JQuery 动手实验

Agenda

① JQuery Introduction

② JQuery in practice

What is jQuery?

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.

What is jQuery ?

jQuery is a JavaScript library that provides an easy way for developers to add JavaScript to their websites.

jQuery is an open source and cross-platform JavaScript library that can help web developers perform document traversal and manipulation, event handling, animation, Ajax, applying styles, and more.

jQuery Website: https://jquery.com

jQuery benefit

- Add collapse/expandable content.

- Add animation

- Change CSS styles dynamically

- Perform Ajax requests (i.e. dynamically pull data from another location without refreshing the page)

- Create widgets for your site

- General HTML/DOM manipulation

The ready() Method

- jQuery's ready() method allows you to run code as soon as the page's Document Object Model (DOM) becomes safe to manipulate.

- If you don't include this method (or some other equivalent), your code will run as soon as the browser encounters it.

- This could cause problems if your code tries to manipulate an object that hasn't loaded yet.

The ready() Method

As of jQuery 3.0, only the first syntax is recommended; the other syntaxes still work but are deprecated.

```javascript
// Example 1
$(function() {
    ...
});

// Example 2
$( document ).ready(function() {
    ...
});

// Example 3
$().ready( handler )
    ...
});
```

jQuery syntax

The jQuery syntax is very straightforward and allows you to add advanced functionality to your website with a minimum of code.

```
$(function() {
  $( "p" ).text( "Hello" );
});
```

Probably one of the most different things is that each line of code starts with dollar signs. These dollar signs are part of the jQuery syntax.

About the Dollar Sign ($)

■ The $ (dollar sign) is used to indicate that the following code is going to be jQuery. This helps distinguish between jQuery and regular JavaScript.

■ The $ is actually a shortcut for jQuery. The jQuery library is contained within the jQuery namespace, and so any jQuery code can also start with jQuery.

```javascript
// Example 1
$(function() {
    $( "p" ).text( "Hello" );
});

// Example 2
jQuery(function() {
    jQuery( "p" ).text( "Hello" );
});
```

Selectors

The basic concept of jQuery is, you select an element, then perform an action against that element.

```javascript
// Select all "p" elements and write "Hello"
$( "p" ).text( "Hello" );

// Change the color of all "p" elements to red
$( "p" ).css( "color", "red" );

// Hide all elements with the ".shy" class
$( ".shy" ).hide();

// Show the element with the "#nav" id
$( "#nav" ).show();
```

Events:

- jQuery uses events to determine when a block of code should run.

- Events are triggered when something happens within the DOM. Some events are triggered by user actions (clicks on an element, moves the mouse, etc), other events are triggered by the browser (the page has loaded, an animation has finished running).

- When you write jQuery/JavaScript, you need to specify when the code should run. If you don't do this, then it will simply run when the browser loads it.

- **Running a script as soon as the window loads isn't always desirable**. Most of the time you will only want the code to run once a certain event has occurred.
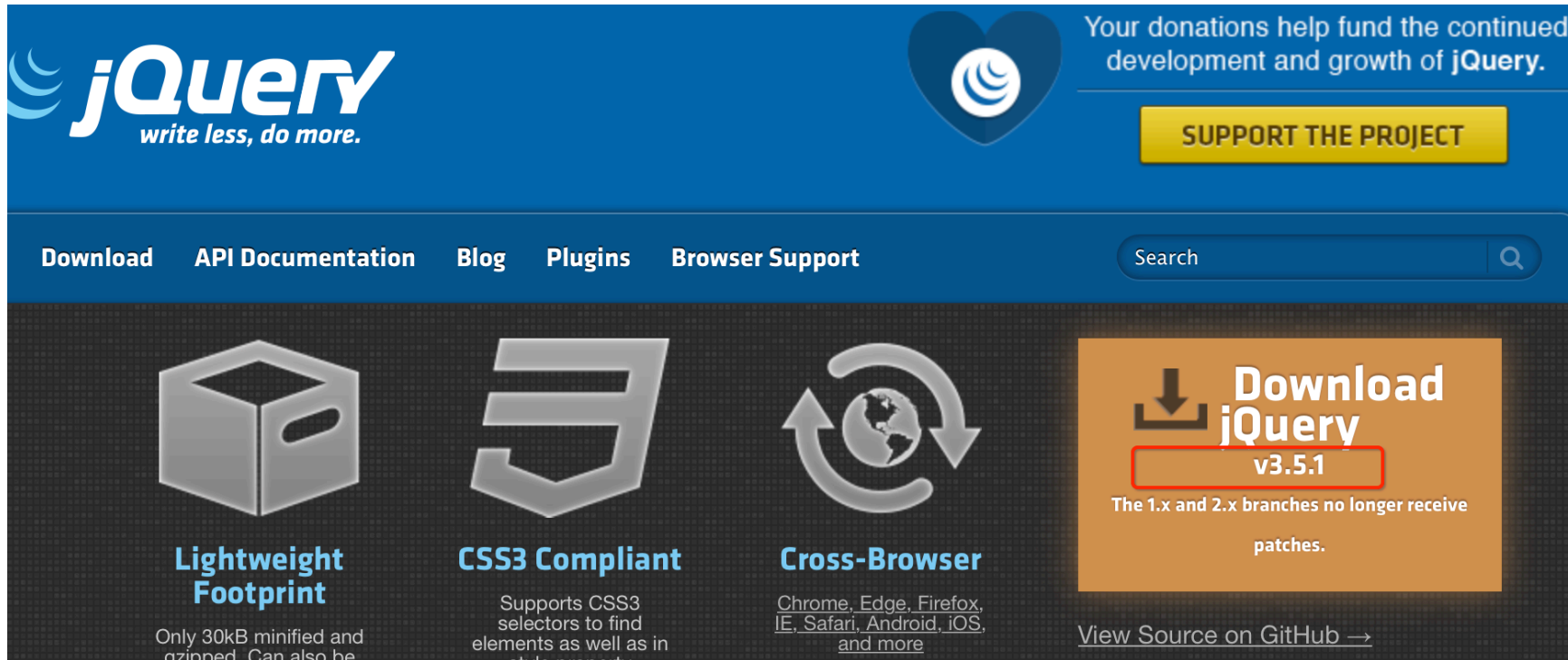
jQuery 动手实验

如何引入 jQuery ？

In order to use jQuery, you need to include the jQuery library in your web page.

https://jquery.com/download/

https://jquery.com

最新版本： 3.5.1

如何引用 jQuery？ —— 方法1： Download jQuery：

https://jquery.com/download/

设置 my favorite

compressed file.

To locally download these   Save as...

menu.
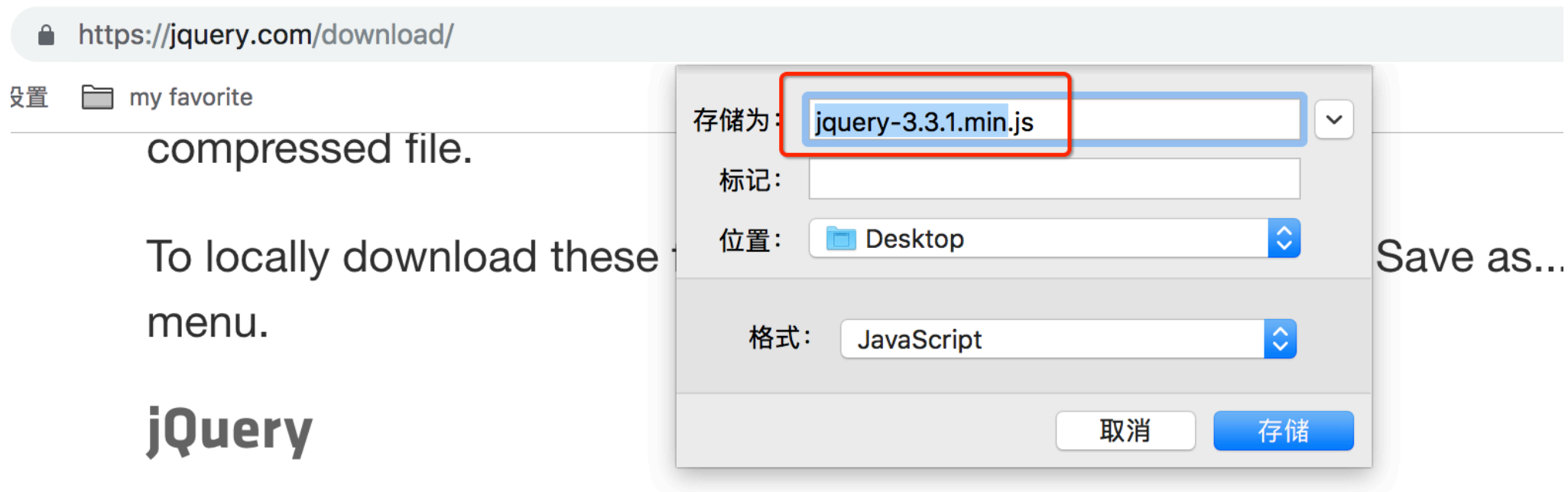
jQuery

For help when upgrading jQuery, please see the upgrade guide most rel

version. We also recommend using the jQuery Migrate plugin.

Download the compressed, production jQuery 3.3.1

存储为： jquery-3.3.1.min.js

标记：

位置： Desktop

格式： JavaScript

取消 存储

Be sure to place the file in a directory within your website, then link to it using the [script](#) element.

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

it's usually a good idea to keep the file name the same as when you downloaded it, as it contains the jQuery version

CDN 镜像资源推荐

https://www.**bootcdn.cn**/

版本：3.5.0

</> 复制 <script> 标签　　🔗 复制链接

🔒 https://cdn.bootcdn.net/ajax/libs/jquery/3.5.0/jquery.js　　开发版本

</> 复制 <script> 标签　　🔗 复制链接

🔒 https://cdn.bootcdn.net/ajax/libs/jquery/3.5.0/jquery.min.js　　生产版本

🔗 复制链接　　</> 复制 <script> 标签　　🔗 复制链接

🔒 https://cdn.bootcdn.net/ajax/libs/jquery/3.5.0/jquery.slim.js

🔗 复制链接　　</> 复制 <script> 标签　　🔗 复制链接

🔒 https://cdn.bootcdn.net/ajax/libs/jquery/3.5.0/jquery.slim.min.js

点击 复制链接， copy 到工程中

```
<script src="https://cdn.bootcdn.net/ajax/libs/jquery/3.5.0/jquery.js">
</script>
```

Case 1: Selector use case

选择器：

```
<script src="https://cdn.bootcss.com/jquery/3.4.0/jquery.min.js">
</script>
```

1. 创建 html 文件

2. 引入 jQuery CDN

click me

Hello World

```
<body>
    <script>
    $(function() {
        $("button").click(function() {
            $( "p" ).text( "Hello World" );
        })
    })
    </script>

    <button> click me </button>
    <p> </p>
</body>
```

Case1
完整代码

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <title>Document</title>

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

</head>
<body>
    <script>
    $(function() {
        $("button").click(function() {
            $( "p" ).text( "Hello World" );
        })
    })
    </script>

    <button> click me </button>
    <p> </p>
</body>
</html>
```
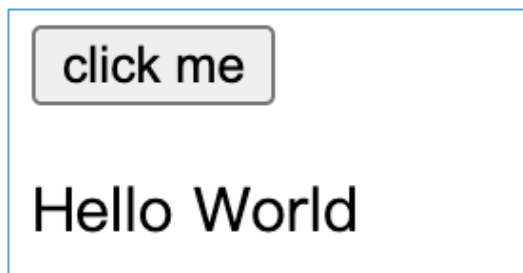
Use jQuery to traverse the DOM with ease

- jQuery includes a whole range of methods that make it easy to traverse （遍历） the DOM.

- The *DOM* (document object model) is the interface that enables JavaScript to interact with a web page's content.

- Whenever we use JavaScript (or jQuery) to inspect or manipulate elements on the web page, we're accessing the DOM.

*The **DOM** can be thought of as a **tree-like** structure, with each element being a separate node on that tree.*
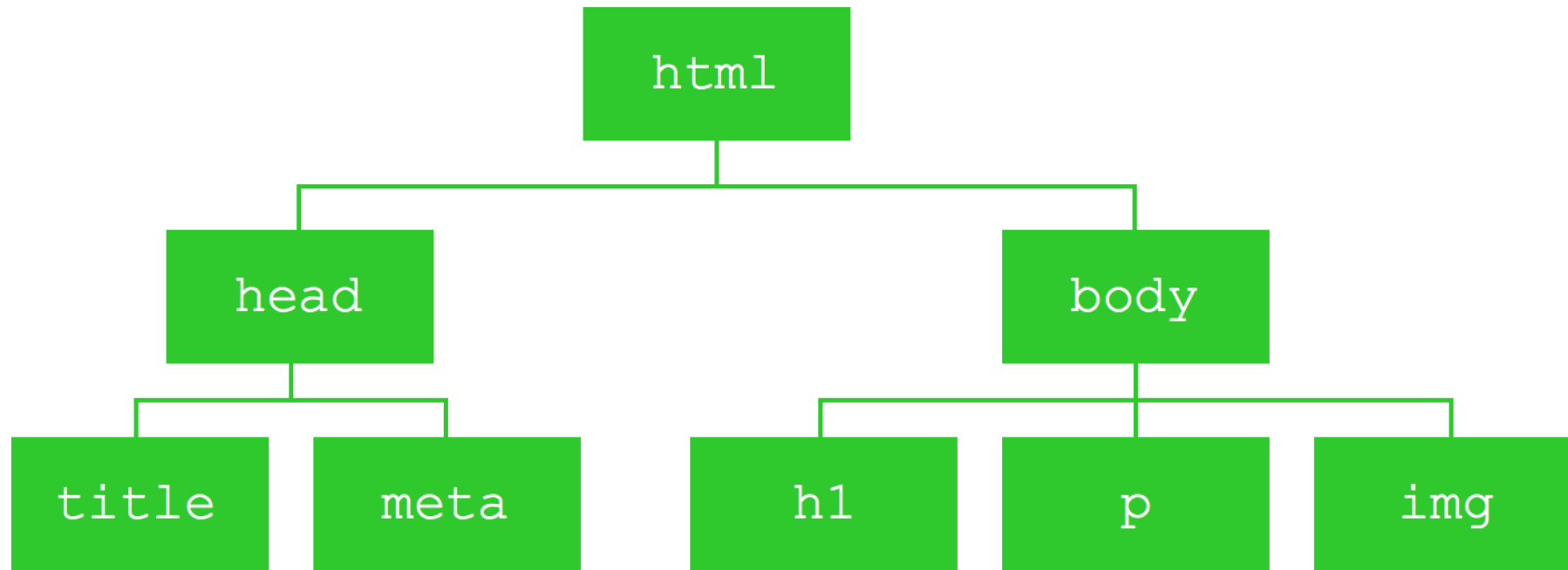
- DOM traversal （遍历） basically means moving around the DOM that makes up the web page. When traversing the DOM, you can move back up the document tree to any desired element.

- You can also move down the hierarchy to a given child node, or across to a **sibling node** （同级节点）

- This enables you to navigate through an HTML page in order to find the exact spot at which you need to gather some data or make a change.

Traversing the DOM enables you to do things like:

- Filter elements based on a given criteria.

- Insert new elements at a particular place.

- Remove elements that match a given criteria.

- Highlight one or more elements within a group of elements.

The find() Method

- The find() method enables you to get the descendants of each element in the current set of matched elements, filtered by a selector, jQuery object, or element.

```
$( "ul" ).find( "li ul" ).css( "background-color", "yellow" );
```

Case 2： DOM Traversal（遍历）

效果图：点击 button，变色

Highlight all nested lists

- Apples
    - Big ones
    - Juicy ones
    - Red ones
- Oranges
- Papaya
    - Papaya carica
    - Carica
    - Carica pubescens
- Lychee
- Rambutan
- Passionfruit
- Mango

Case 2: 完整代码

注意： 引入 jQuery

```html
<script>
    $( function() {
      $( "button" ).click( function() {
        $( "ul" ).find( "li ul" ).css( "background-color", "yellow" );
      });
    });
</script>

<button>Highlight all nested lists</button>

<ul>
  <li>Apples
    <ul>
      <li>Big ones</li>
      <li>Juicy ones</li>
      <li>Red ones</li>
    </ul>
  </li>
  <li>Oranges</li>
  <li>Papaya
    <ul>
      <li>Papaya carica</li>
      <li>Carica</li>
      <li>Carica pubescens</li>
    </ul>
  </li>
  <li>Lychee</li>
  <li>Rambutan</li>
  <li>Passionfruit</li>
  <li>Mango</li>
</ul>
```

Case 3:   html() method

点击 button ， 显示不同内容：

Click me!

Don't do it!

Click me!

Hey! I thought I warned you not to do that!

The html() Method

The html() method enables you to get the HTML contents of the first element in the set of matched elements or set the HTML contents of every matched element.

the following example sets the HTML content of the .warning class.

```
$( ".warning" ).html( "<p style='color:red;'><strong>2nd Warning</strong></p>" );
```

Case 4：　完整代码：

注意：要操作
的元素，事先已
创建好了。

```html
<script>
    $( function() {
      $( "button" ).click( function() {
        $( ".warning" ).html( "<p style='color:red;
        font-size:larger;'><strong>Hey!</strong> I
        thought I warned you not to do that!</p>" );
      });
    });
</script>


<button>Click me!</button>
<div class="warning">
  <p>Don't do it!</p>
</div>
```

Case 4:   Add/Remove Classes with jQuery

jQuery provides methods that allow you to add and remove classes that are contained in your style sheet

The jQuery addClass(), removeClass(),and toggleClass() methods enable you to dynamically add and remove classes on HTML elements.

This can be useful when applying multiple style declarations, and it allows you to keep your styles within your style sheet while using jQuery to access them.

The addClass() Method

- Here's how to use the addClass() method:

```
$( this ).addClass( "box" );
```

addClass 效果图：

Click me...

No, click me!

Click me...

No, click me!

```
<style>
    div {
        background: limegreen;
        color: white;
        padding: 10px;
        margin: 20px;
    }
    .different {
        border: px solid orange;
        background: gold;
        color: black;
    }
</style>
```

Case4：完整代码： body 部分

```html
<body>
  <script>
    $(function () {
      $("div").click(function () {
        $(this).addClass("different");
      });
    });
  </script>
  <div>
    Click me...
  </div>
  <div>
    No, click me!
  </div>
</body>
```

Case 5:   Ajax Request

■Ajax (or AJAX) stands for Asynchronous JavaScript And XML.

■ Ajax allows us to dynamically populate a web page using remote data without having to reload the page.

The load() Method

- jQuery's load() method is the easiest way to do an Ajax call. It allows you to load data from the server and place the returned HTML into the matched element.

- To use the load() method, pass the file name in as a parameter. Like this:

```
$( "#data" ).load( "/latestData.html" );
```

Using a Callback Function

You can provide a "complete" callback function that only runs after the HTML insertion has succeeded.

For example, you could use this callback function to display a "success" message to the user.

创建一个 JSON 文件： ./data/test.json

```json
{
    "artists": [
        {
         "artistname": "Leonard Cohen",
         "born": "1934"
        },

        {
        "artistname": "Joe Satriani",
        "born": "1956"
        },

        {
        "artistname": "Snoop Dogg",
        "born": "1971"
        }
    ]
}
```

Case5：完整代码：Ajax callback function

```
<body>
  <script>
    $(function () {
      $("button").click(function () {
        $("#data").load("./data/test.json", function () {
          $("#status").html("<h1 style='color:tomato'>Done!</h1>");
        });
      });
    });
  </script>
  <button>Load Latest Data</button>
  <div id="data"></div>
  <div id="status"></div>
</body>
```

疑问： 为何没有数据？

开发工具 -> console 查看数据异常

from origin 'null' has been blocked by **CORS** policy: Cross origin requests are only supported for protocol schemes: http, data, chrome, chrome-extension, https.

这是因为跨域问题！

top ▾   ⊙   Filter   Default levels ▾

⊗ Access to XMLHttpRequest at '<u>file:///Users/S</u>   <u>05-case-jquery.html:1</u>
<u>hared/Relocated%20Items/Security/mymac/70-NCUT/01-web-full-stack-2</u>
<u>020/2020-10-07-jQuery/02-code-jQuery/data/test.json</u>' from origin
'null' has been blocked by CORS policy: Cross origin requests are
only supported for protocol schemes: http, data, chrome, chrome-
extension, chrome-untrusted, https.

⊗ Failed to load resource: net::ERR_FAILED   <u>data/test.json:1</u>

>

Case 6: How to do Animation with jQuery?

animate() method

- jQuery includes the animate() method that allows you to create an animation.

- More specifically, the animate() method enables you to perform a custom animation on a set of numeric CSS properties.

- The animate() method accepts many parameters but the only required parameter is the object of CSS properties.

实现一个渐变的动画过程

Run Animation!

Animation

Run Animation!

Animation

Case6: 完整代码

```
<body>
  <script>
    $(function () {
      $("button").click(function () {
        $("#animation").animate({
          fontSize: "3em",
          letterSpacing: "+=0.3em"
        }, 1000);
      });
    });
  </script>
  <button>Run Animation!</button>
  <div id="animation">Animation</div>
</body>
```

Case 7： CSS 条件变换

Click me...

Click me...

场景：根据元素当前的 CSS，设置新的CSS

```html
<script>
$(function () {
    $("#1st").click(function () {
        if ($(this).attr("class") == "old")
            $(this).addClass("new");
    });
});
</script>

<div id="1st" class="old">
  Click me...
</div>
```

小结：

1. jQuery – DOM Traversal

2. jQuery – Add/Remove Class

3. jQuery – Ajax Request

4. jQuery - Animation

感 谢 聆 听