Chapter 7

How to work with links, images, and timers

Objectives

- How to work with links and images
- The Image Swap application
- How to use timers
- The Slide Show application

How to work with links and images

Common tasks when working with links and images are cancelling the action of the click event and preloading images.

How to cancel the default action of an event

- Sometime, when user click on web element a default action is performed. To prevent default action you can cancel them.

- **Common HTML elements that have default actions for click event**

Tag	Default action for the click event
a	Load the page or go to the placeholder in the href attribute.
input	Submit the form if the type attribute is set to submit.
input	Reset the form if the type attribute is set to reset.
button	Submit the form if the type attribute is set to submit.
button	Reset the form if the type attribute is set to reset.

How to cancel the default action of an event (cont.)

DOM-compliant code that cancels the default action

```
var eventHandler = function (evt) {
    evt.preventDefault();
}
```

IE code that cancels the default action

```
var eventHandler = function () {
    var evt = window.event;
    evt.returnValue = false;
}
```

Browser-compatible code that cancels the default action

```
var eventHandler = function (evt) {
    // If the event object is not sent, get it
    if (!evt) { evt = window.event; }      // for IE

    // Cancel the default action
    if (evt.preventDefault) {
        evt.preventDefault();                 // for most browsers
    }
    else {
        evt.returnValue = false;          // for IE
    }
}
```

How to preload images

- When an application preloads images, it loads all of the images that it's going to need when the page loads, and it stores these images in the web browser's cache for future use.

- When the images are preloaded, the browser can display them whenever they're needed without any noticeable delay.

How to preload images(count.)

How to create and preload an Image object

How to create an Image object

```
var image = new Image();
```

How to preload an image in an Image object

```
image.src = "image_name.jpg";
```

How to preload all images referenced by the href attributes of \<a\> tags

```
var links = document.getElementsByTagName("a");
var i, link, image;
for ( i = 0; i < links.length; i++ ) {
    link = links[i];
    image = new Image();
    image.src = link.href;
}
```

The Image Swap application

The Swap Image application

- The User Interface

The Swap Image application(cont.)

- The HTML

```html
<main>
    <h1>Fishing Images</h1>
    <p>Click on an image to enlarge.</p>
    <ul id="image_list">
        <li><a href="images/release.jpg" title="Catch and Release">
            <img src="thumbnails/release.jpg" alt=""></a></li>
        <li><a href="images/deer.jpg" title="Deer at Play">
            <img src="thumbnails/deer.jpg" alt=""></a></li>
        <li><a href="images/hero.jpg" title="The Big One!">
            <img src="thumbnails/hero.jpg" alt=""></a></li>
        <li><a href="images/bison.jpg" title="Grazing Bison">
            <img src="thumbnails/bison.jpg" alt=""></a></li>
    </ul>
    <h2 id="caption">Catch and Release</h2>
    <p><img id="main_image" src="images/release.jpg" alt=""></p>
</main>
```

The Swap Image application(cont.)

- The JavaScript

```javascript
window.onload = function() {
    var listNode = $("image_list");           // the ul element
    var captionNode = $("caption");           // the h2 element
    var imageNode = $("main_image");          // the main img element

    var imageLinks = listNode.getElementsByTagName("a");
    // process image links
    var i, image, link;
    for ( i = 0; i < imageLinks.length; i++ ) {
        // preload image
        image = new Image();
        image.src = imageLinks[i].getAttribute("href");

        // attach event handler
        imageLinks[i].onclick = function(evt) {
            link = this; // 'this' = the link that was clicked
            // set new image and caption
            imageNode.src = link.getAttribute("href");
            captionNode.firstChild.nodeValue = link.getAttribute("title");
            // cancel the default action of the event
            if (!evt) { evt = window.event; }
            if (evt.preventDefault) { evt.preventDefault(); }
            else { evt.returnFalse = false; }
        };
    }

    // set focus on first image link
    imageLinks[0].focus();
};
```

How to use timers

How to use a one-time timer

- Timer lets you execute a function after a specified period of time.

- Two methods for working with a timer that calls a function one

```
setTimeout( function, delayTime )        // creates a timer
clearTimeout ( timer )                    // cancels a timer
```

How to use a one-time timer(cont.)

- The FAQs application with an upgrade that start after 5 seconds

JavaScript FAQs

A new version is available!
  Upgrade will start in 5 seconds! `Cancel Upgrade`

✚ **What is JavaScript?**
✚ **What is jQuery?**
✚ **Why is jQuery becoming so popular?**

- HTML

```html
<fieldset id="upgrade">
    <legend>A new version is available!</legend>
    <p>Upgrade will start in 5 seconds!
        <input type="button" id="cancel" value="Cancel Upgrade">
        <span id="message"> </span></p>
</fieldset>
```

How to use a one-time timer(cont.)

- The code JavaScript

```
var timer;

var startUpdate = function(){
    $("cancel").setAttribute("class","hidden");
    $("message").firstChild.nodeValue ="Downloading starting...";

    /*Code perform upgrade go here*/

    $("upgrade").setAttribute("class","hidden");
};

var cancelUpgrade = function(){
    clearTimeout(timer);
    $("upgrade").setAttribute("class","hidden");
}

window.onload = function(){
    timer= setTimeout(startUpdate, 5000);
    $("cancel").onclick = cancelUpgrade;
}
```

How to use an interval timer

Two methods for working with a timer that calls a function repeatedly

```
setInterval( function, intervalTime )      // creates a timer
clearInterval ( timer )                     // cancels a timer
```

The FAQs application with a counter at the bottom

jQuery FAQs

✛ **What is jQuery?**

✛ **Why is jQuery becoming so popular?**

✛ **Which is harder to learn: jQuery or JavaScript?**

Number of seconds on page: 8

The HTML for the counter

```
<h3>Number of seconds on page: <span id="counter">0</span></h3>
```

How to use an interval timer (Cont.)

- How to use the setInterval() method to add a counter to a page

```javascript
var timer;
var counter=0;

//Create the function that the timer call
var updateCounter = function(){
    counter++;
    $("counter").firstChild.nodeValue = counter;
};

//Create a timer that calls the updateCounter function repeatedly
window.onload = function(){
    timer= setInterval(updateCounter, 1000);
}
```

- How to cancel the timer

```
clearInterval(timer);
```

How to use an interval timer (Cont.)

- How to use an anonymous function with the setInterval() method

```javascript
var timer;
var counter=0;

window.onload = function(){
    timer= setInterval( function(){
        counter++;
        $("counter").firstChild.nodeValue= counter;
    },
    1000);
};
```

The Slide Show application

The Slide Show application

- The User Interface

The Slide Show application

- The HTML code

```
<main>
    <h1>Fishing Slide Show</h1>
    <ul id="image_list">
        <li><a href="images/release.jpg" title="Catch and Release"></a></li>
        <li><a href="images/deer.jpg" title="Deer at Play"></a></li>
        <li><a href="images/hero.jpg" title="The Big One!"></a></li>
        <li><a href="images/bison.jpg" title="Roaming Bison"></a></li>
    </ul>

    <p><img src="images/release.jpg" alt="Catch and Release" id="image"></p>
    <h2 id="caption">Catch and Release</h2>
</main>
```

The Slide Show application

- The JavaScript code

```javascript
window.onload = function () {
    var listNode = $("image_list");      // the ul element
    var captionNode = $("caption");      // the h2 element for the caption
    var imageNode = $("image");          // the img element for the show

    var links = listNode.getElementsByTagName("a");

    // Process image links
    var i, linkNode, image;
    var imageCache = [];
    for ( i = 0; i < links.length; i++ ) {
        linkNode = links[i];

        // Preload image and copy title properties
        image = new Image();
        image.src = linkNode.getAttribute("href");
        image.title = linkNode.getAttribute("title");
        imageCache[imageCache.length] = image;
    }

    // Start slide show
    var imageCounter = 0;
    var  timer = setInterval(
        function () {
            imageCounter = (imageCounter + 1) % imageCache.length;
            image = imageCache[imageCounter];
            imageNode.src = image.src;
            captionNode.firstChild.nodeValue = image.title;
        },
        2000);
};
```

Summary

- Common tasks when working with links and images are cancelling the action of the click event and preloading images.

- Sometime, when user click on web element a default action is performed. To prevent default action you can cancel them.

- When an application preloads images, it loads all of the images that it's going to need when the page loads, and it stores these images in the web browser's cache for future use.

- Timer lets you execute a function after a specified period of time.

- You cam use timer to call function one or repeatedly by an interval.

The End.