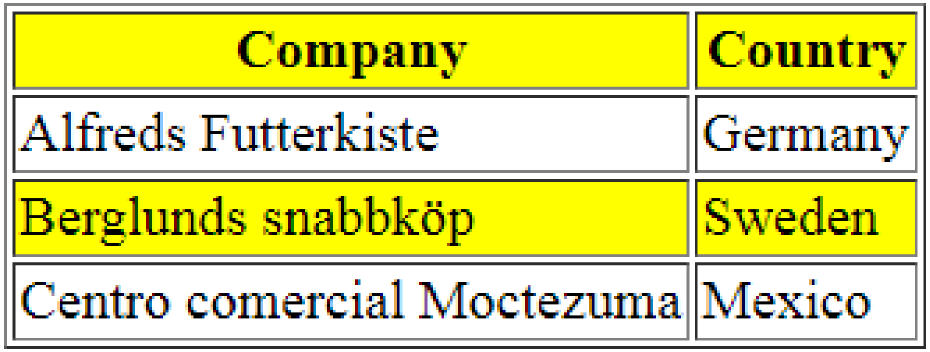
jQuery



```
<!DOCTYPE html>
<html>
<head>
<script src="jquery-3.3.1.min.js"></script>
</script>
<script>
$(document).ready(function(){
    $("tr:even").css("background-color", "yellow");
});
</script>
</head>
<body>

<h1>Welcome to My Web Page</h1>

<table border="1">
  <tr>
    <th>Company</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Berglunds snabbköp</td>
    <td>Sweden</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Mexico</td>
  </tr>
```

jQuery

- Output
  - On Load



Company	Country
Alfreds Futterkiste	Germany
Berglunds snabbköp	Sweden
Centro comercial Moctezuma	Mexico

jQuery

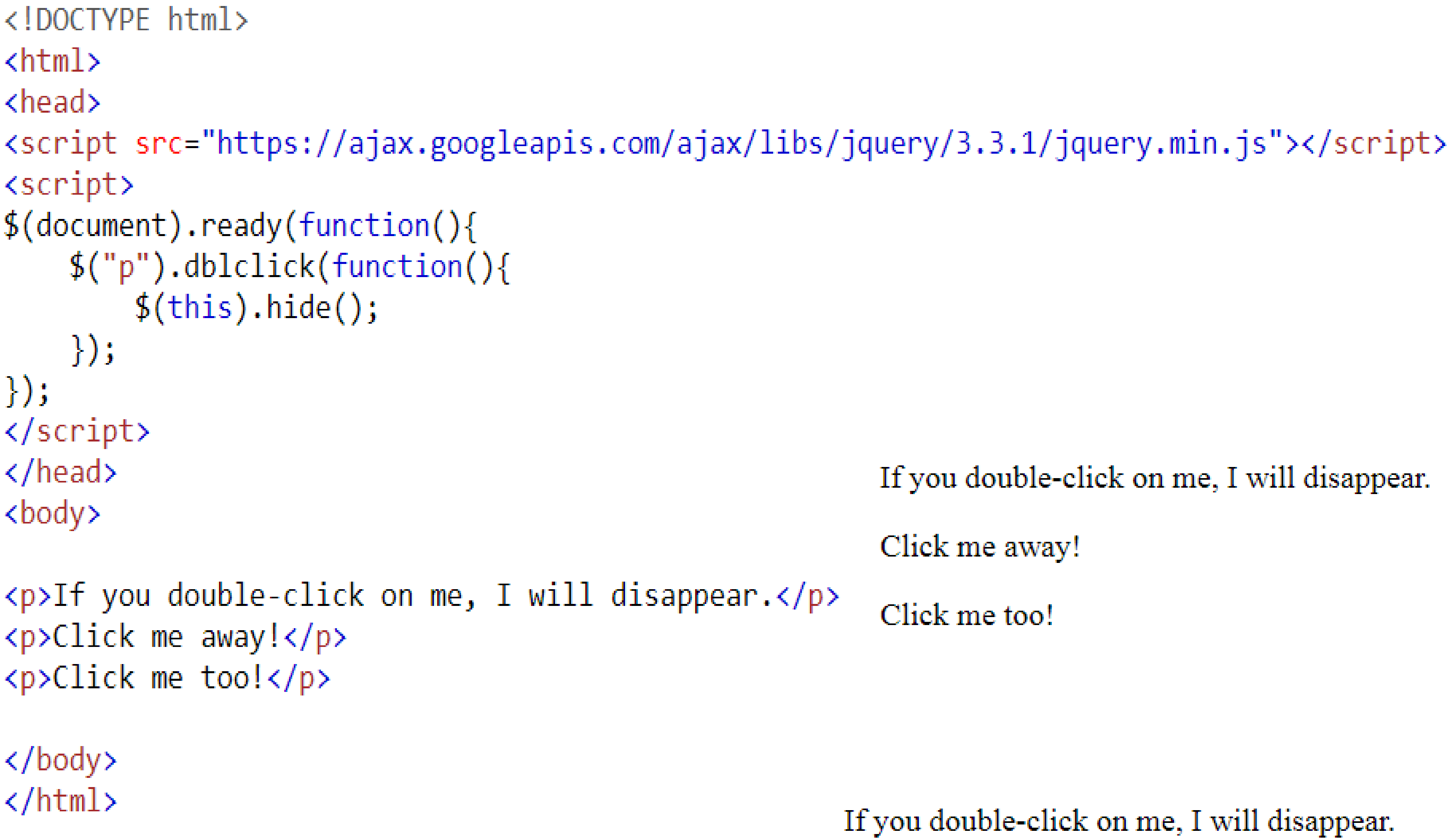
- JQuery Events
  - An event represents the precise moment when something happens.
- Examples:
  - moving a mouse over an element
  - selecting a radio button
  - clicking on an element

jQuery

- **JQuery Events**
  - **Example of some common events**

Mouse Events	Keyboard Events	Form Events	Document/Window Events
click	keypress	submit	load
dblclick	keydown	change	resize
mouseenter	keyup	focus	scroll
mouseleave		blur	unload

jQuery



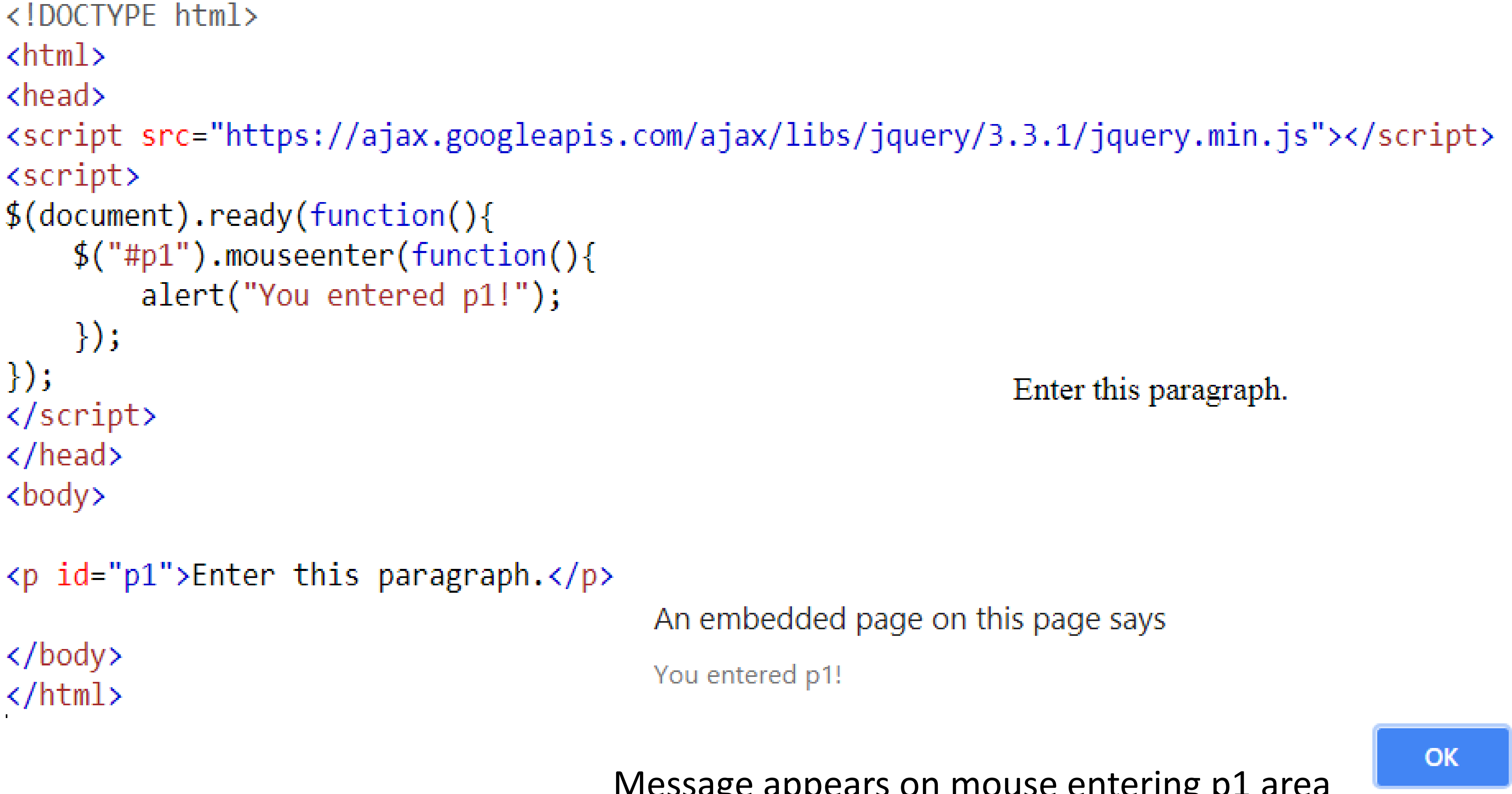
```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("p").dblclick(function(){
        $(this).hide();
    });
});
</script>
</head>
<body>

<p>If you double-click on me, I will disappear.</p>
<p>Click me away!</p>
<p>Click me too!</p>

</body>
</html>
```

```
If you double-click on me, I will disappear.

Click me away!

Click me too!
```

```
If you double-click on me, I will disappear.
```

jQuery

- Mouse enter event



```html
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("#p1").mouseenter(function(){
        alert("You entered p1!");
    });
});
</script>
</head>
<body>

<p id="p1">Enter this paragraph.</p>

</body>
</html>
```

Enter this paragraph.

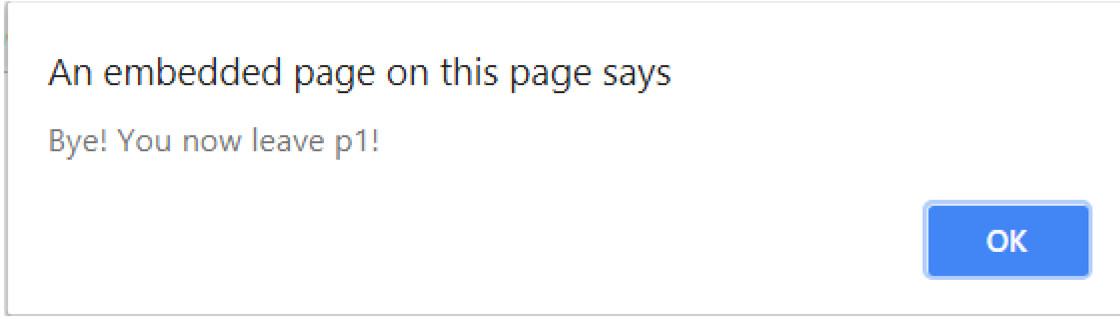
An embedded page on this page says

You entered p1!

Message appears on mouse entering p1 area

jQuery

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("#p1").mouseleave(function(){
        alert("Bye! You now leave p1!");
    });
});
</script>
</head>
<body>

<p id="p1">This is a paragraph.</p>

</body>
</html>
```



An embedded page on this page says

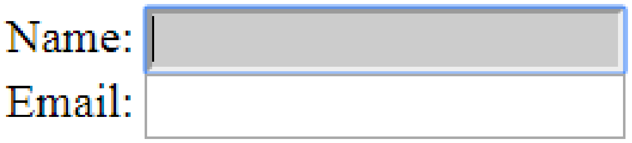
Bye! You now leave p1!

Message appears on mouse leaving p1 area

jQuery

- On focus

```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("input").focus(function(){
        $(this).css("background-color", "#cccccc");
    });
    $("input").blur(function(){
        $(this).css("background-color", "#ffffff");
    });
});
</script>
</head>
<body>

Name: <input type="text" name="fullname"><br>
Email: <input type="text" name="email">

</body>
</html>
```

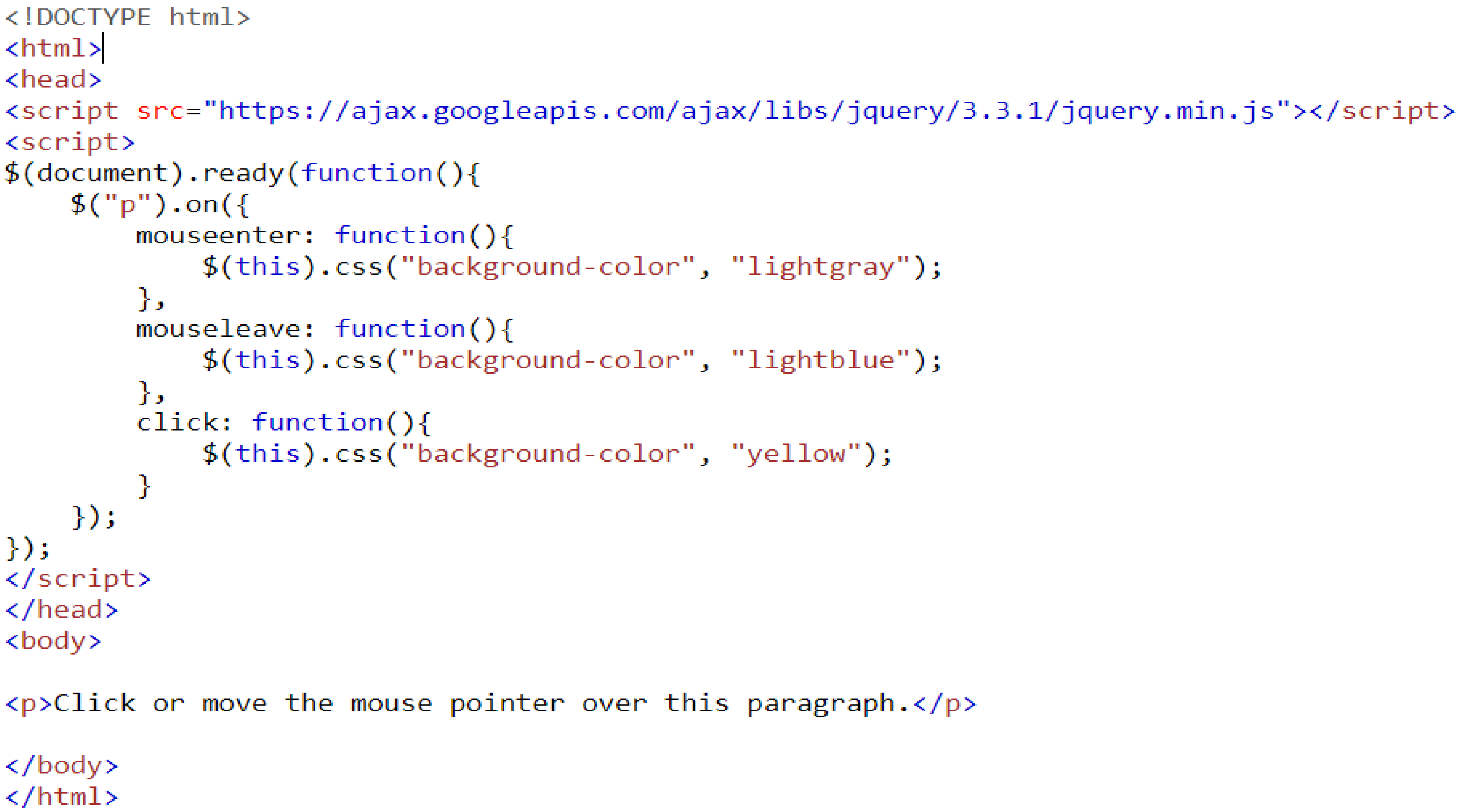


Name:

Email:

jQuery

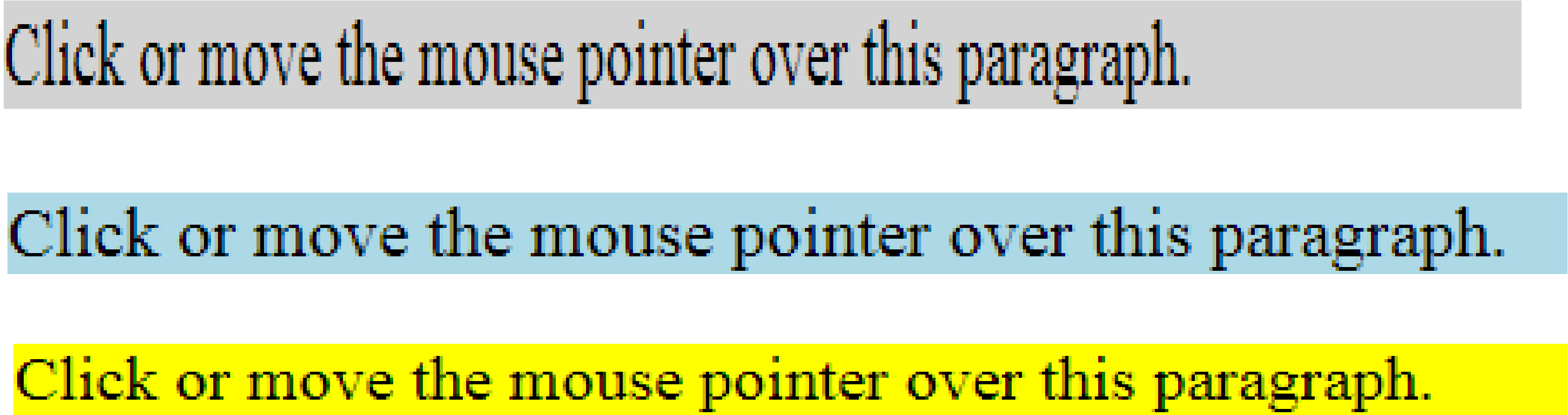
- On event



```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
    $("p").on({
        mouseenter: function(){
            $(this).css("background-color", "lightgray");
        },
        mouseleave: function(){
            $(this).css("background-color", "lightblue");
        },
        click: function(){
            $(this).css("background-color", "yellow");
        }
    });
});
</script>
</head>
<body>

<p>Click or move the mouse pointer over this paragraph.</p>

</body>
</html>
```

jQuery

- Output



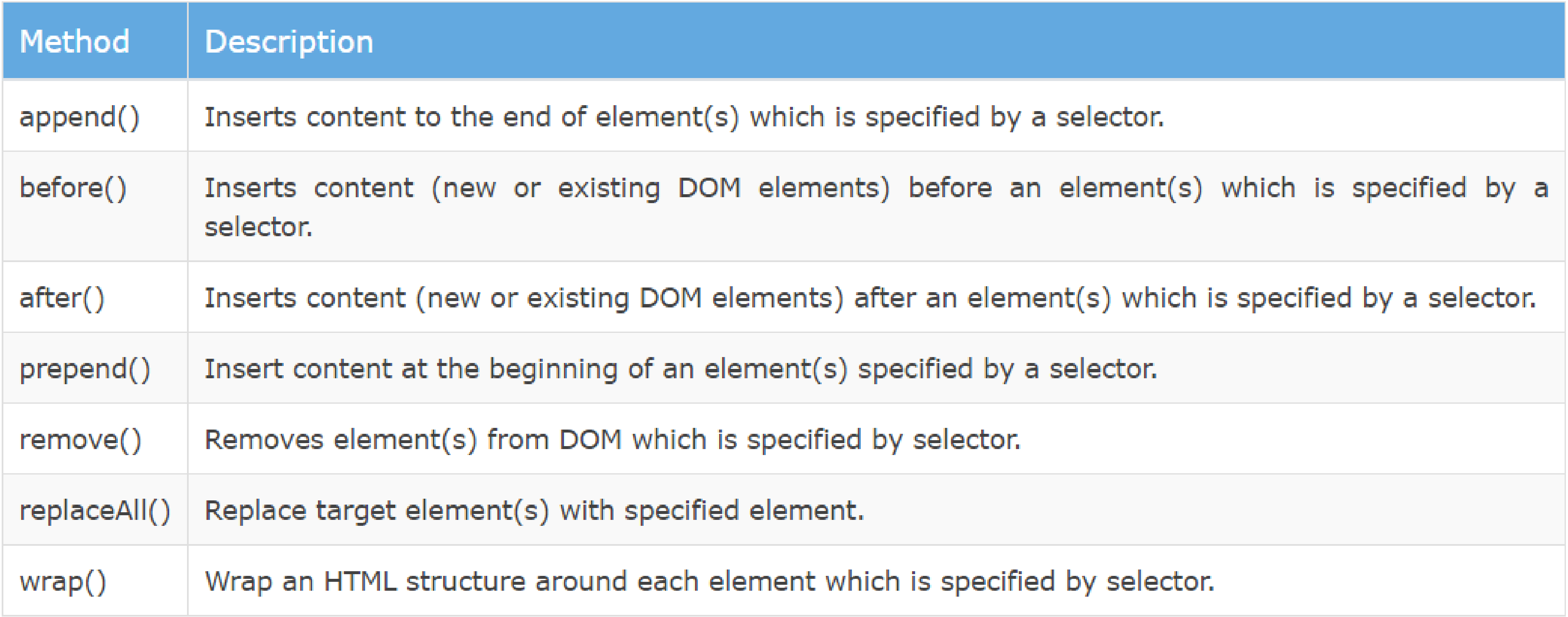
```
Click or move the mouse pointer over this paragraph.

Click or move the mouse pointer over this paragraph.

Click or move the mouse pointer over this paragraph.
```

jQuery

- jQuery DOM Manipulation
  - DOM stands for document object model e.g. the html document.
  - jQuery provides various methods to add, edit or delete DOM element(s) in the HTML page.
  - jQuery has ability to manipulate the html document such as adding any new portion to the html document e.g. adding a <p> …</p> tag to the html document at run time.

DOM Manipulation Methods in jQuery

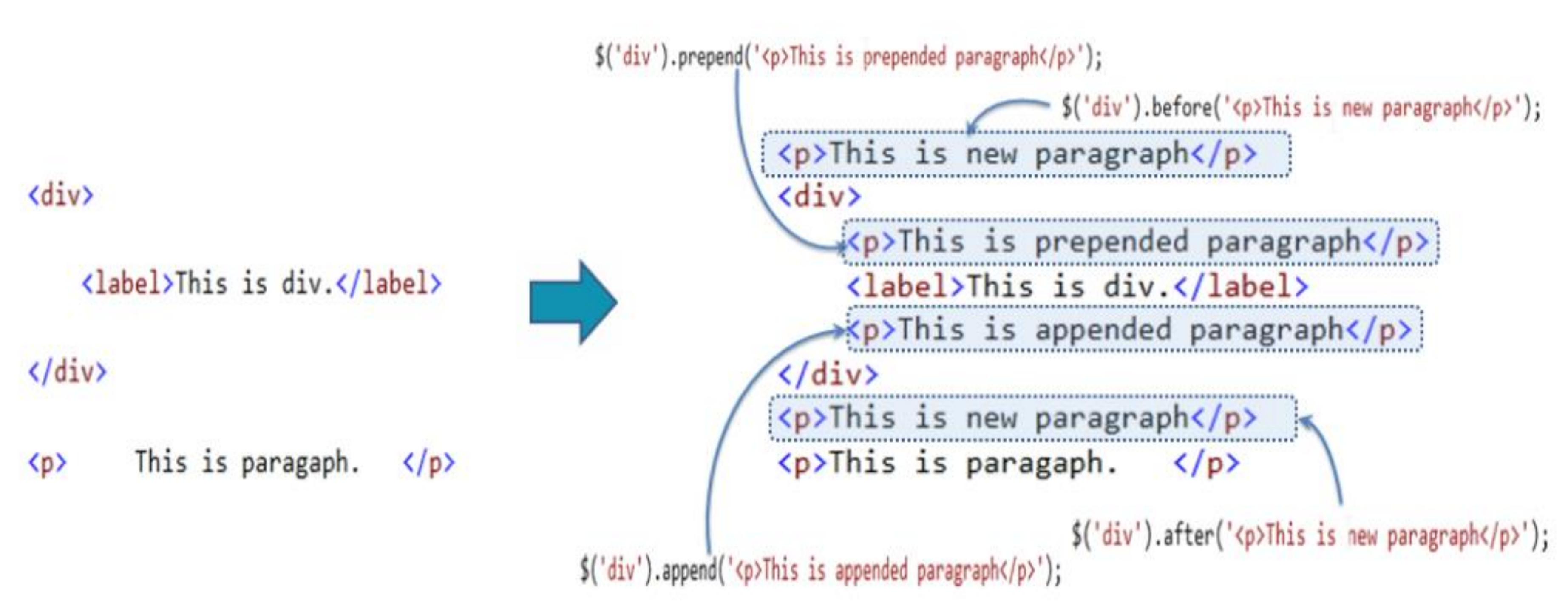
- The following table lists some important methods to add/remove new DOM elements.



Method	Description
append()	Inserts content to the end of element(s) which is specified by a selector.
before()	Inserts content (new or existing DOM elements) before an element(s) which is specified by a selector.
after()	Inserts content (new or existing DOM elements) after an element(s) which is specified by a selector.
prepend()	Insert content at the beginning of an element(s) specified by a selector.
remove()	Removes element(s) from DOM which is specified by selector.
replaceAll()	Replace target element(s) with specified element.
wrap()	Wrap an HTML structure around each element which is specified by selector.

jQuery

- The following figure shows how the DOM manipulation methods add new elements.



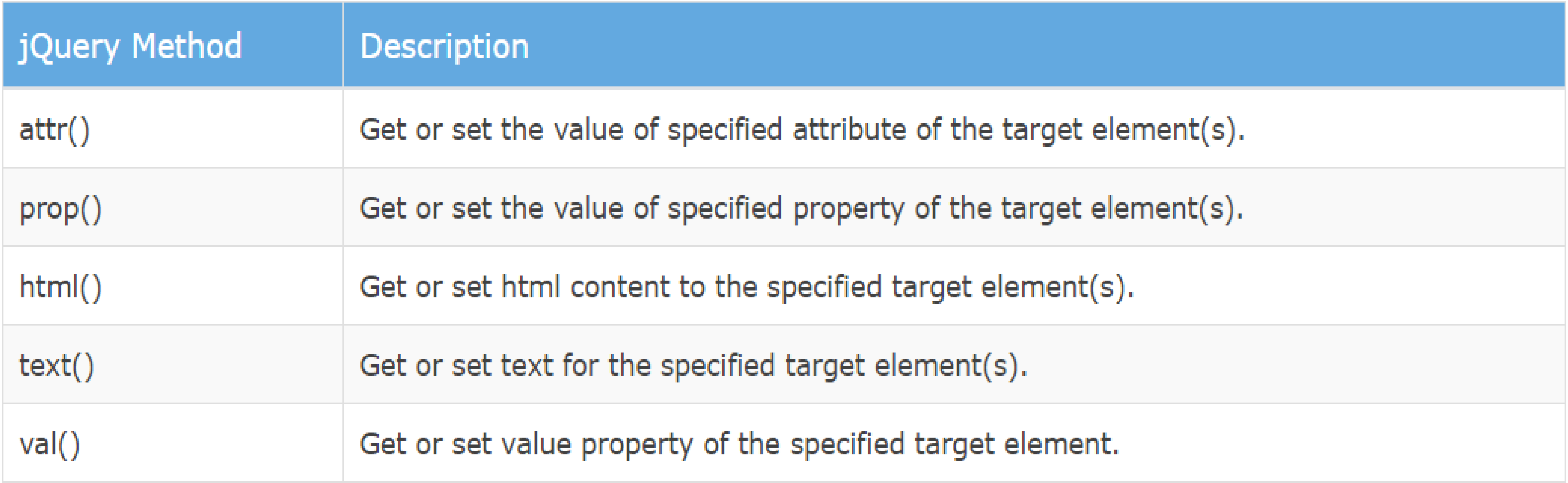
```
<div>

    <label>This is div.</label>

</div>

<p>     This is paragaph.   </p>
```

```
$('div').prepend('<p>This is prepended paragraph</p>');
$('div').before('<p>This is new paragraph</p>');
<p>This is new paragraph</p>
<div>
    <p>This is prepended paragraph</p>
    <label>This is div.</label>
    <p>This is appended paragraph</p>
</div>
<p>This is new paragraph</p>
<p>This is paragaph.   </p>
$('div').after('<p>This is new paragraph</p>');
$('div').append('<p>This is appended paragraph</p>');
```

DOM Manipulation Methods

Manipulate HTML Attributes using jQuery

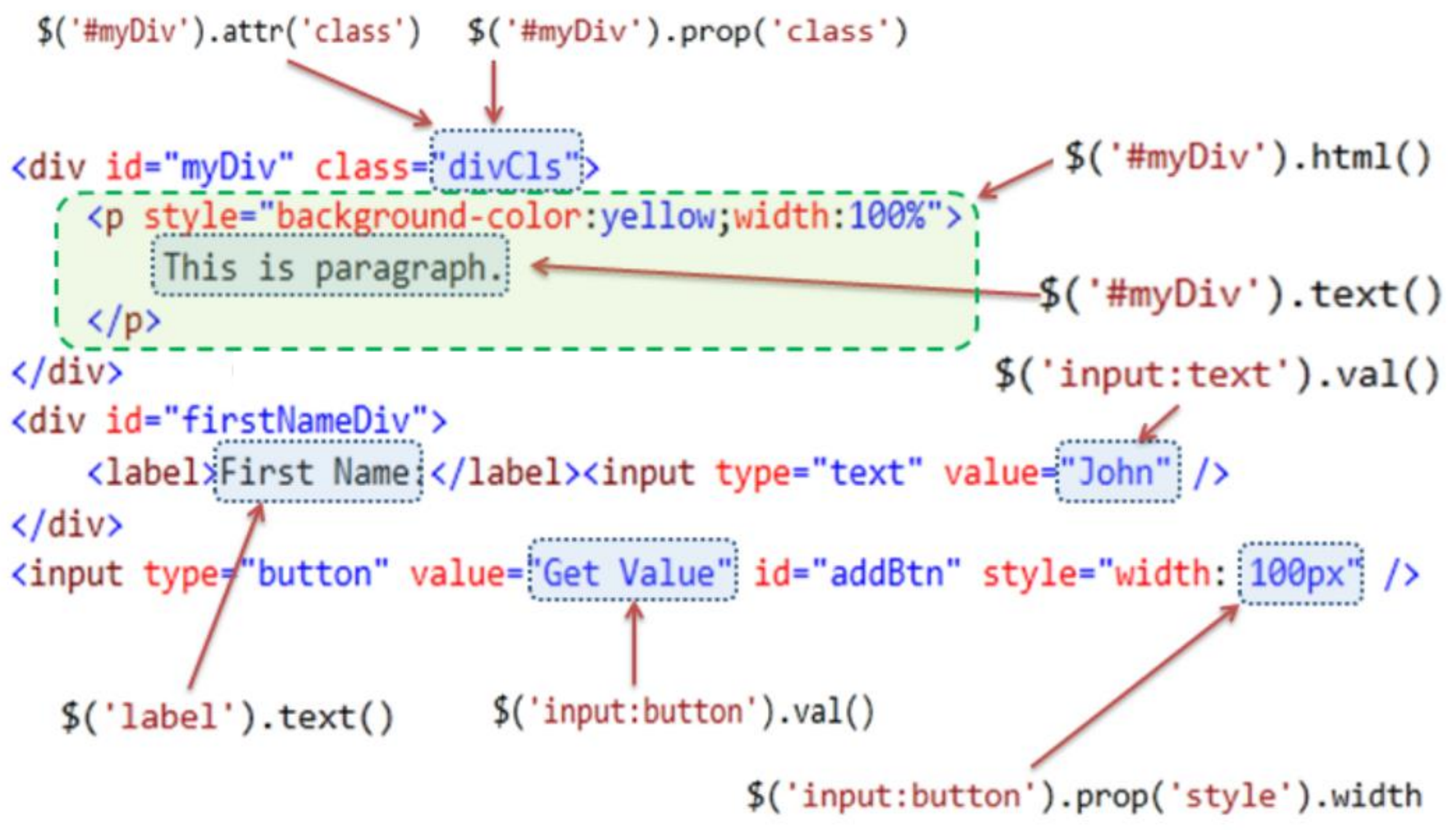
- The following table lists jQuery methods to get or set value of attribute, property, text or html.



jQuery Method	Description
attr()	Get or set the value of specified attribute of the target element(s).
prop()	Get or set the value of specified property of the target element(s).
html()	Get or set html content to the specified target element(s).
text()	Get or set text for the specified target element(s).
val()	Get or set value property of the specified target element.

jQuery

- The following figure shows various jQuery methods to access DOM element's attributes, properties and values.



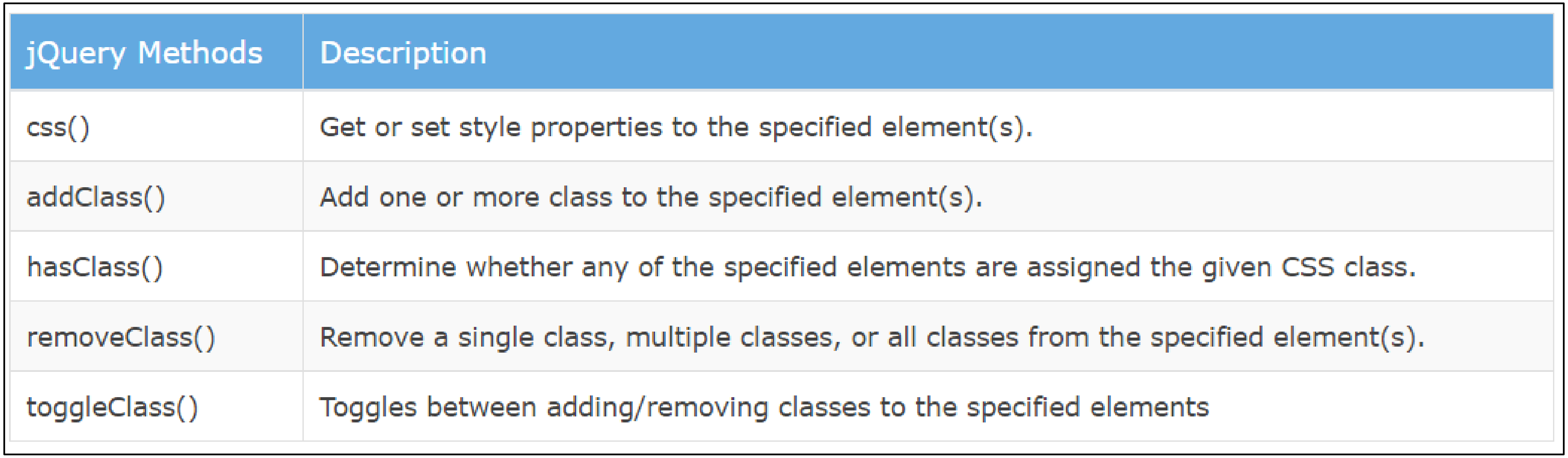
```
<div id="myDiv" class="divCls">
    <p style="background-color:yellow;width:100%">
        This is paragraph.
    </p>
</div>
<div id="firstNameDiv">
    <label>First Name</label><input type="text" value="John" />
</div>
<input type="button" value="Get Value" id="addBtn" style="width: 100px" />
```

```
$('#myDiv').attr('class')
$('#myDiv').prop('class')
$('#myDiv').html()
$('#myDiv').text()
$('input:text').val()
$('label').text()
$('input:button').val()
$('input:button').prop('style').width
```

jQuery Methods to Access Values

CSS Manipulation using jQuery

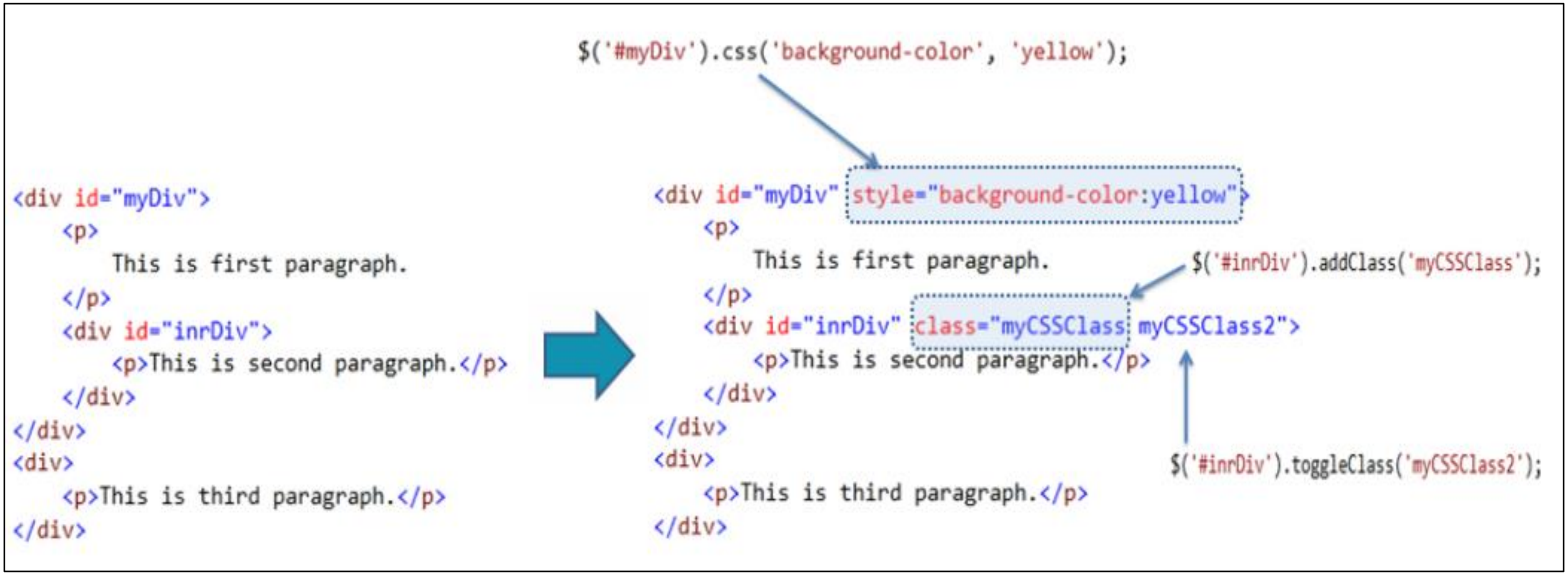
- The jQuery library includes various methods to manipulate style properties and CSS class of DOM element(s).



jQuery Methods	Description
css()	Get or set style properties to the specified element(s).
addClass()	Add one or more class to the specified element(s).
hasClass()	Determine whether any of the specified elements are assigned the given CSS class.
removeClass()	Remove a single class, multiple classes, or all classes from the specified element(s).
toggleClass()	Toggles between adding/removing classes to the specified elements

jQuery

- The following figure shows how jQuery methods changes style and css class of the DOM elements.



```
<div id="myDiv">
    <p>
        This is first paragraph.
    </p>
    <div id="inrDiv">
        <p>This is second paragraph.</p>
    </div>
</div>
<div>
    <p>This is third paragraph.</p>
</div>
```

```
$('#myDiv').css('background-color', 'yellow');
```

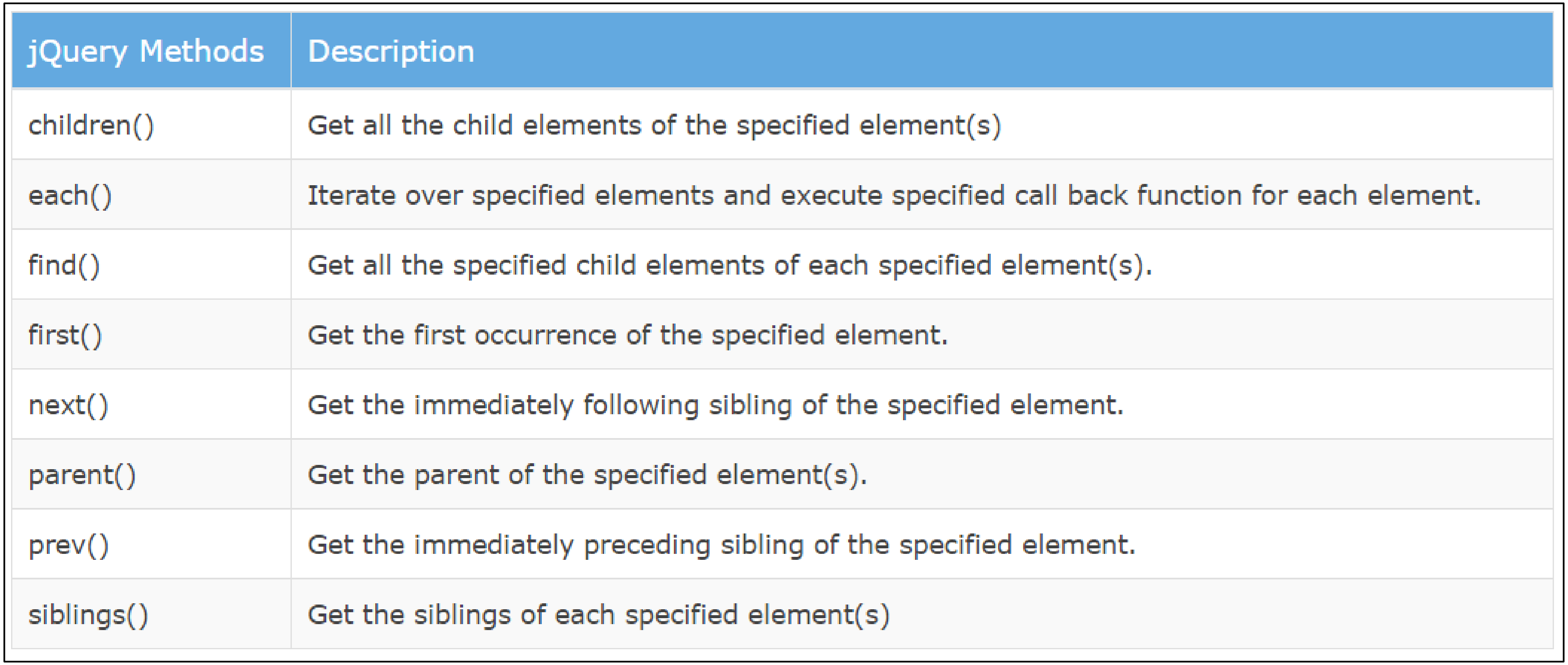
```
<div id="myDiv" style="background-color:yellow">
    <p>
        This is first paragraph.
    </p>
    <div id="inrDiv" class="myCSSClass myCSSClass2">
        <p>This is second paragraph.</p>
    </div>
</div>
<div>
    <p>This is third paragraph.</p>
</div>
```

```
$('#inrDiv').addClass('myCSSClass');
```

```
$('#inrDiv').toggleClass('myCSSClass2');
```

Traversing DOM Elements using jQuery

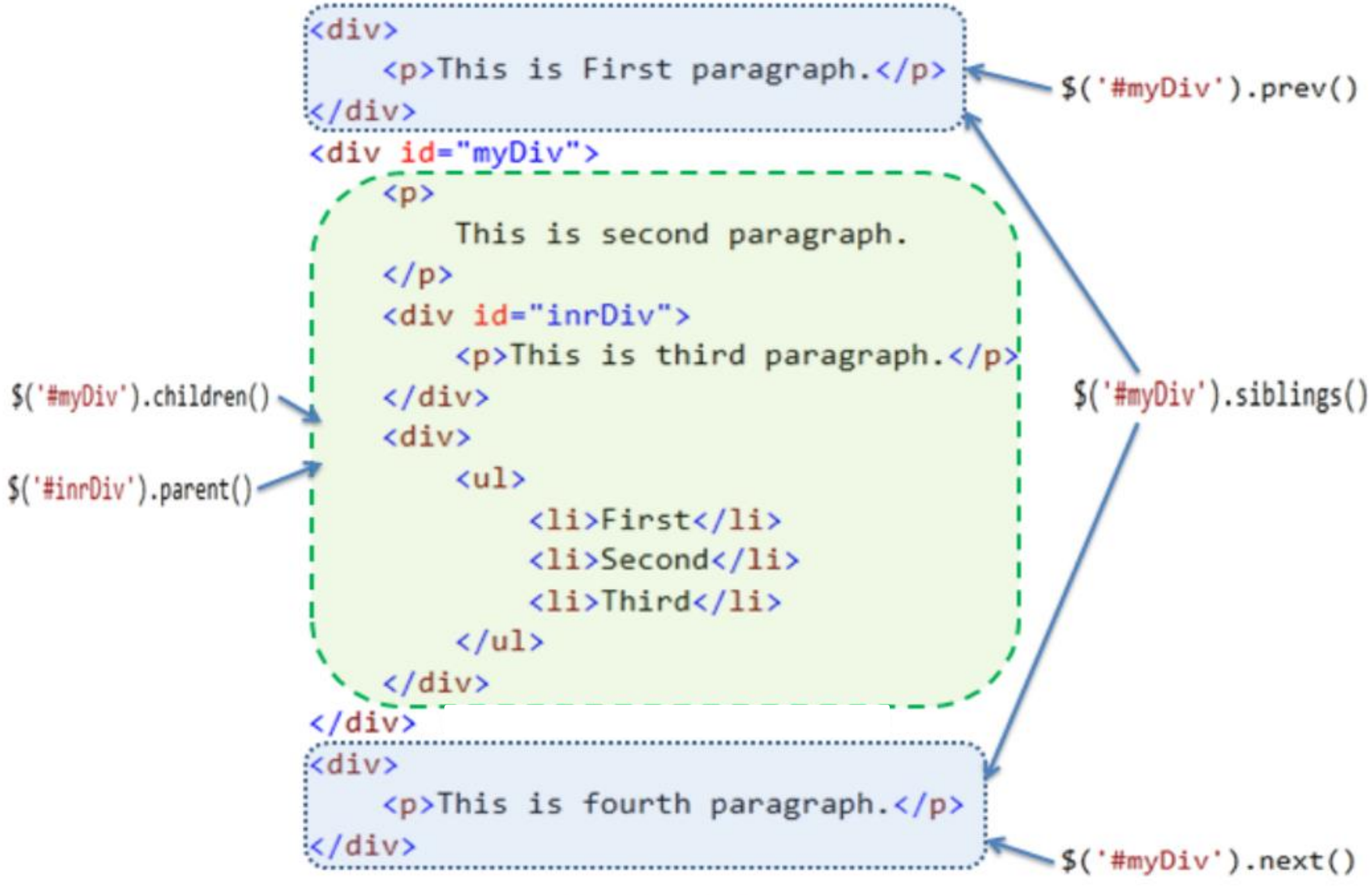
- The jQuery library includes various methods to traverse DOM elements in a DOM hierarchy.



jQuery Methods	Description
children()	Get all the child elements of the specified element(s)
each()	Iterate over specified elements and execute specified call back function for each element.
find()	Get all the specified child elements of each specified element(s).
first()	Get the first occurrence of the specified element.
next()	Get the immediately following sibling of the specified element.
parent()	Get the parent of the specified element(s).
prev()	Get the immediately preceding sibling of the specified element.
siblings()	Get the siblings of each specified element(s)

jQuery

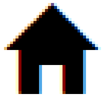
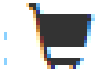
- The following figure shows how the jQuery traversing methods get DOM elements.



```
<div>
    <p>This is First paragraph.</p>
</div>
<div id="myDiv">
    <p>
        This is second paragraph.
    </p>
    <div id="inrDiv">
        <p>This is third paragraph.</p>
    </div>
    <div>
        <ul>
            <li>First</li>
            <li>Second</li>
            <li>Third</li>
        </ul>
    </div>
</div>
<div>
    <p>This is fourth paragraph.</p>
</div>
```

Traversing DOM Elements

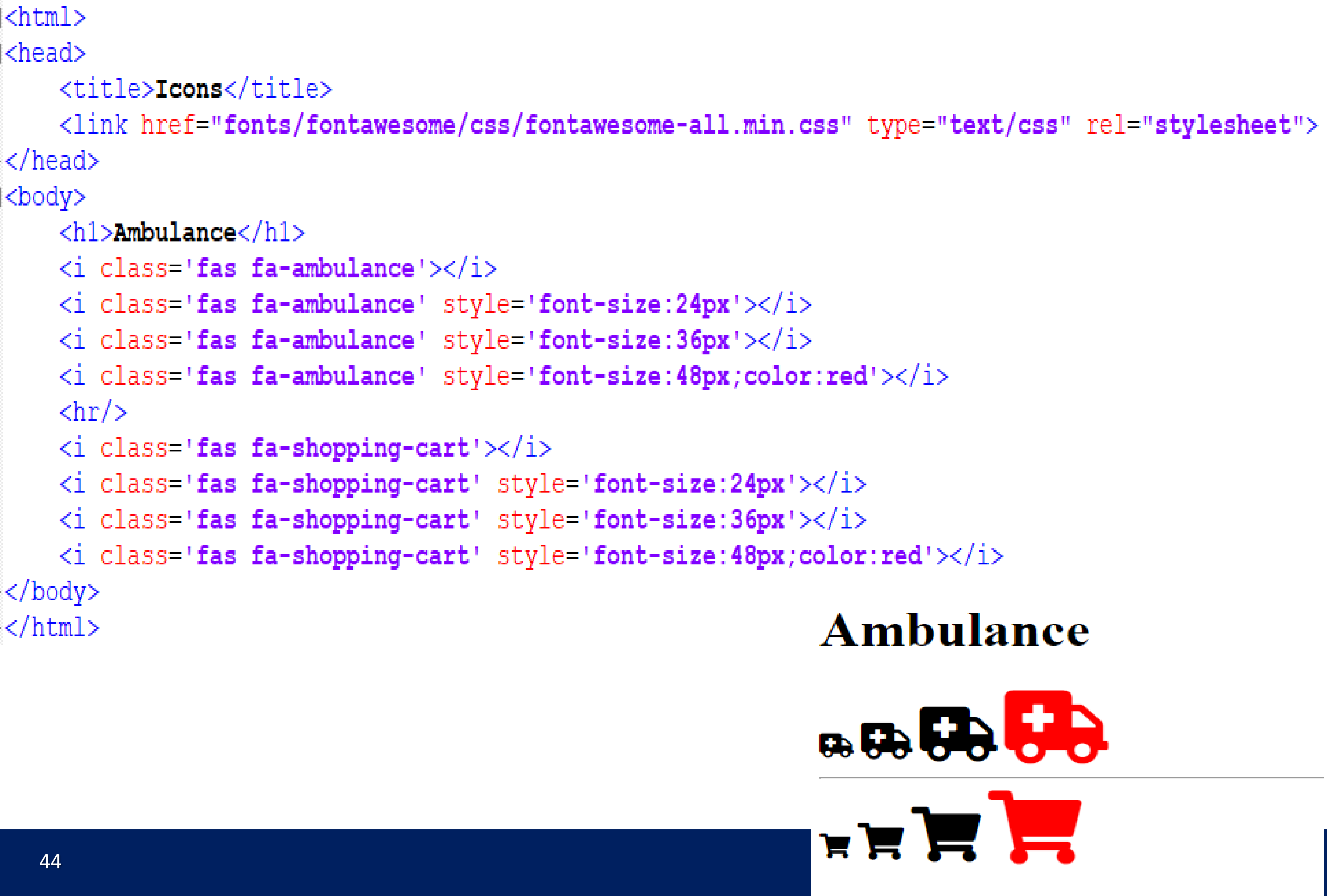
ICON

- What is Icon?
  - An **icon** is a small graphical representation that helps a user to easily understand the concept or thing in a web page.
  - For example
    - Home 
    - Time
    - Store/copy
    - Shopping cart 

Icons

- In order to use icon un your web page, you need to download icon file that contains icons.
  - For reference
    - https://kit.fontawesome.com/a076d05399.js
    - https://github.com/google/material-design-icons/

Icons: Example

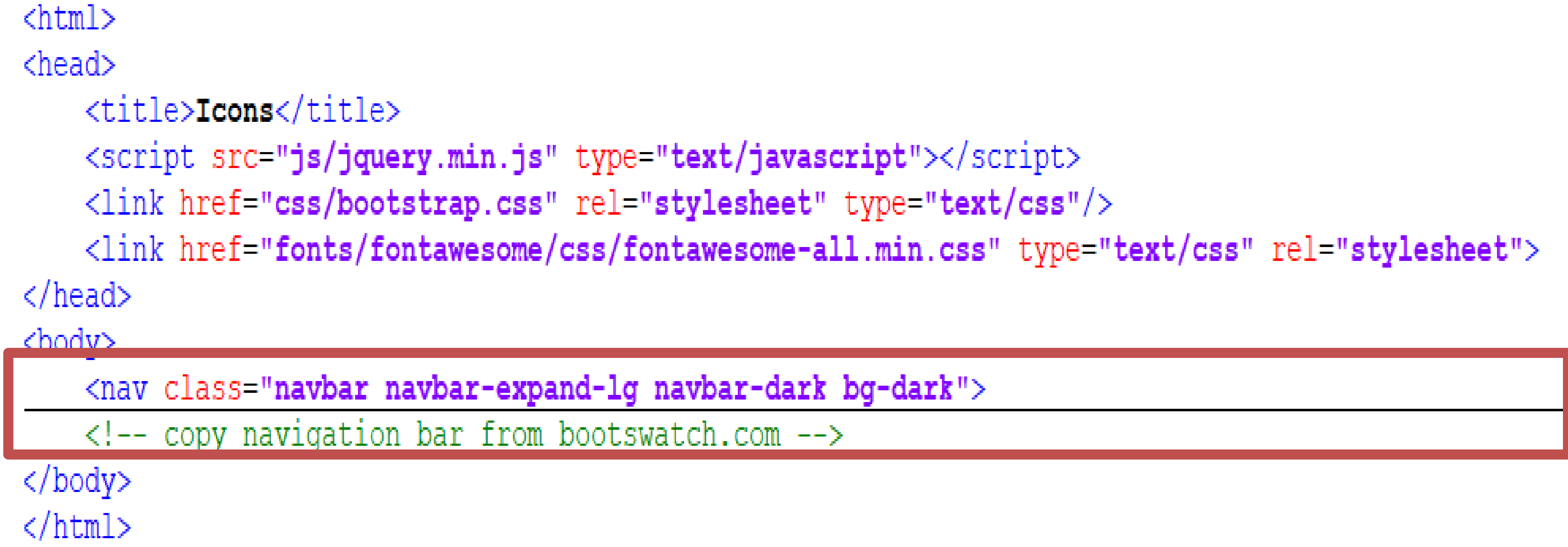


```
<html>
<head>
    <title>Icons</title>
    <link href="fonts/fontawesome/css/fontawesome-all.min.css" type="text/css" rel="stylesheet">
</head>
<body>
    <h1>Ambulance</h1>
    <i class='fas fa-ambulance'></i>
    <i class='fas fa-ambulance' style='font-size:24px'></i>
    <i class='fas fa-ambulance' style='font-size:36px'></i>
    <i class='fas fa-ambulance' style='font-size:48px;color:red'></i>
    <hr/>
    <i class='fas fa-shopping-cart'></i>
    <i class='fas fa-shopping-cart' style='font-size:24px'></i>
    <i class='fas fa-shopping-cart' style='font-size:36px'></i>
    <i class='fas fa-shopping-cart' style='font-size:48px;color:red'></i>
</body>
</html>
```

Ambulance

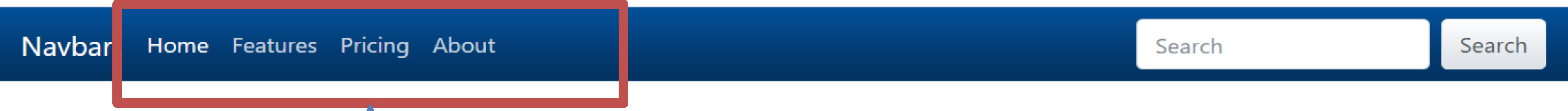
Example

- Suppose you have a navigation bar and you just want to add a shopping cart icon into it.

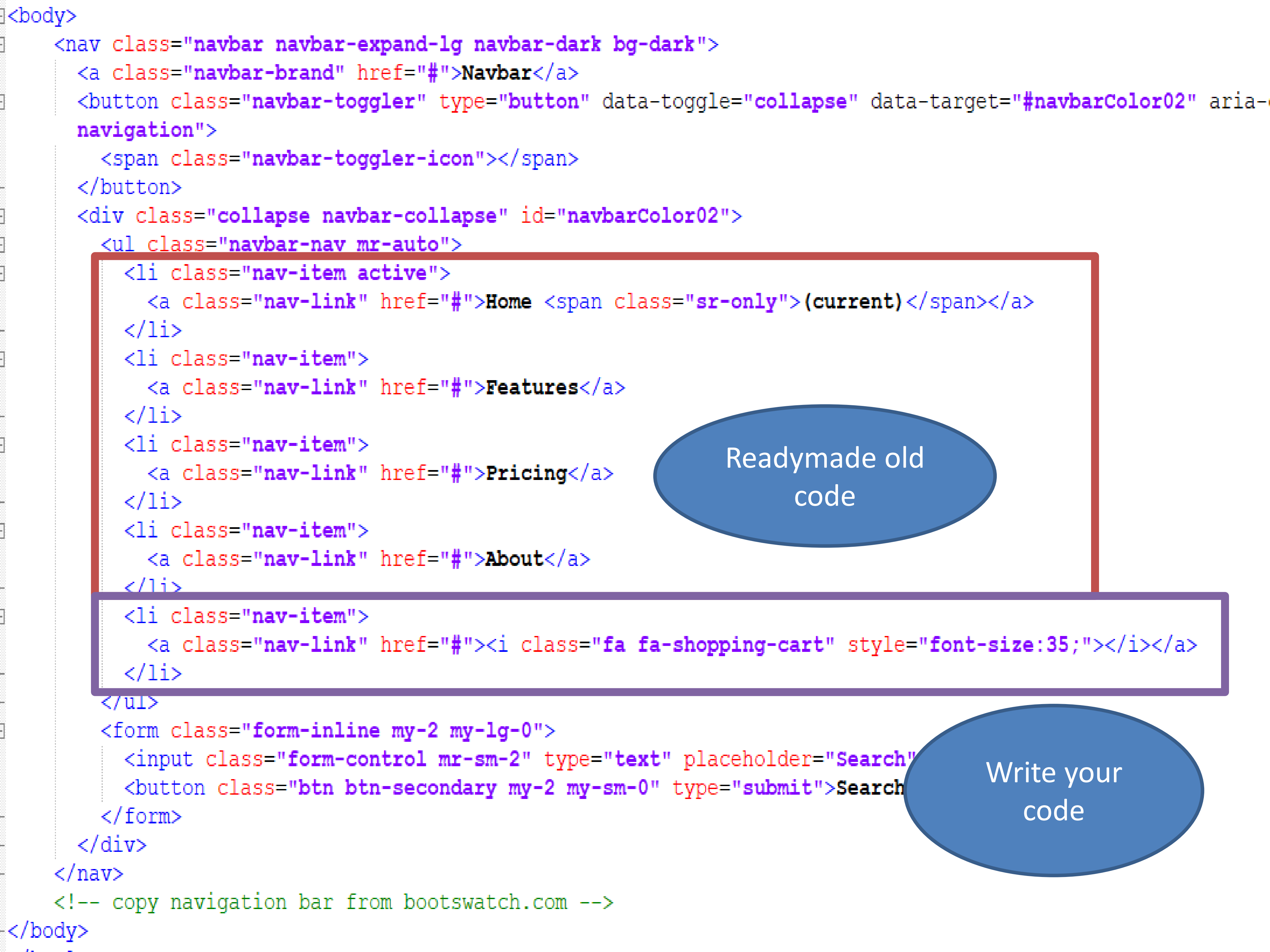


```
<html>
<head>
    <title>Icons</title>
    <script src="js/jquery.min.js" type="text/javascript"></script>
    <link href="css/bootstrap.css" rel="stylesheet" type="text/css"/>
    <link href="fonts/fontawesome/css/fontawesome-all.min.css" type="text/css" rel="stylesheet">
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
    <!-- copy navigation bar from bootswatch.com -->
</body>
</html>
```

- output



Focus on : “Feature” “Pricing” “About” in next slide



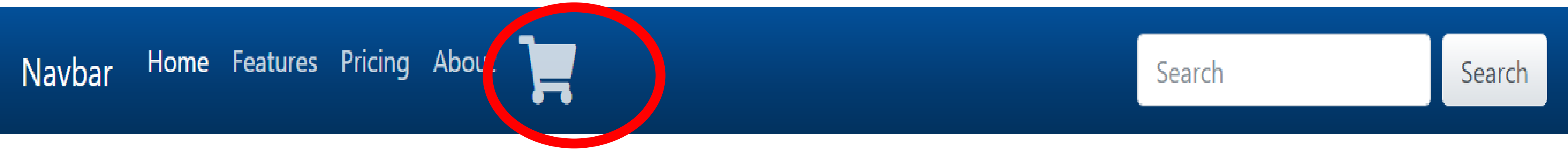
```
<body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
      <a class="navbar-brand" href="#">Navbar</a>
      <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarColor02" aria-
      navigation">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarColor02">
        <ul class="navbar-nav mr-auto">
          <li class="nav-item active">
            <a class="nav-link" href="#">Home <span class="sr-only">(current)</span></a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">Features</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">Pricing</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">About</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#"><i class="fa fa-shopping-cart" style="font-size:35;"></i></a>
          </li>
        </ul>
        <form class="form-inline my-2 my-lg-0">
          <input class="form-control mr-sm-2" type="text" placeholder="Search"
          <button class="btn btn-secondary my-2 my-sm-0" type="submit">Search
        </form>
      </div>
    </nav>
    <!-- copy navigation bar from bootswatch.com -->
</body>
```

Readymade old code

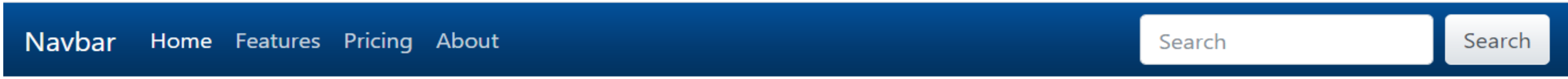
Write your code

Icon

- Output

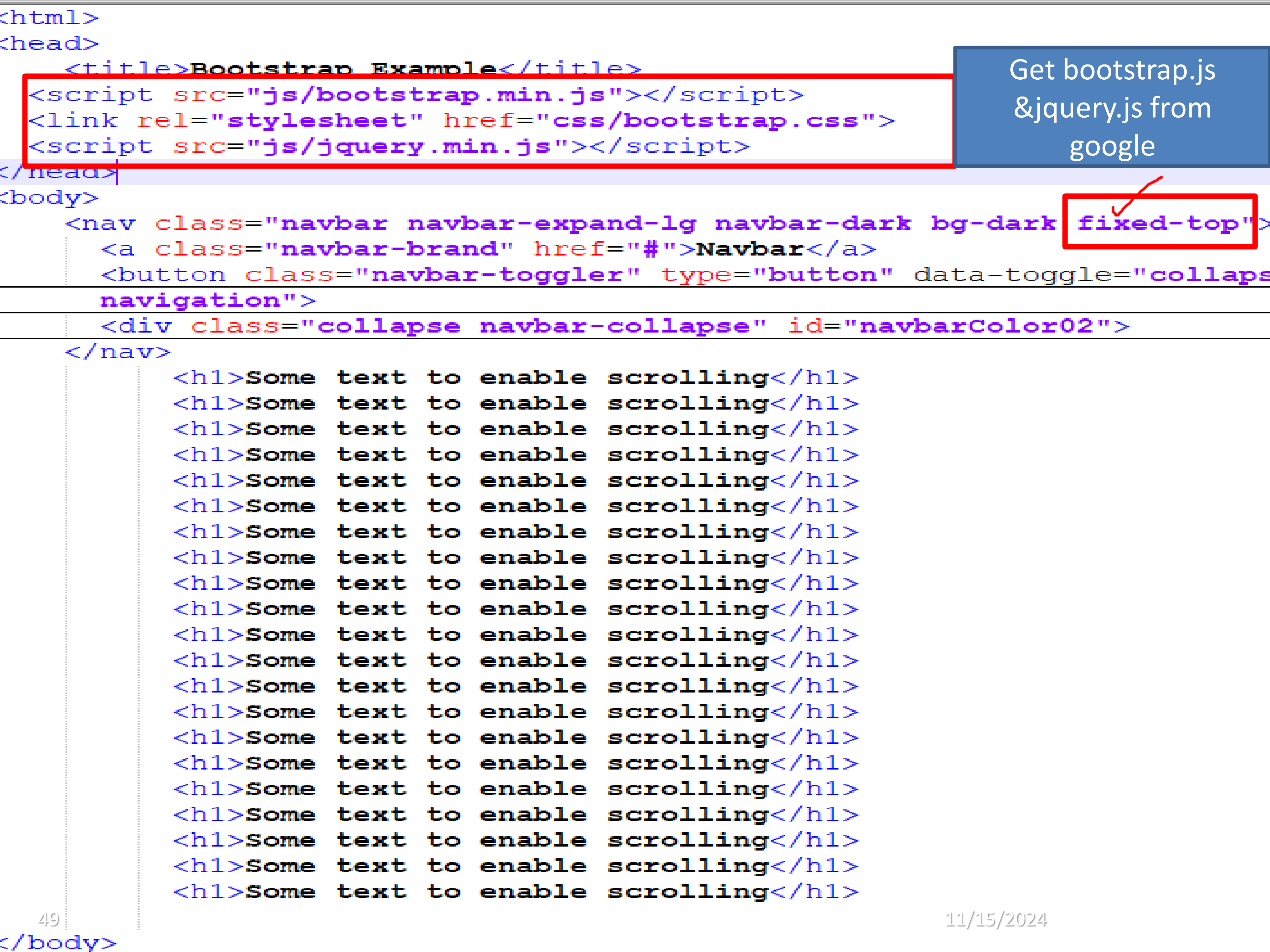


- Compare with previous one



Affix Property

- The Affix plugin allows an element to become affixed (locked) to an area on the page. This is often used with navigation menus or social icon buttons, to make them "stick" at a specific area while scrolling up and down the page.
- Affix property comes in multiple variations such as
  – Class=“fixed-top”
  – data-spy=“affic”



```
<html>
<head>
    <title>Bootstrap Example</title>
<script src="js/bootstrap.min.js"></script>
<link rel="stylesheet" href="css/bootstrap.css">
<script src="js/jquery.min.js"></script>
</head>
<body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-dark fixed-top">
      <a class="navbar-brand" href="#">Navbar</a>
      <button class="navbar-toggler" type="button" data-toggle="collaps
      navigation">
      <div class="collapse navbar-collapse" id="navbarColor02">
    </nav>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
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            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
            <h1>Some text to enable scrolling</h1>
</body>
```
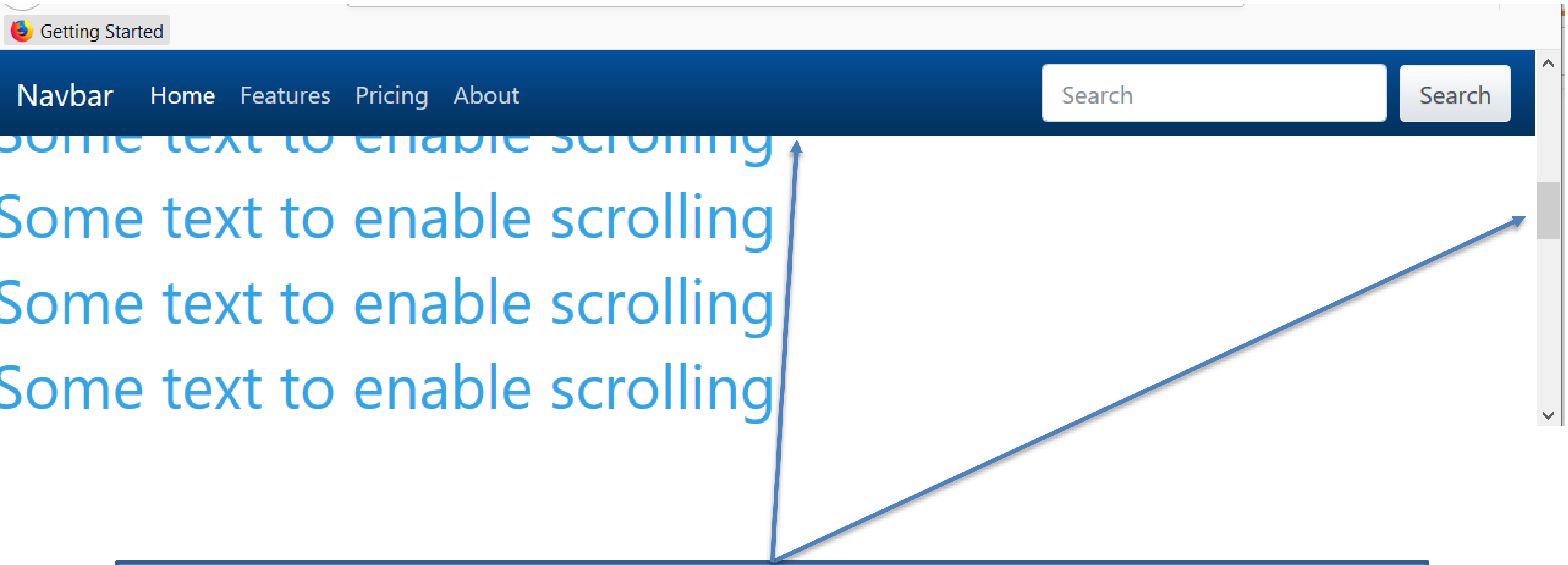

Get bootstrap.js &jquery.js from google

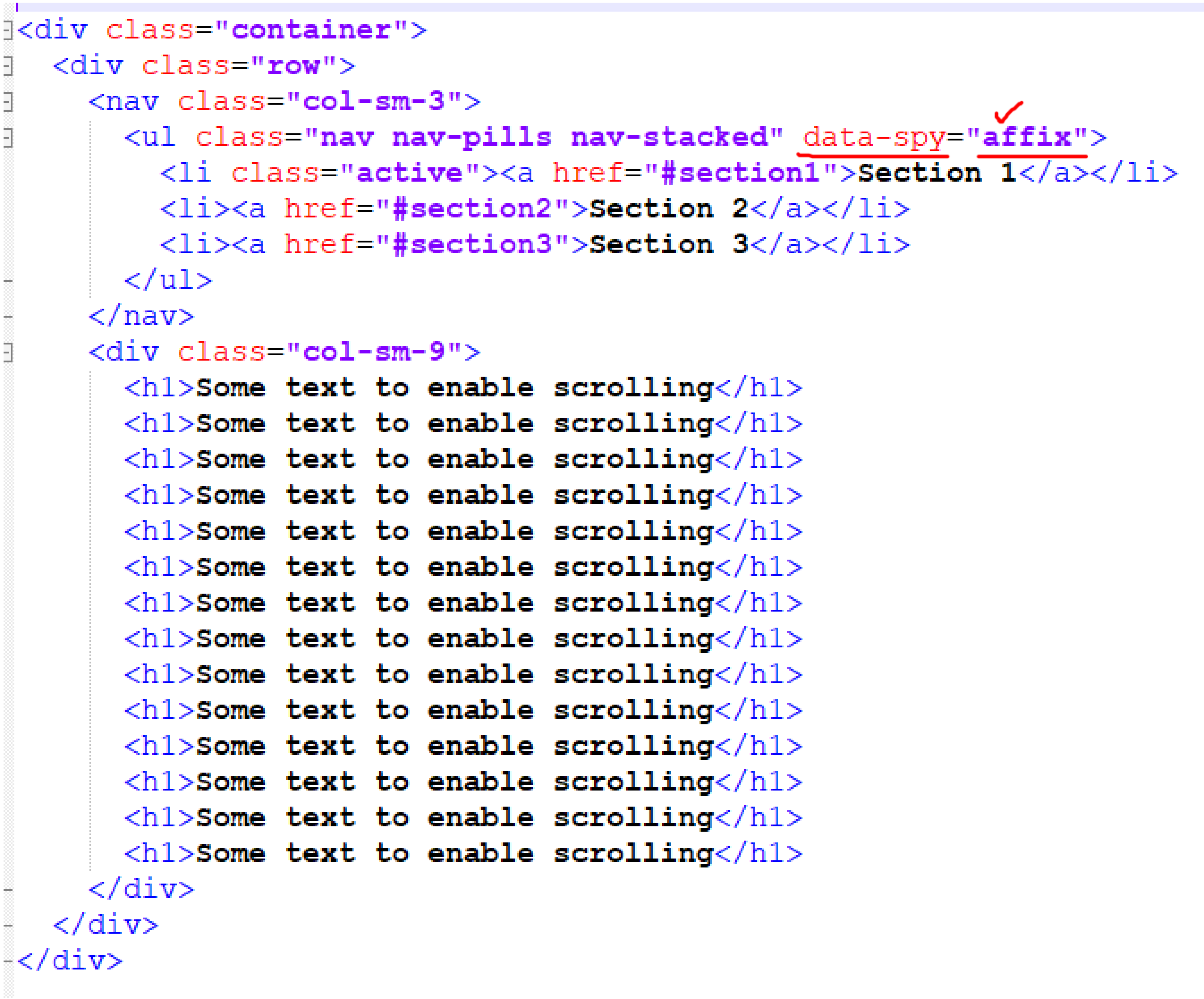


Some text to enable scrolling
Some text to enable scrolling
Some text to enable scrolling
Some text to enable scrolling

You are scrolling the page but, nav-bar is still visible!!!!!!!!

Affix Property

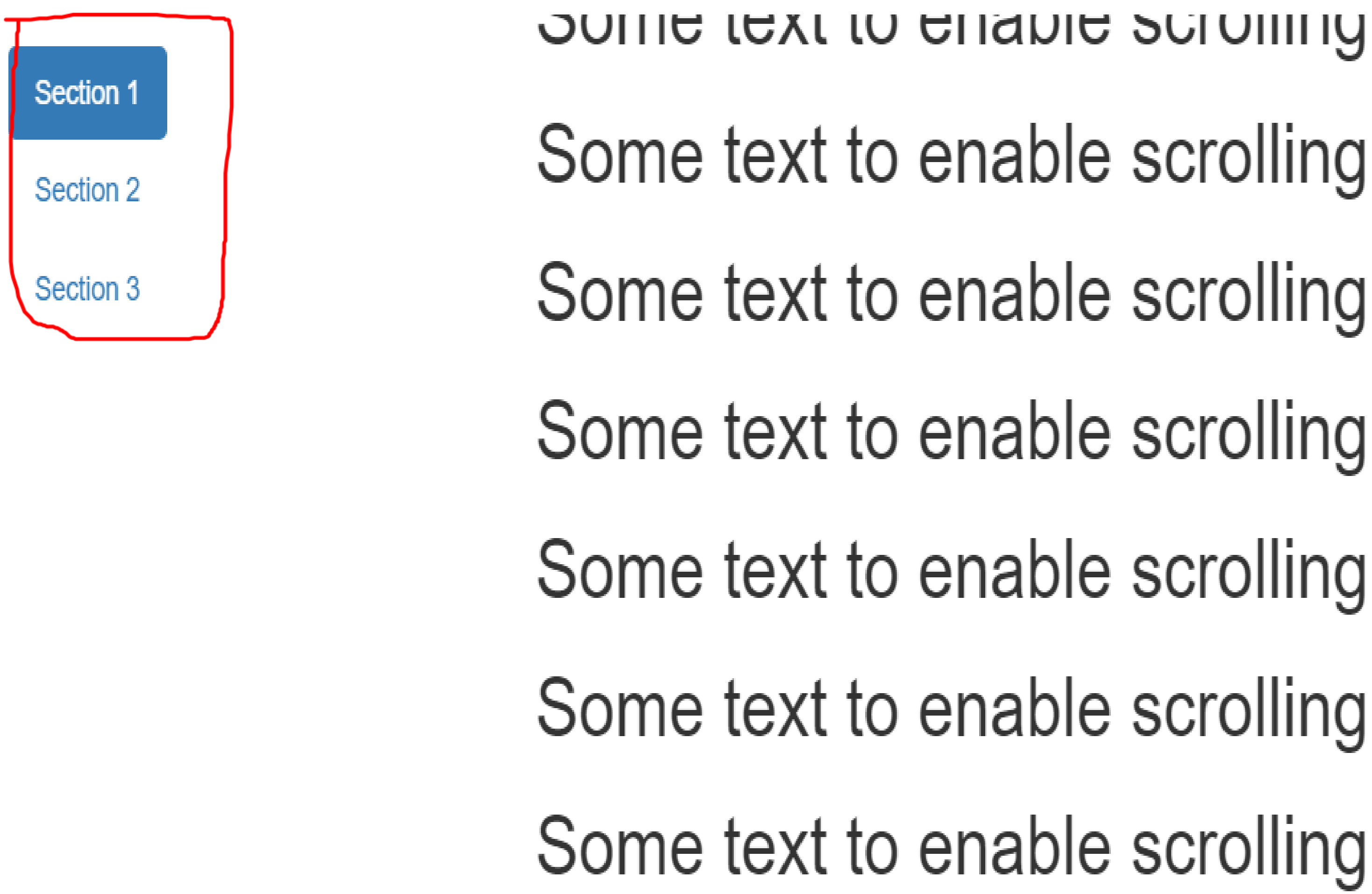
- Example



```
<div class="container">
  <div class="row">
    <nav class="col-sm-3">
      <ul class="nav nav-pills nav-stacked" data-spy="affix">
        <li class="active"><a href="#section1">Section 1</a></li>
        <li><a href="#section2">Section 2</a></li>
        <li><a href="#section3">Section 3</a></li>
      </ul>
    </nav>
    <div class="col-sm-9">
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
      <h1>Some text to enable scrolling</h1>
    </div>
  </div>
</div>
```

Affix Property

- Output



Some text to enable scrolling

Some text to enable scrolling

Some text to enable scrolling

Some text to enable scrolling

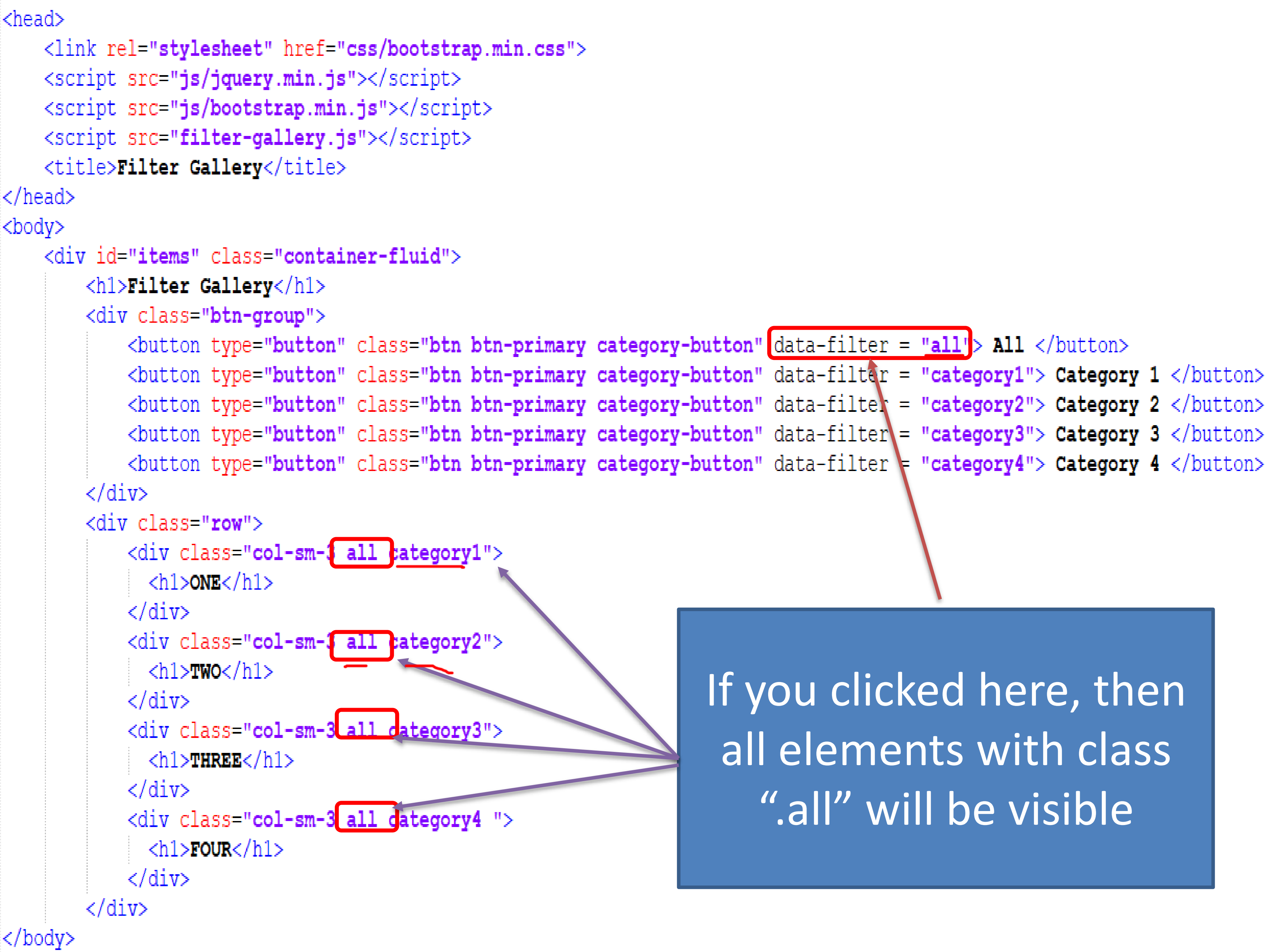
Some text to enable scrolling

Some text to enable scrolling

Some text to enable scrolling

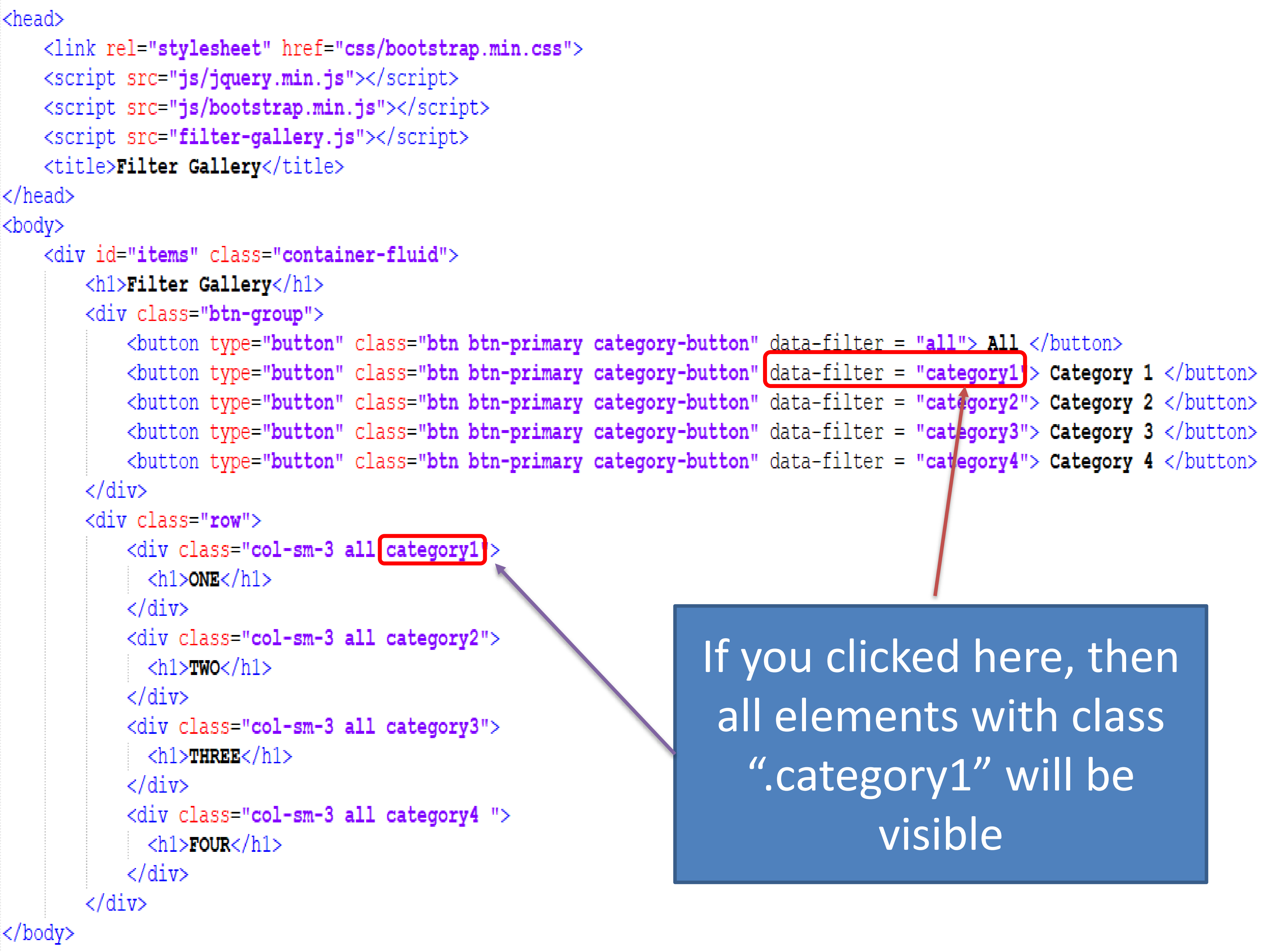
Filter Element

- Filter element in HTML document can help to filter required elements and hide all other elements from the document. For example
  - See next slide



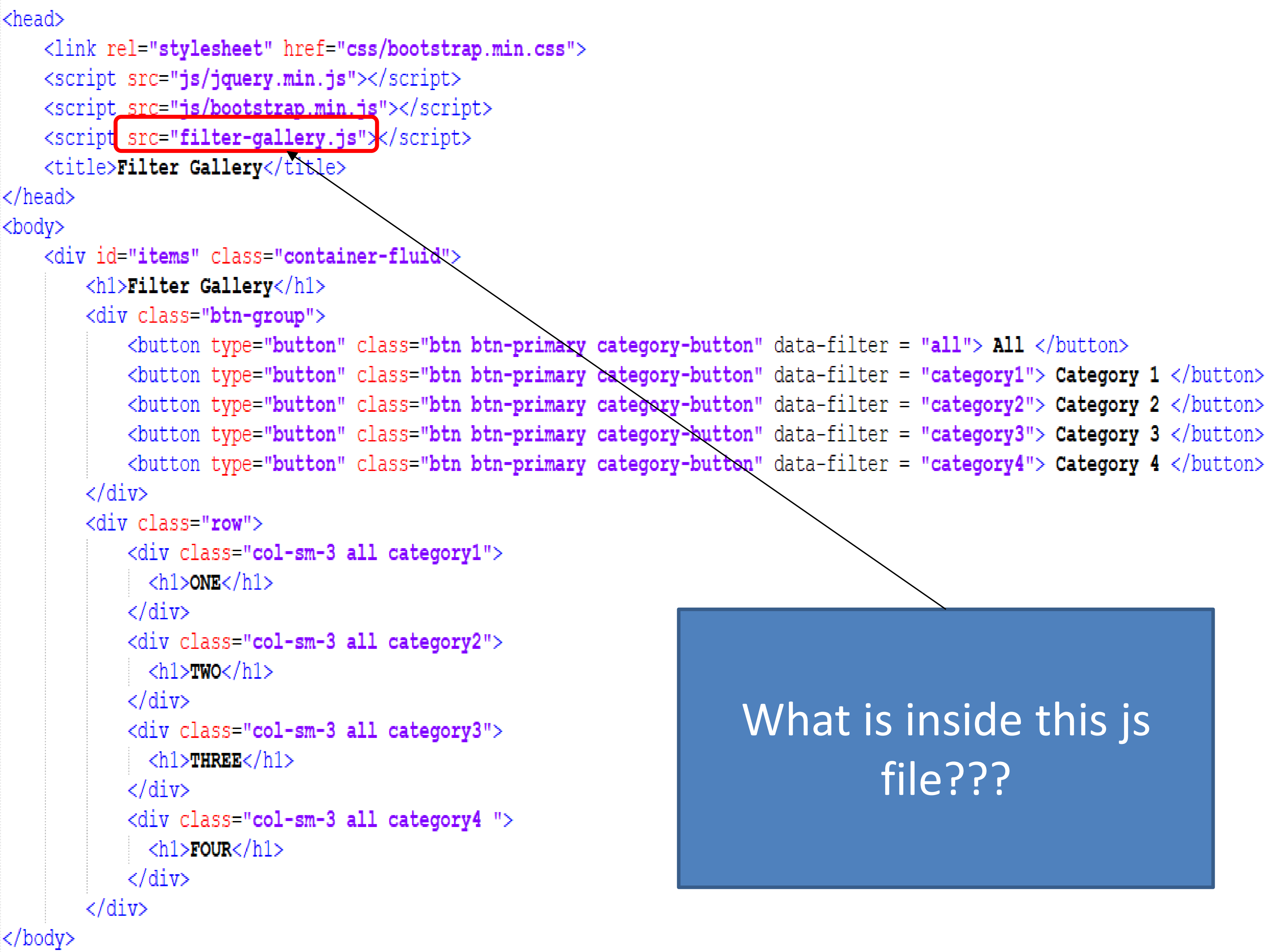
```
<head>
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <script src="js/jquery.min.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="filter-gallery.js"></script>
    <title>Filter Gallery</title>
</head>
<body>
    <div id="items" class="container-fluid">
        <h1>Filter Gallery</h1>
        <div class="btn-group">
            <button type="button" class="btn btn-primary category-button" data-filter = "all"> All </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category1"> Category 1 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category2"> Category 2 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category3"> Category 3 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category4"> Category 4 </button>
        </div>
        <div class="row">
            <div class="col-sm-3 all category1">
              <h1>ONE</h1>
            </div>
            <div class="col-sm-3 all category2">
              <h1>TWO</h1>
            </div>
            <div class="col-sm-3 all category3">
              <h1>THREE</h1>
            </div>
            <div class="col-sm-3 all category4 ">
              <h1>FOUR</h1>
            </div>
        </div>
</body>
```

If you clicked here, then all elements with class ".all" will be visible



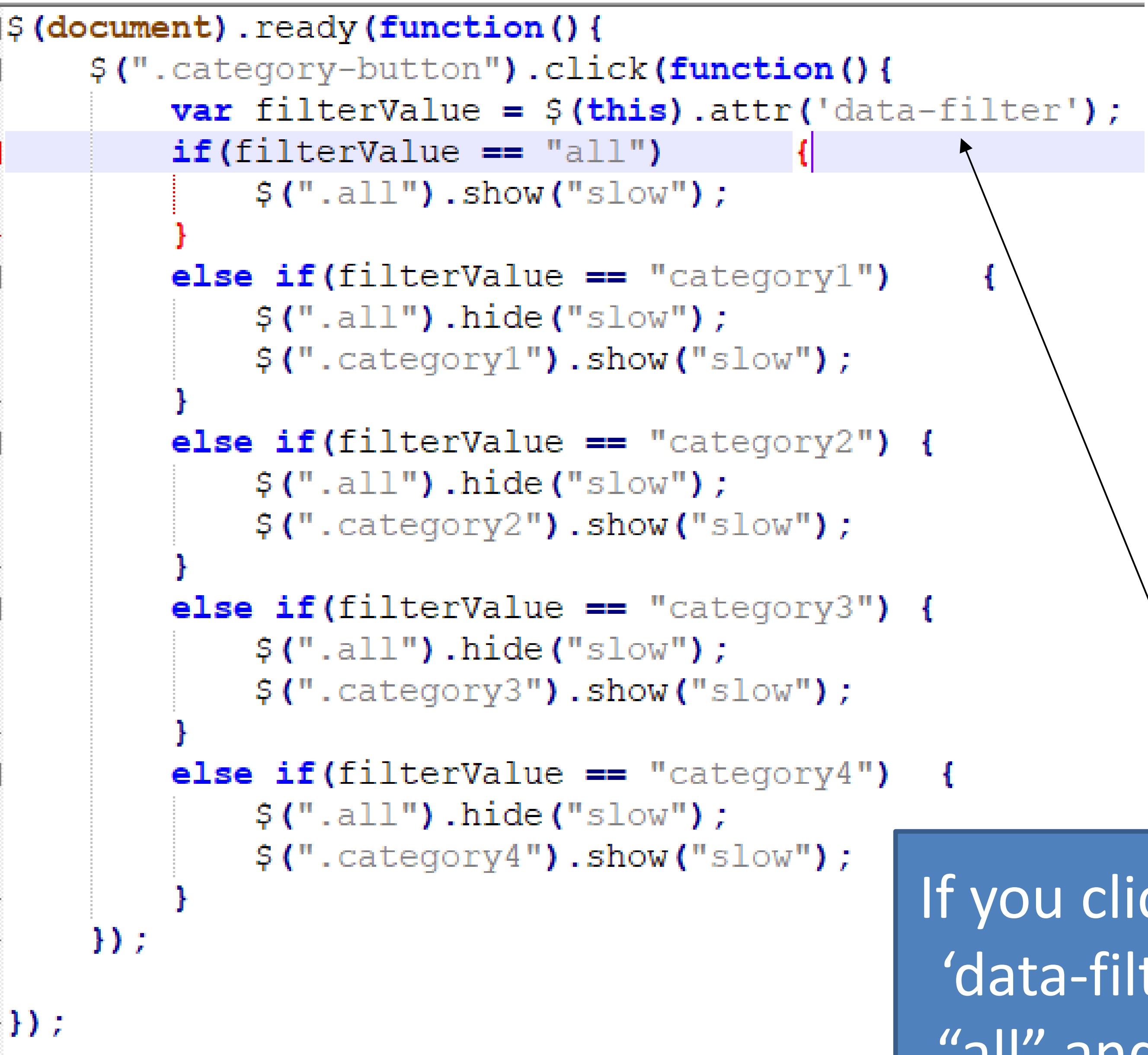
```
<head>
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <script src="js/jquery.min.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="filter-gallery.js"></script>
    <title>Filter Gallery</title>
</head>
<body>
    <div id="items" class="container-fluid">
        <h1>Filter Gallery</h1>
        <div class="btn-group">
            <button type="button" class="btn btn-primary category-button" data-filter = "all"> All </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category1"> Category 1 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category2"> Category 2 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category3"> Category 3 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category4"> Category 4 </button>
        </div>
        <div class="row">
            <div class="col-sm-3 all category1">
              <h1>ONE</h1>
            </div>
            <div class="col-sm-3 all category2">
              <h1>TWO</h1>
            </div>
            <div class="col-sm-3 all category3">
              <h1>THREE</h1>
            </div>
            <div class="col-sm-3 all category4 ">
              <h1>FOUR</h1>
            </div>
        </div>
</body>
```

If you clicked here, then all elements with class ".category1" will be visible



```
<head>
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <script src="js/jquery.min.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="filter-gallery.js"></script>
    <title>Filter Gallery</title>
</head>
<body>
    <div id="items" class="container-fluid">
        <h1>Filter Gallery</h1>
        <div class="btn-group">
            <button type="button" class="btn btn-primary category-button" data-filter = "all"> All </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category1"> Category 1 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category2"> Category 2 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category3"> Category 3 </button>
            <button type="button" class="btn btn-primary category-button" data-filter = "category4"> Category 4 </button>
        </div>
        <div class="row">
            <div class="col-sm-3 all category1">
              <h1>ONE</h1>
            </div>
            <div class="col-sm-3 all category2">
              <h1>TWO</h1>
            </div>
            <div class="col-sm-3 all category3">
              <h1>THREE</h1>
            </div>
            <div class="col-sm-3 all category4 ">
              <h1>FOUR</h1>
            </div>
        </div>
</body>
```

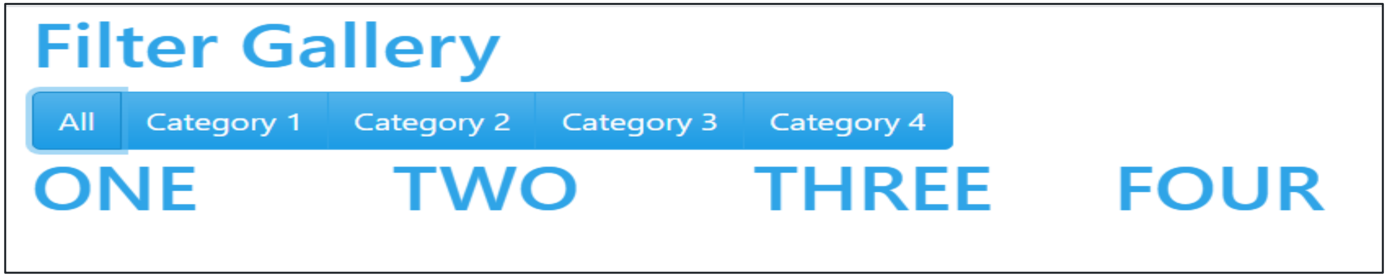
What is inside this js file???



```
$(document).ready(function(){
    $(".category-button").click(function(){
        var filterValue = $(this).attr('data-filter');
        if(filterValue == "all")        {
            $(".all").show("slow");
        }
        else if(filterValue == "category1")     {
            $(".all").hide("slow");
            $(".category1").show("slow");
        }
        else if(filterValue == "category2") {
            $(".all").hide("slow");
            $(".category2").show("slow");
        }
        else if(filterValue == "category3") {
            $(".all").hide("slow");
            $(".category3").show("slow");
        }
        else if(filterValue == "category4")  {
            $(".all").hide("slow");
            $(".category4").show("slow");
        }
    });

});
```

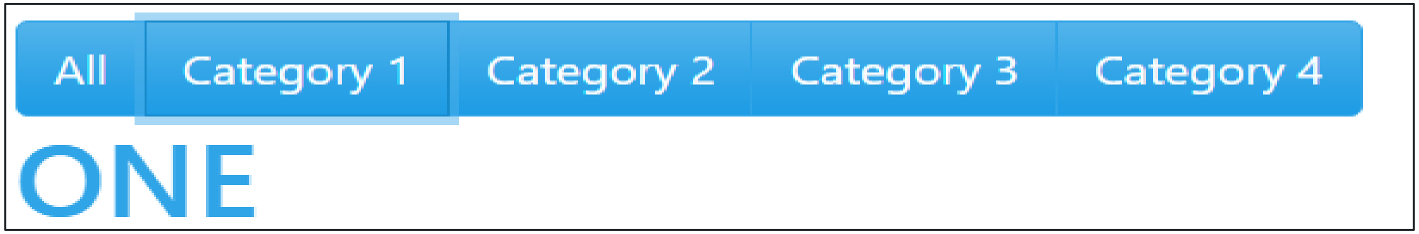
If you clicked on all, then ‘data-filter’ will contain “all” and elements with class “all” will be visible

Output after click on different tabs

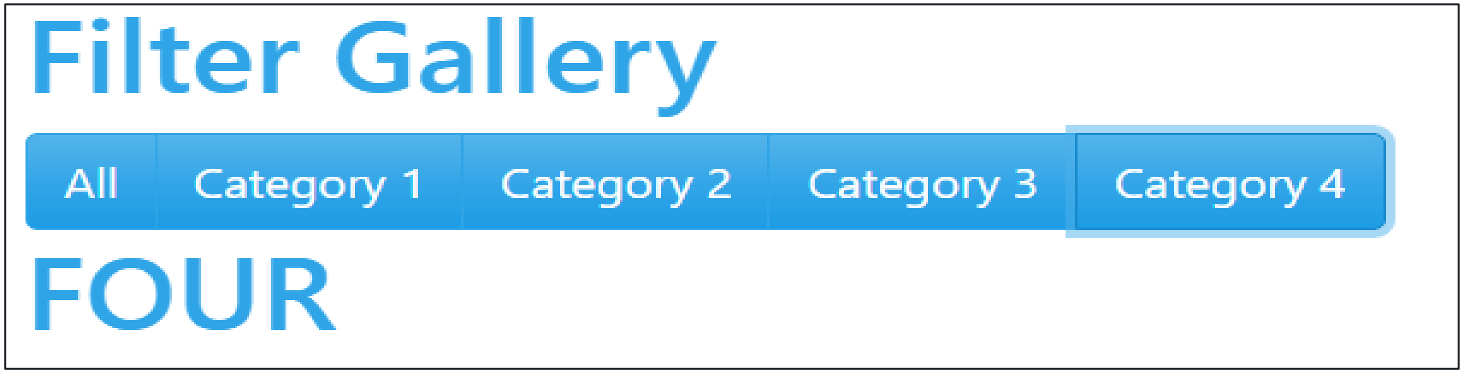


Filter Gallery

ONE TWO THREE FOUR



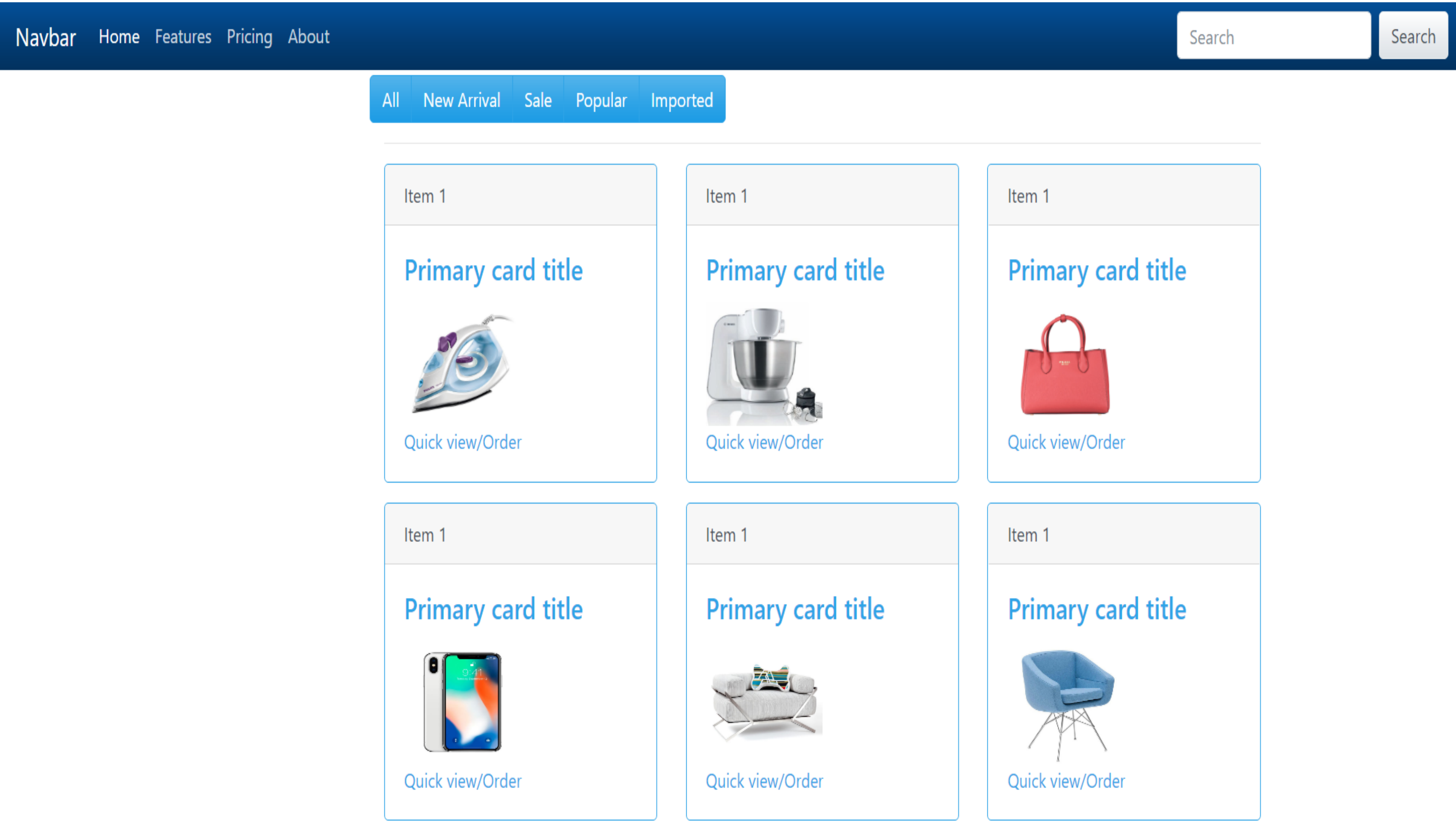
ONE



Filter Gallery

FOUR

More Practical



Item 1

Primary card title

Quick view/Order

Item 1

Primary card title

Quick view/Order

Item 1

Primary card title

Quick view/Order

Item 1

Primary card title

Quick view/Order

Item 1

Primary card title

Quick view/Order

Item 1

Primary card title

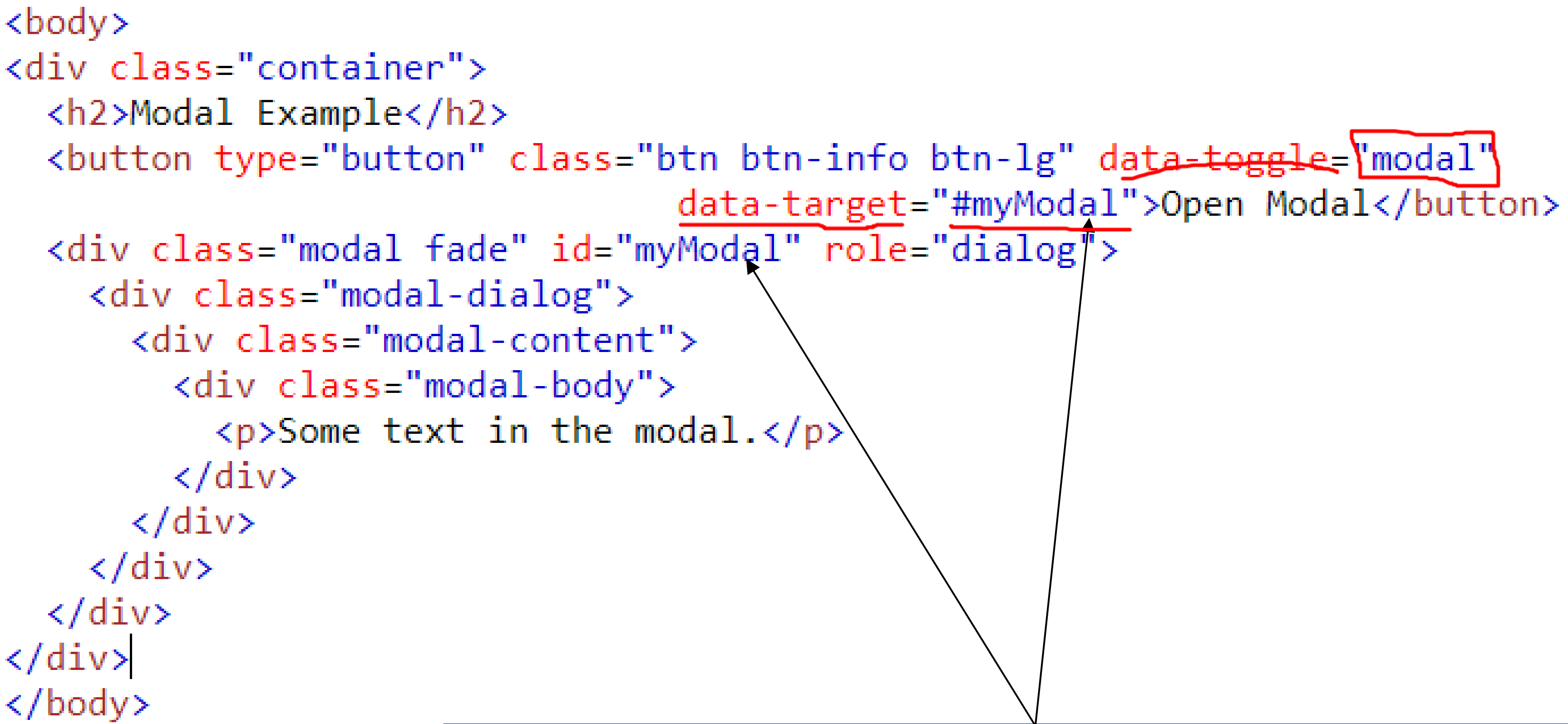
Quick view/Order

Modal Dialog

- The **Modal** plugin is a **dialog** box/**popup** window that is displayed on top of the current page.

- A **Modal** is a **dialog** box/**popup** window that can be used for lightboxes, user notifications and UI enhancements etc.

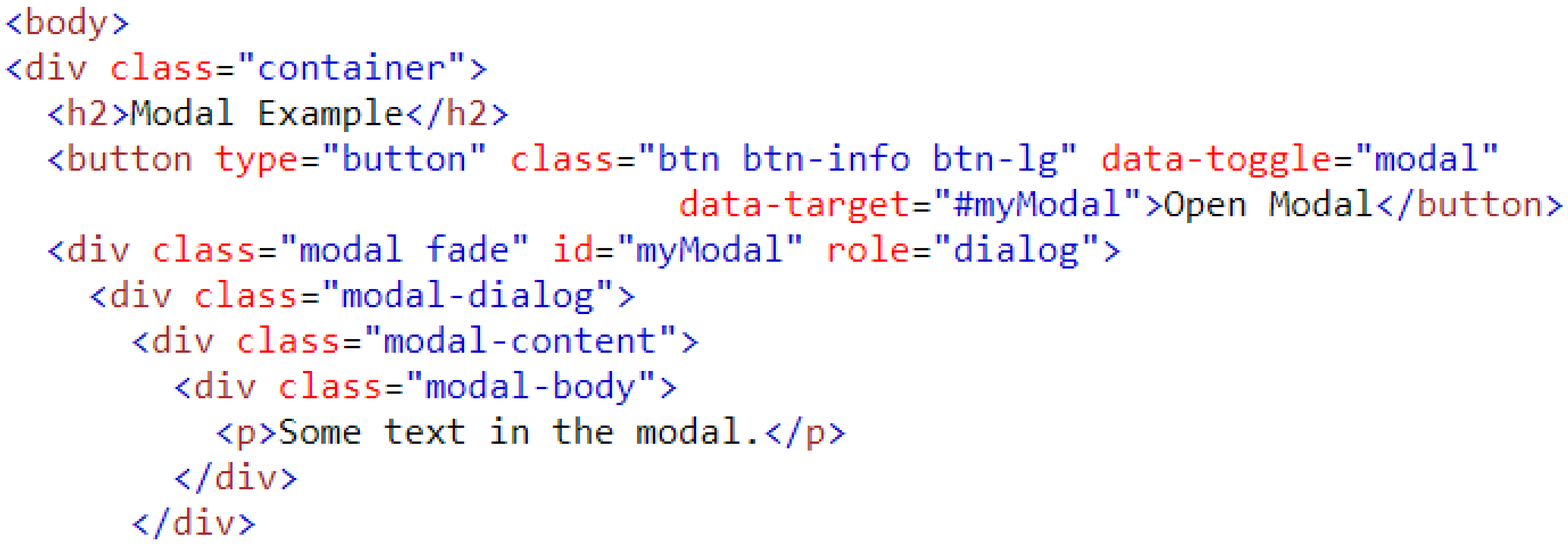
Modal Dialog



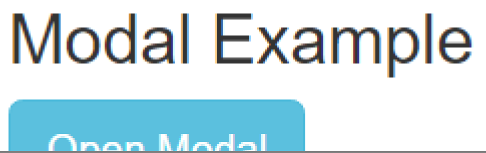
```
<body>
<div class="container">
  <h2>Modal Example</h2>
  <button type="button" class="btn btn-info btn-lg" data-toggle="modal"
                                    data-target="#myModal">Open Modal</button>
  <div class="modal fade" id="myModal" role="dialog">
    <div class="modal-dialog">
      <div class="modal-content">
        <div class="modal-body">
          <p>Some text in the modal.</p>
        </div>
      </div>
    </div>
  </div>
</div>
</body>
</html>
```

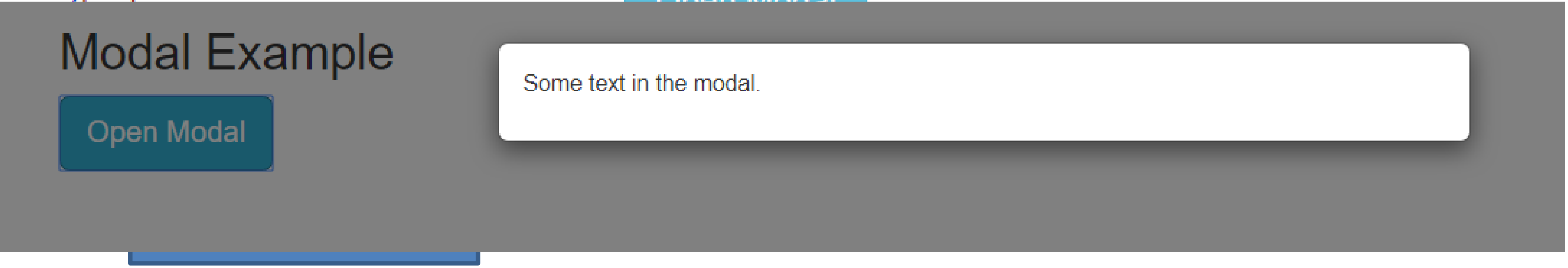
If you clicked on button, the model dialog will open and it will also fade (turned dark) background

Modal Dialog



```
<body>
<div class="container">
  <h2>Modal Example</h2>
  <button type="button" class="btn btn-info btn-lg" data-toggle="modal"
                                data-target="#myModal">Open Modal</button>
  <div class="modal fade" id="myModal" role="dialog">
    <div class="modal-dialog">
      <div class="modal-content">
        <div class="modal-body">
          <p>Some text in the modal.</p>
        </div>
      </div>
    </div>
  </div>
</div>
```



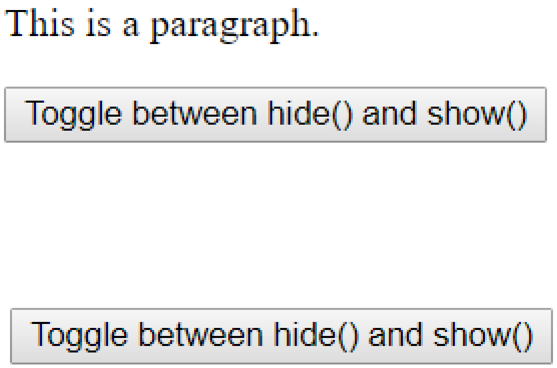


Some text in the modal.

Jquery Toggle Example

- The toggle() method toggles between hide() and show() for the selected elements.
- This method checks the selected elements for visibility. show() is run if an element is hidden. hide() is run if an element is visible - This creates a toggle effect.

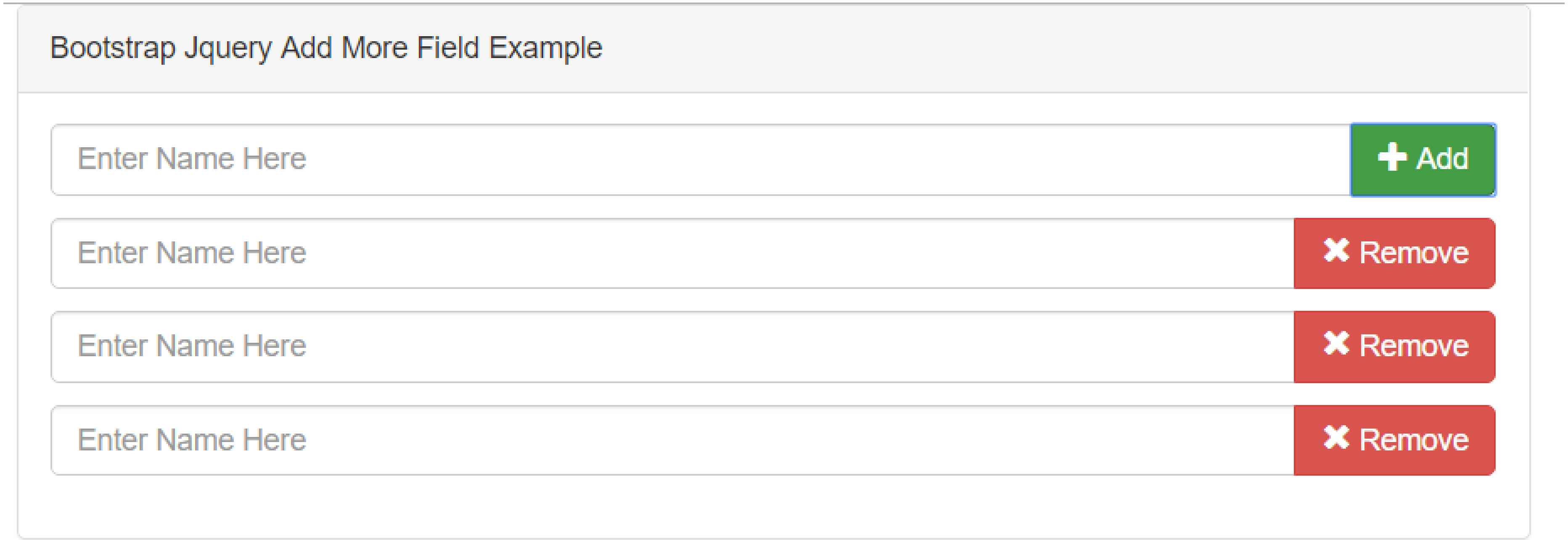
```
<!DOCTYPE html>
<html>
<head>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script>
$(document).ready(function(){
  $("button").click(function(){
    $("p").toggle();
  });
});
</script>
</head>
<body>

<p>This is a paragraph.</p>

<button>Toggle between hide() and show()</button>

</body>
</html>
```


This is a paragraph.

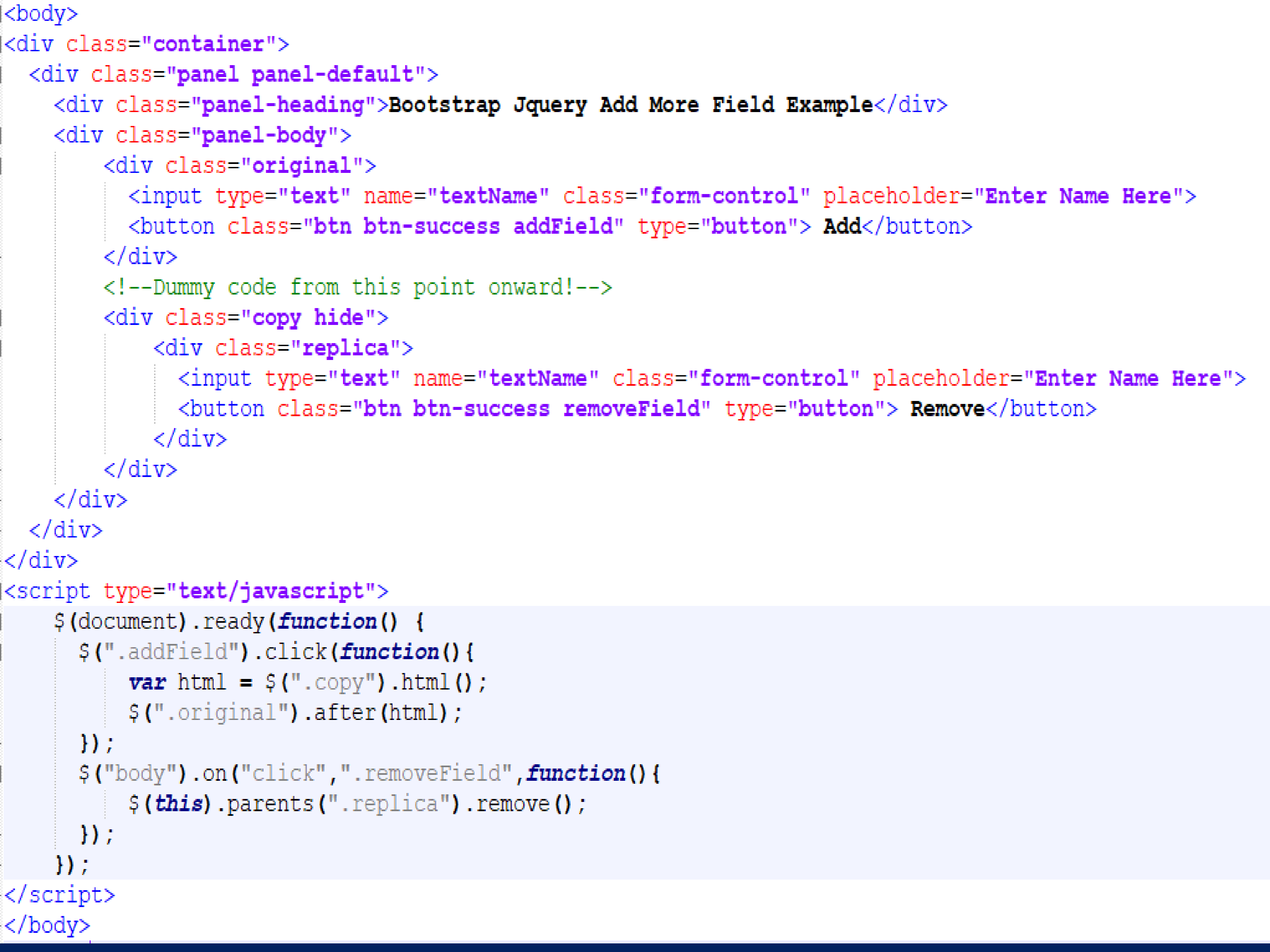
Toggle between hide() and show()
Toggle between hide() and show()

Dynamic Fields Creation

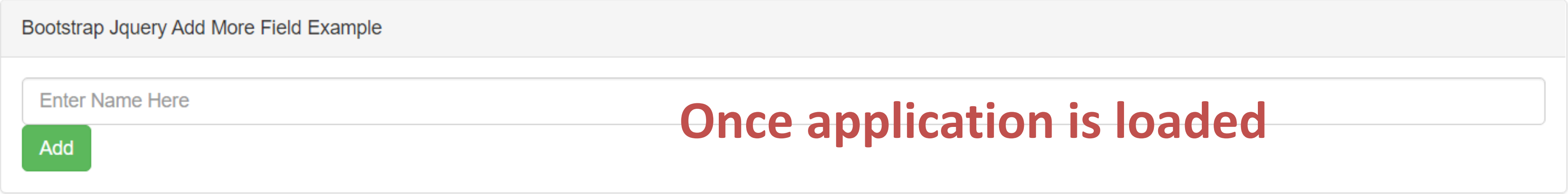
- Jquery can create dynamic fields at runtime as described in following



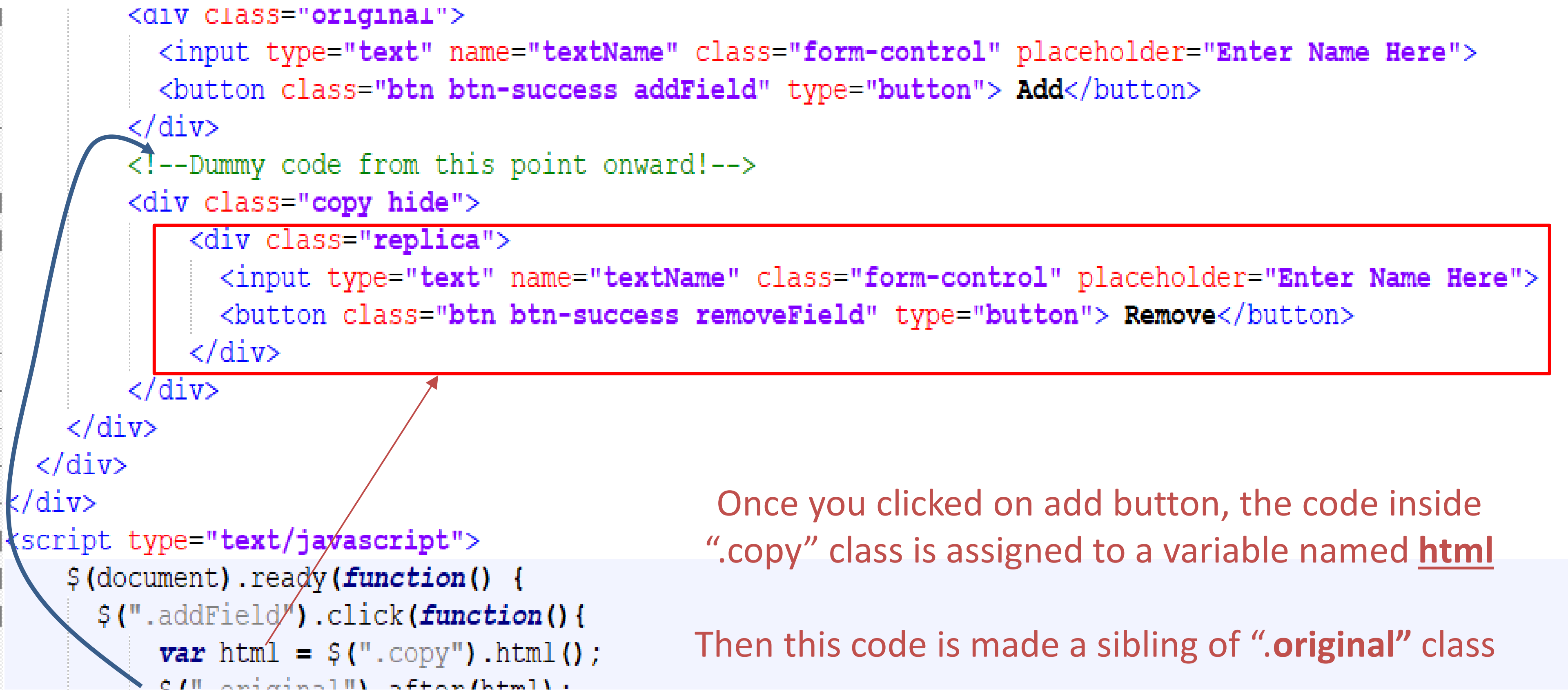
Bootstrap Jquery Add More Field Example



```
<body>
<div class="container">
  <div class="panel panel-default">
    <div class="panel-heading">Bootstrap Jquery Add More Field Example</div>
    <div class="panel-body">
        <div class="original">
          <input type="text" name="textName" class="form-control" placeholder="Enter Name Here">
          <button class="btn btn-success addField" type="button"> Add</button>
        </div>
        <!--Dummy code from this point onward!-->
        <div class="copy hide">
            <div class="replica">
              <input type="text" name="textName" class="form-control" placeholder="Enter Name Here">
              <button class="btn btn-success removeField" type="button"> Remove</button>
            </div>
        </div>
    </div>
  </div>
</div>
<script type="text/javascript">
    $(document).ready(function() {
      $(".addField").click(function(){
          var html = $(".copy").html();
          $(".original").after(html);
      });
      $("body").on("click",".removeField",function(){
          $(this).parents(".replica").remove();
      });
    });
</script>
</body>
```



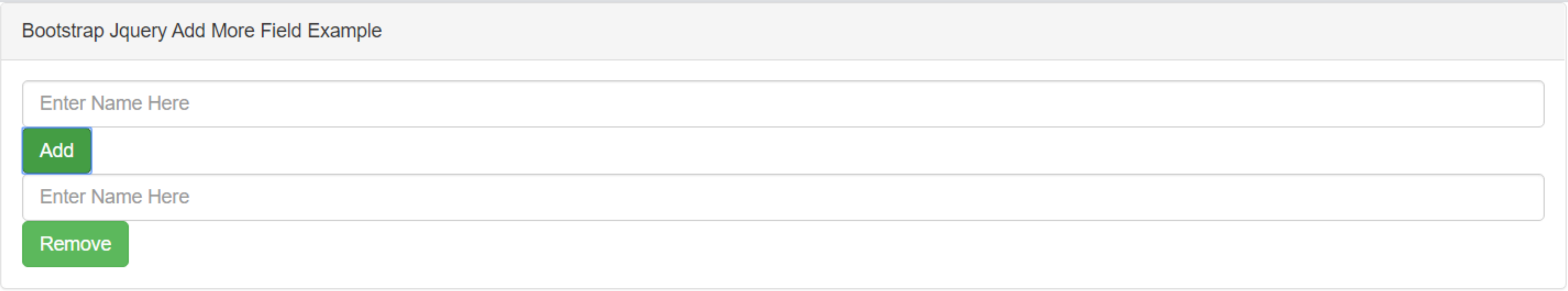
Once application is loaded



```
    <div class="original">
     <input type="text" name="textName" class="form-control" placeholder="Enter Name Here">
     <button class="btn btn-success addField" type="button"> Add</button>
    </div>
    <!--Dummy code from this point onward!-->
    <div class="copy hide">
      <div class="replica">
       <input type="text" name="textName" class="form-control" placeholder="Enter Name Here">
       <button class="btn btn-success removeField" type="button"> Remove</button>
      </div>
    </div>
  </div>
 </div>
</div>
<script type="text/javascript">
  $(document).ready(function() {
   $(".addField").click(function(){
     var html = $(".copy").html();
     $(".original").after(html);
```

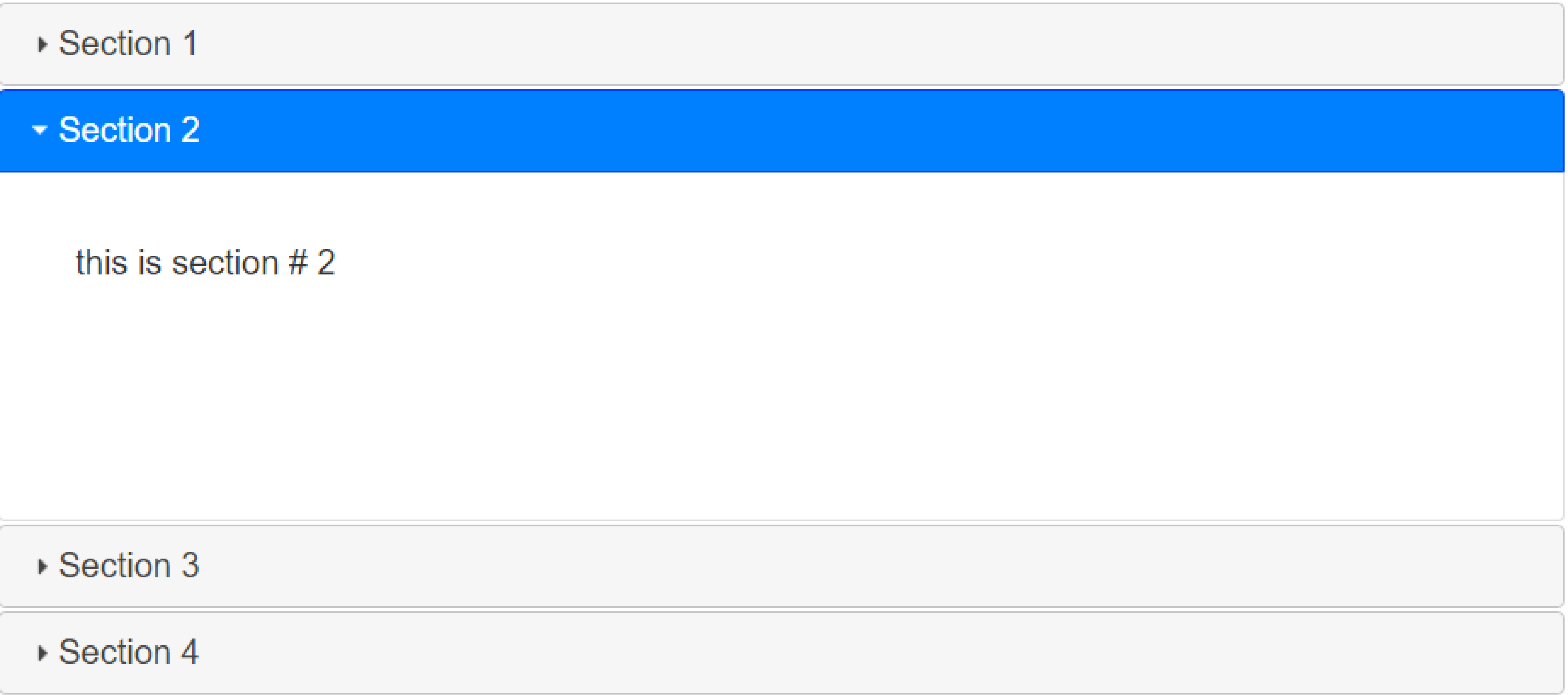
Once you clicked on add button, the code inside ".copy" class is assigned to a variable named **html**

Then this code is made a sibling of "**.original"** class



Accordion

- Accordions (Dynamic List) are useful when you want to toggle between hiding and showing large amount of content



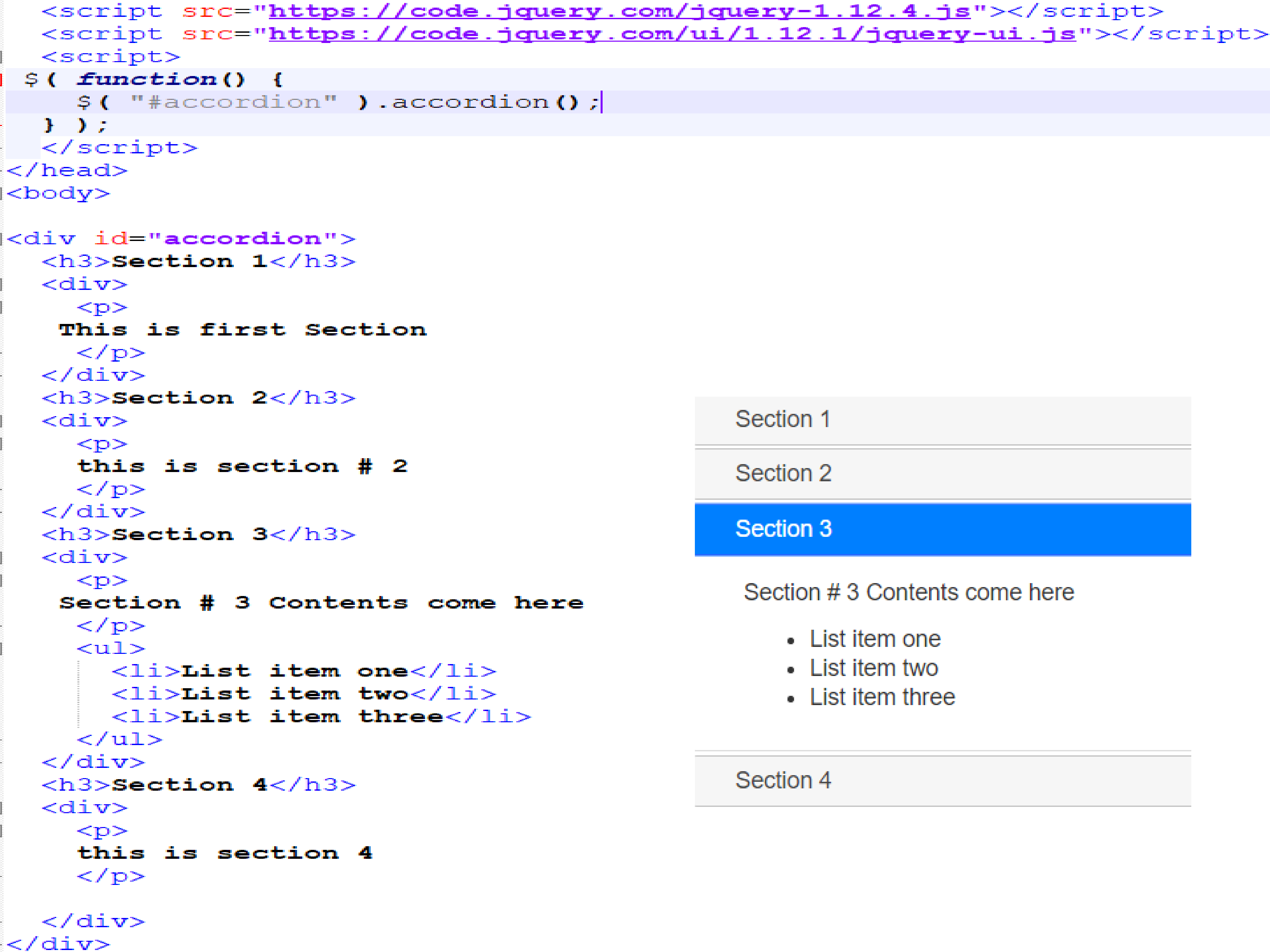
▸ Section 1

▾ Section 2

this is section # 2

▸ Section 3

▸ Section 4



```
    <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>
    <script>
  $( function() {
      $( "#accordion" ).accordion();
    } );
    </script>
</head>
<body>

<div id="accordion">
    <h3>Section 1</h3>
    <div>
      <p>
   This is first Section
      </p>
    </div>
    <h3>Section 2</h3>
    <div>
      <p>
      this is section # 2
      </p>
    </div>
    <h3>Section 3</h3>
    <div>
      <p>
   Section # 3 Contents come here
      </p>
      <ul>
        <li>List item one</li>
        <li>List item two</li>
        <li>List item three</li>
      </ul>
    </div>
    <h3>Section 4</h3>
    <div>
      <p>
      this is section 4
      </p>

    </div>
</div>
```

Section 1

Section 2

Section 3

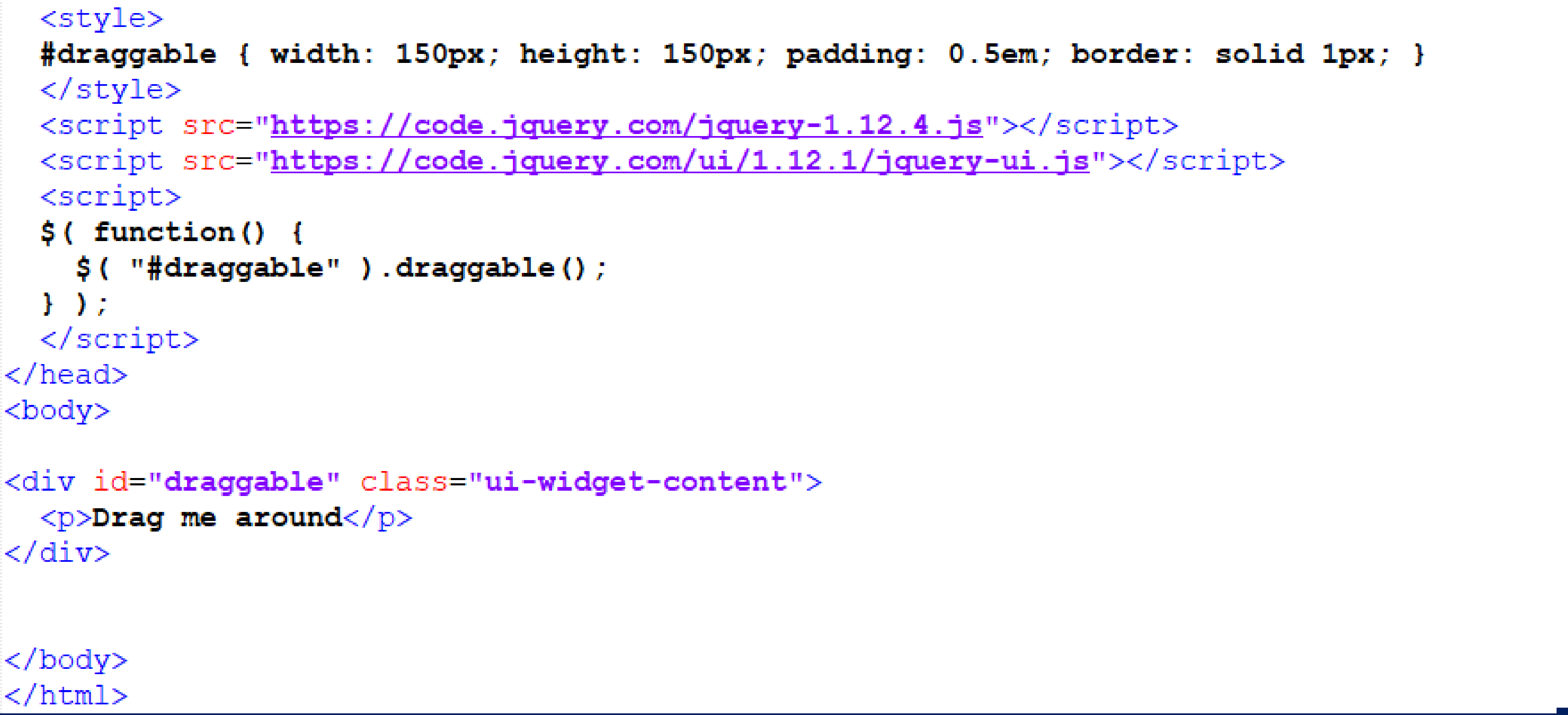
Section # 3 Contents come here

- List item one
- List item two
- List item three

Section 4

Draggable

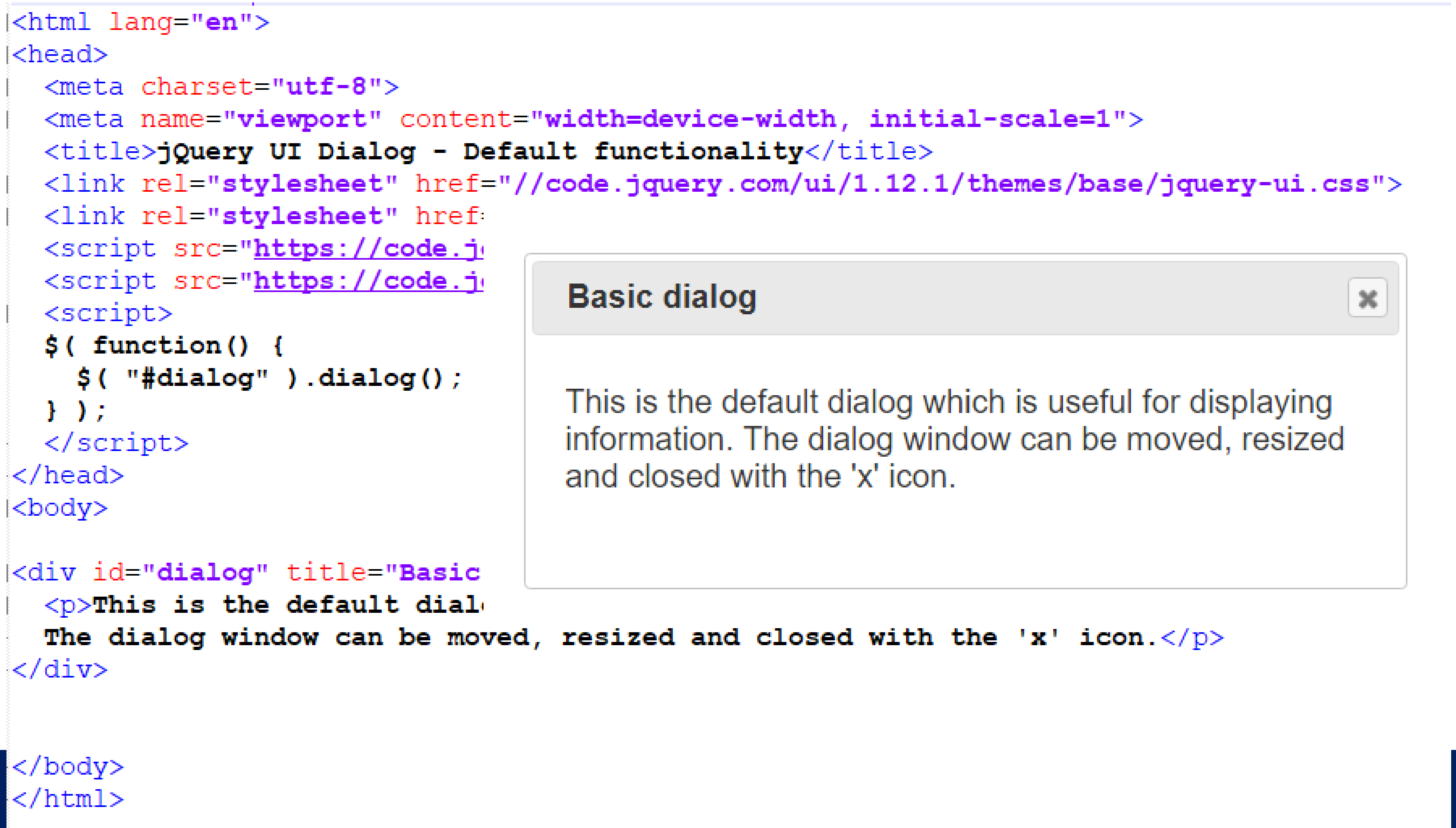
- Draggable
  - Allow elements to be moved using the mouse.



```
  <style>
  #draggable { width: 150px; height: 150px; padding: 0.5em; border: solid 1px; }
  </style>
  <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>
  <script>
  $( function() {
    $( "#draggable" ).draggable();
  } );
  </script>
</head>
<body>

<div id="draggable" class="ui-widget-content">
  <p>Drag me around</p>
</div>


</body>
</html>
```

Draggable

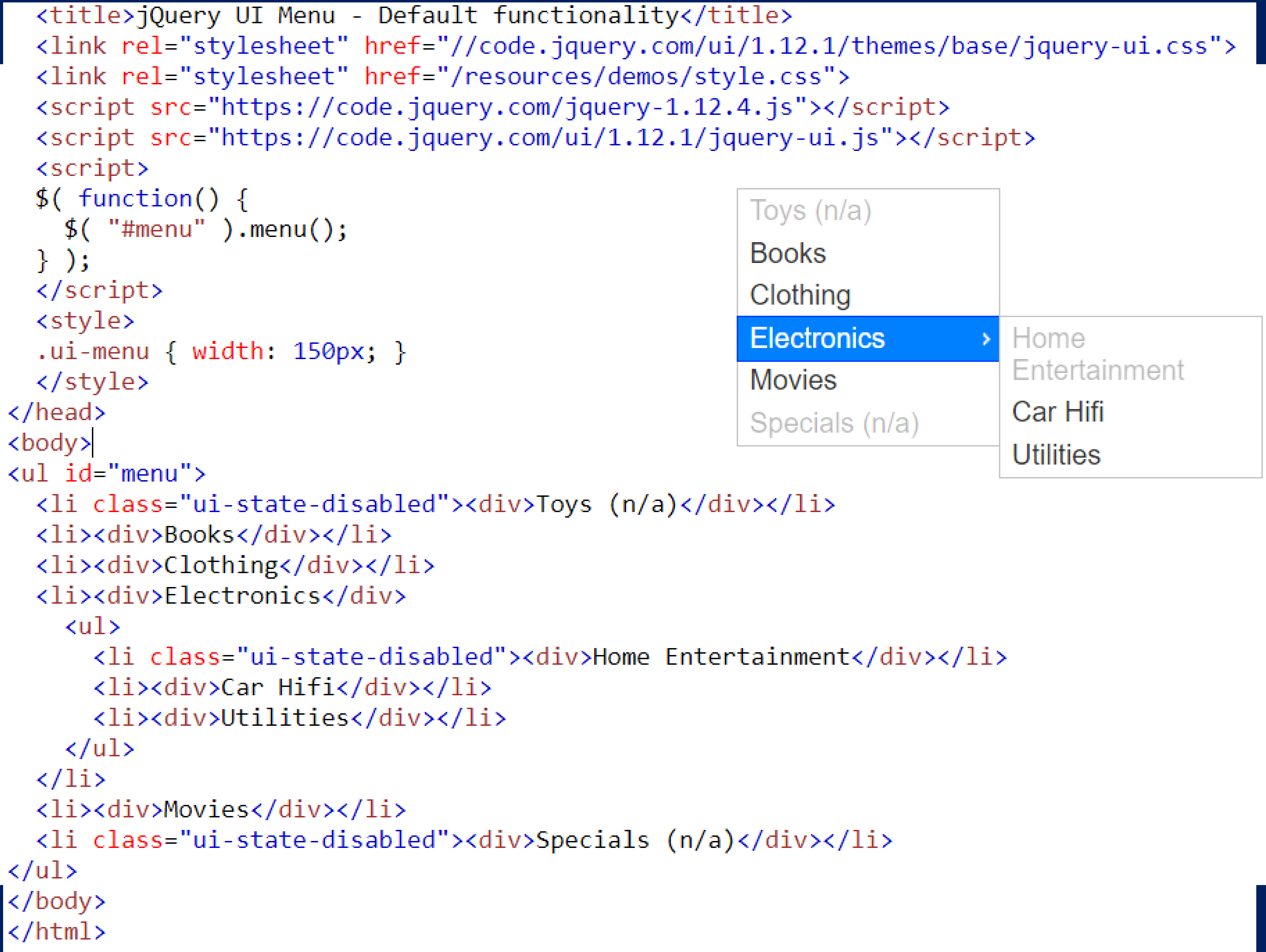
- Interactive draggable dialogue box



```
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>jQuery UI Dialog - Default functionality</title>
  <link rel="stylesheet" href="//code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css">
  <link rel="stylesheet" href
  <script src="https://code.j
  <script src="https://code.j
  <script>
  $( function() {
    $( "#dialog" ).dialog();
  } );
  </script>
</head>
<body>

<div id="dialog" title="Basic
  <p>This is the default dial
  The dialog window can be moved, resized and closed with the 'x' icon.</p>
</div>


</body>
</html>
```

Basic dialog ✖

This is the default dialog which is useful for displaying information. The dialog window can be moved, resized and closed with the 'x' icon.



```
  <title>jQuery UI Menu - Default functionality</title>
  <link rel="stylesheet" href="//code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css">
  <link rel="stylesheet" href="/resources/demos/style.css">
  <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>
  <script>
  $( function() {
    $( "#menu" ).menu();
  } );
  </script>
  <style>
  .ui-menu { width: 150px; }
  </style>
</head>
<body>
<ul id="menu">
  <li class="ui-state-disabled"><div>Toys (n/a)</div></li>
  <li><div>Books</div></li>
  <li><div>Clothing</div></li>
  <li><div>Electronics</div>
    <ul>
      <li class="ui-state-disabled"><div>Home Entertainment</div></li>
      <li><div>Car Hifi</div></li>
      <li><div>Utilities</div></li>
    </ul>
  </li>
  <li><div>Movies</div></li>
  <li class="ui-state-disabled"><div>Specials (n/a)</div></li>
</ul>
</body>
</html>
```

Reference

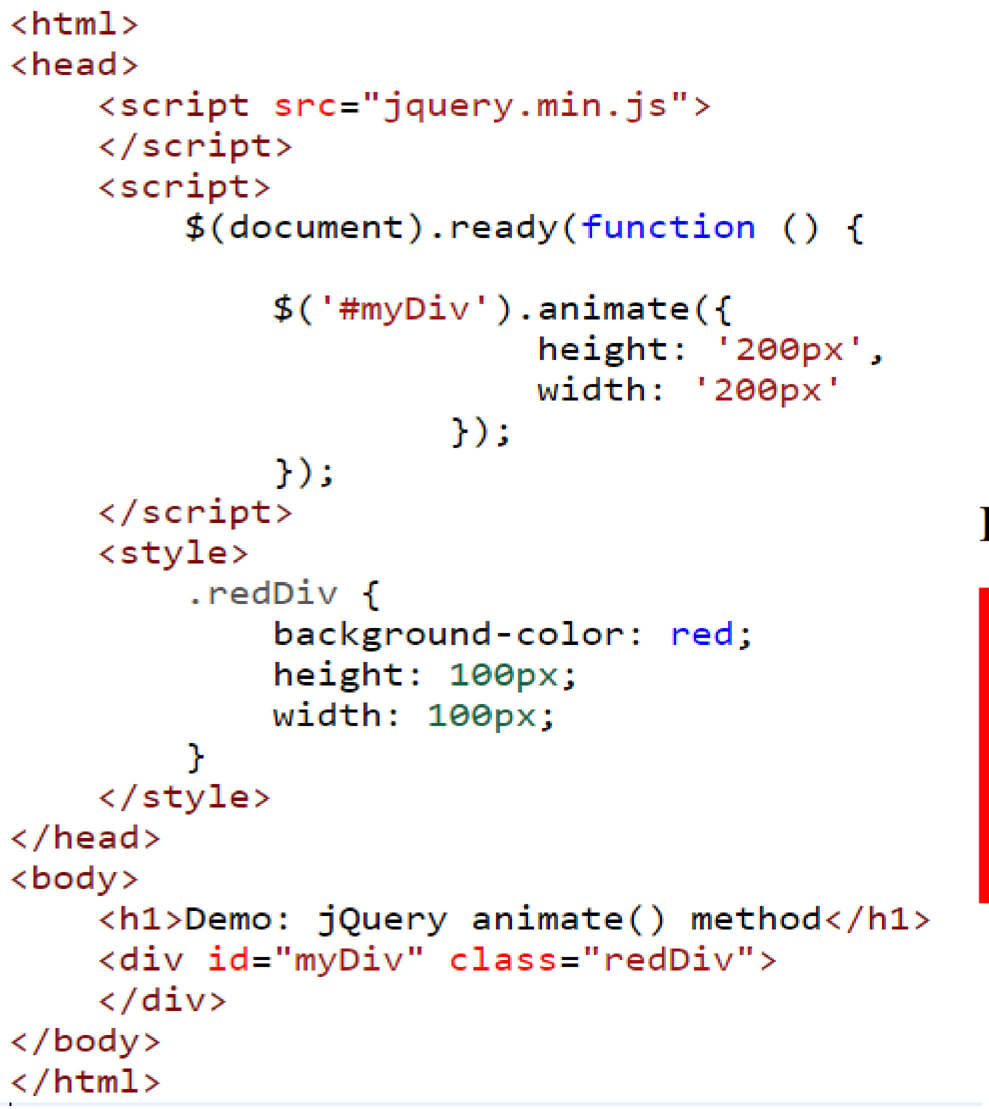
- https://jqueryui.com/

JQuery animation

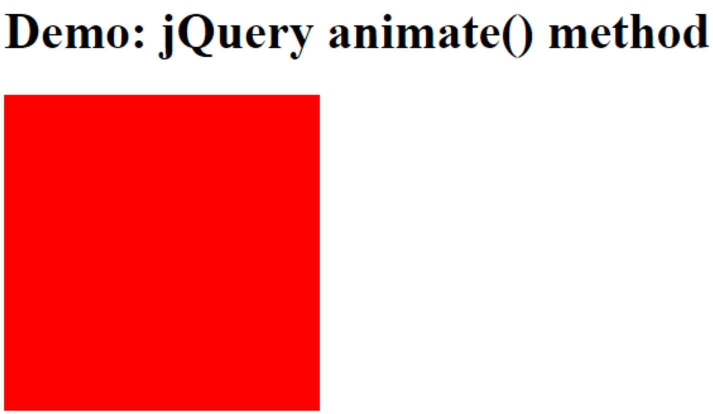
- jQuery includes methods which give special effects to the elements on hiding, showing, changing style properties, and fade-in or fade-out operation. These special effect methods can be useful in building an interactive user interface.

jQuery Methods for Special Effects	Description
animate()	Perform custom animation using element's style properties.
queue()	Show or manipulate the queue of functions to be executed on the specified element.
stop()	Stop currently running animations on the specified element(s).
fadeIn()	Display specified element(s) by fading them to opaque.
fadeOut()	Hides specified element(s) by fading them to transparent.
fadeTo()	Adjust the opacity of the specified element(s)
fadeToggle()	Display or hide the specified element(s) by animating their opacity.

JQuery animation



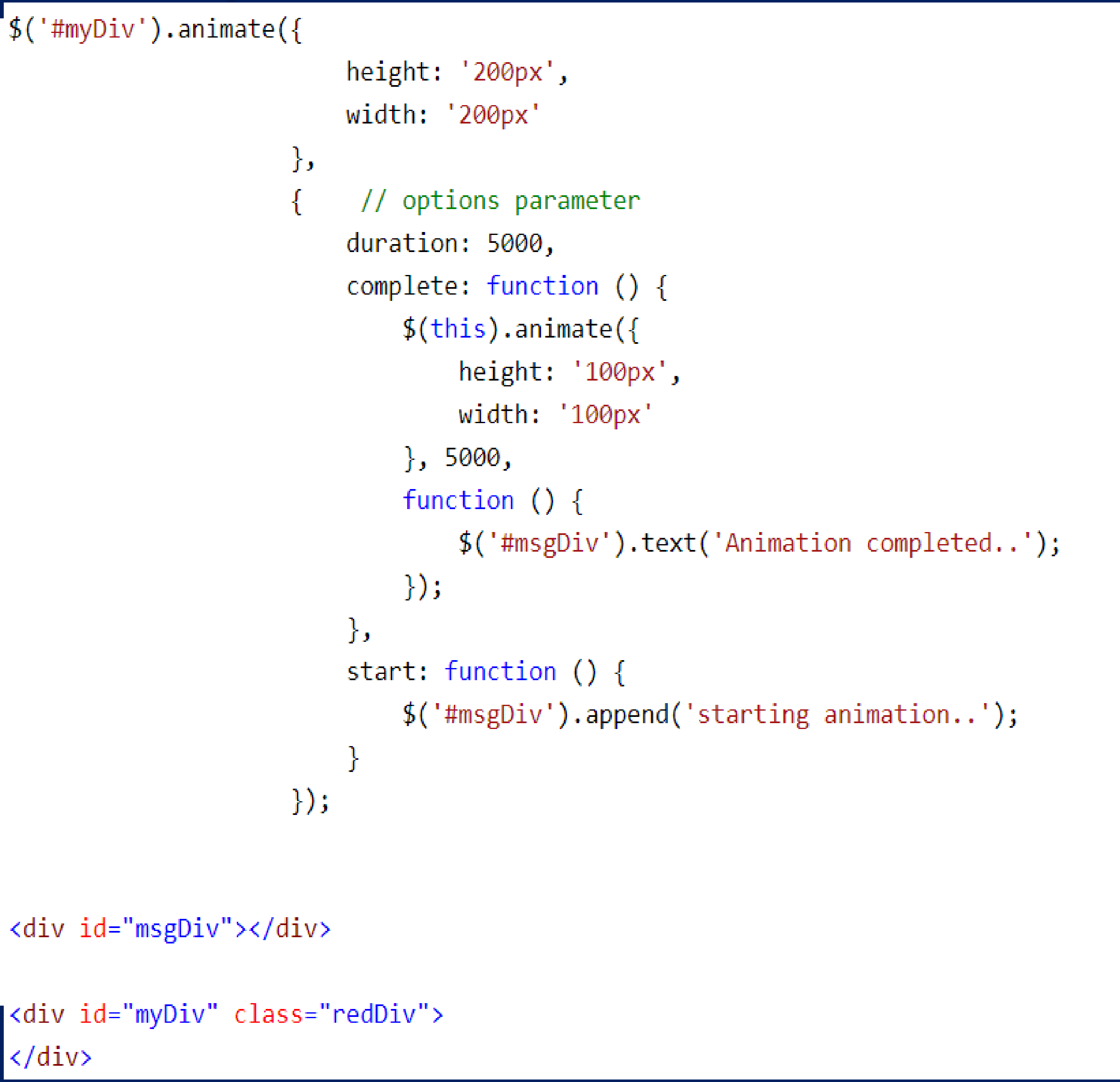
```
<html>
<head>
    <script src="jquery.min.js">
    </script>
    <script>
        $(document).ready(function () {

            $('#myDiv').animate({
                        height: '200px',
                        width: '200px'
                    });
            });
    </script>
    <style>
        .redDiv {
            background-color: red;
            height: 100px;
            width: 100px;
        }
    </style>
</head>
<body>
    <h1>Demo: jQuery animate() method</h1>
    <div id="myDiv" class="redDiv">
    </div>
</body>
</html>
```



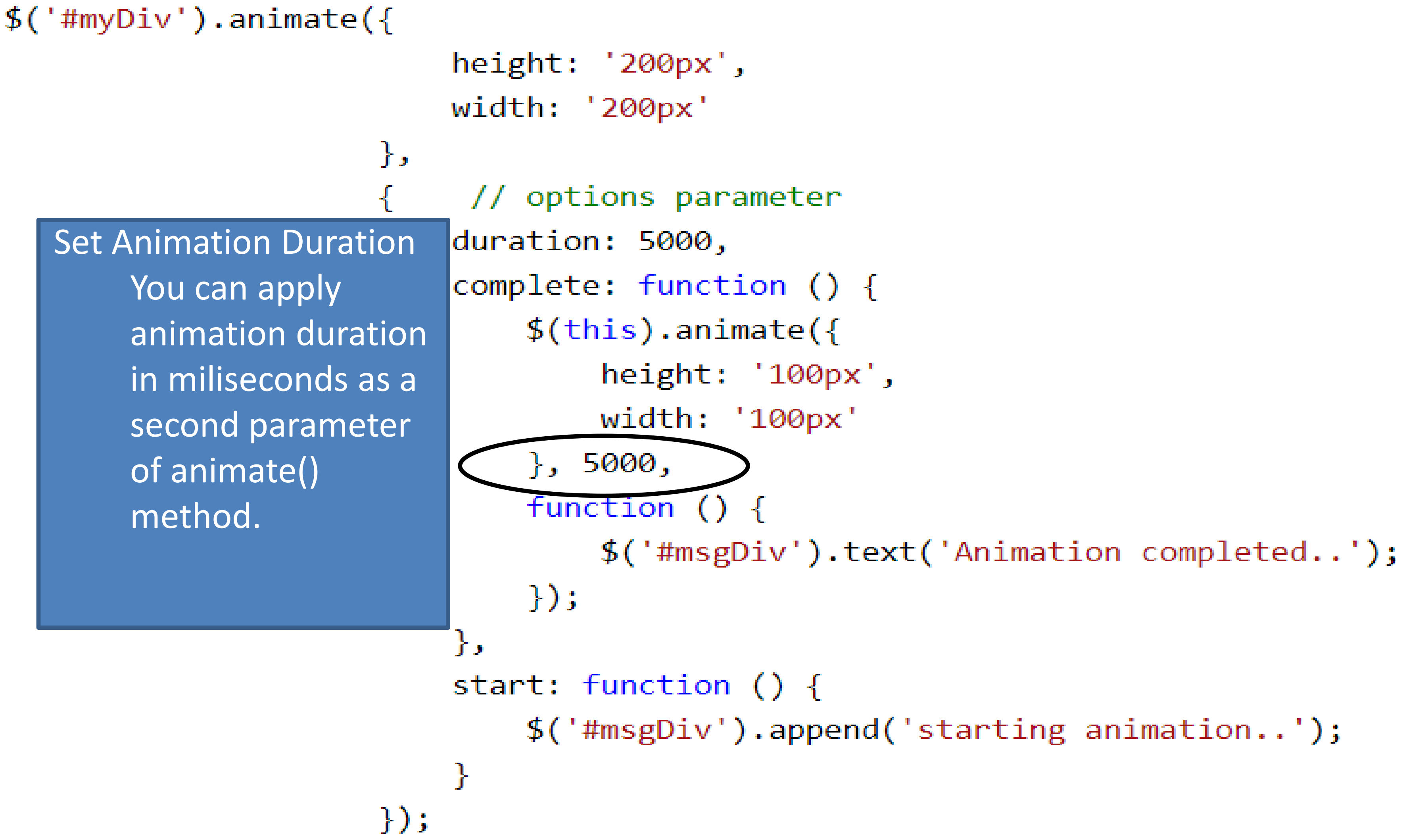
Demo: jQuery animate() method

JQuery animation

- Following Jquery animation brings movement affect in the previous code



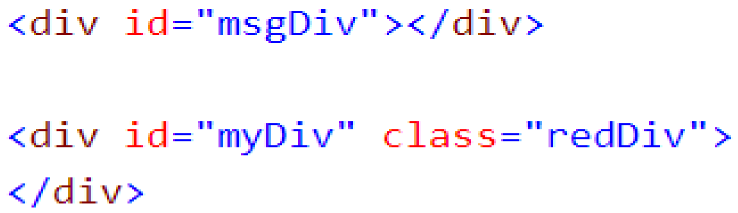
```
$('#myDiv').animate({
                        height: '200px',
                        width: '200px'
                    },
                    {    // options parameter
                        duration: 5000,
                        complete: function () {
                            $(this).animate({
                                height: '100px',
                                width: '100px'
                            }, 5000,
                            function () {
                                $('#msgDiv').text('Animation completed..');
                            });
                        },
                        start: function () {
                            $('#msgDiv').append('starting animation..');
                        }
                    });


<div id="msgDiv"></div>


<div id="myDiv" class="redDiv">
</div>
```



```
$('#myDiv').animate({
                        height: '200px',
                        width: '200px'
                    },
                    {    // options parameter
                        duration: 5000,
                        complete: function () {
                            $(this).animate({
                                height: '100px',
                                width: '100px'
                            }, 5000,
                            function () {
                                $('#msgDiv').text('Animation completed..');
                            });
                        },
                        start: function () {
                            $('#msgDiv').append('starting animation..');
                        }
                    });
```

Set Animation Duration

You can apply animation duration in miliseconds as a second parameter of animate() method.



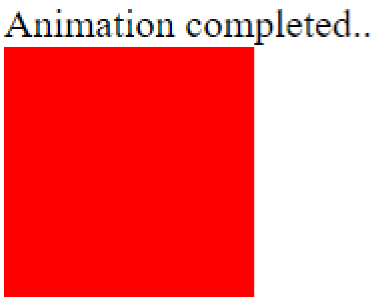
```
<div id="msgDiv"></div>

<div id="myDiv" class="redDiv">
</div>
```

```
$('#myDiv').animate({
                        height: '200px',
                        width: '200px'
                    },
                    {    // options parameter
                        duration: 5000,
                        complete: function () {
                            $(this).animate({
                                height: '100px',
                                width: '100px'
                            }, 5000,
                            function () {
                                $('#msgDiv').text('Animation completed..');
                            });
                        },
                        start: function () {
                            $('#msgDiv').append('starting animation..');
                        }
                    });
```

Set Callback Function

- Callback functions displays message once an animation completes.

```
<div id="msgDiv"></div>

<div id="myDiv" class="redDiv">
</div>
```

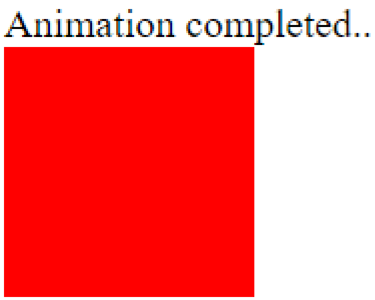

Animation completed..

Specify Animation Options

You can specify various options as JSON object. The options include duration, easing, queue, step, progress, complete, start, done and always.

```
$('#myDiv').animate({
                        height: '200px',
                        width: '200px'
                    },
                    {     // options parameter
                        duration: 5000,
                        complete: function () {
                            $(this).animate({
                                height: '100px',
                                width: '100px'
                            }, 5000,
                            function () {
                                $('#msgDiv').text('Animation completed..');
                            });
                        },
                        start: function () {
                            $('#msgDiv').append('starting animation..');
                        }
                    });
```

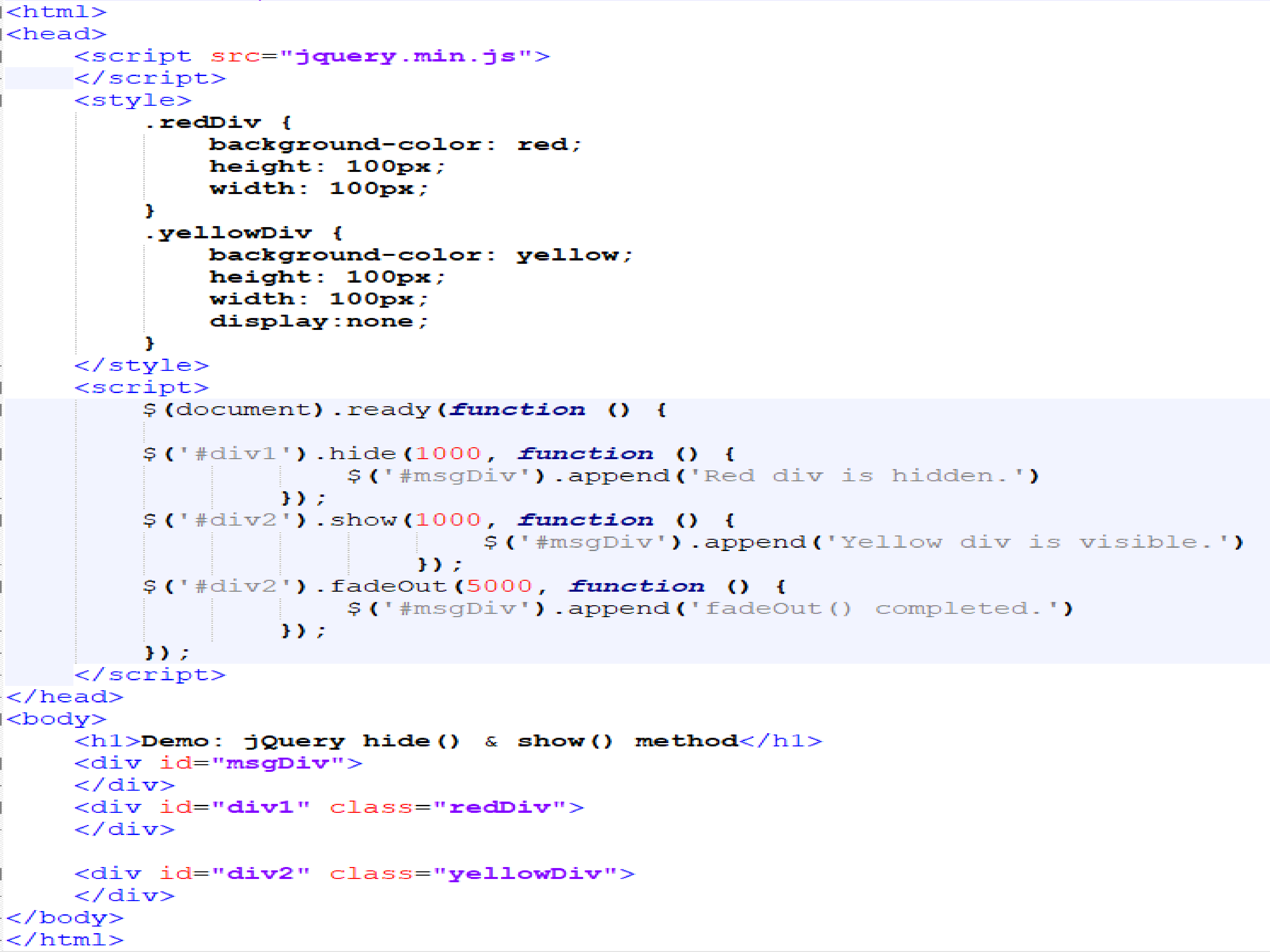
```
<div id="msgDiv"></div>

<div id="myDiv" class="redDiv">
</div>
```



Animation completed..

jQuery queue

- jQuery queue() Method
  - The jQuery queue() method shows or manipulates the queue of special effect functions to be executed on the specified element.



```
<html>
<head>
    <script src="jquery.min.js">
    </script>
    <style>
        .redDiv {
            background-color: red;
            height: 100px;
            width: 100px;
        }
        .yellowDiv {
            background-color: yellow;
            height: 100px;
            width: 100px;
            display:none;
        }
    </style>
    <script>
        $(document).ready(function () {

        $('#div1').hide(1000, function () {
                    $('#msgDiv').append('Red div is hidden.')
                });
        $('#div2').show(1000, function () {
                            $('#msgDiv').append('Yellow div is visible.')
                        });
        $('#div2').fadeOut(5000, function () {
                    $('#msgDiv').append('fadeOut() completed.')
                });
        });
    </script>
</head>
<body>
    <h1>Demo: jQuery hide() & show() method</h1>
    <div id="msgDiv">
    </div>
    <div id="div1" class="redDiv">
    </div>

    <div id="div2" class="yellowDiv">
    </div>
</body>
</html>
```

Reference to slides

- Reference
  - https://www.tutorialsteacher.com/jquery/jquery-animation