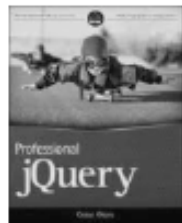# JQuery

This lecture is based on materials from:

Professional jQuery
Cesar Otero, Rob Larsen
John Wiley & Sons, Inc.

Cross Browser Incompatibility

- CSS
    - IE   `document.getElementById("header").style.styleFloat = "left";`
    - Firefox   `document.getElementById("header").style.cssFloat = "left";`

- Event handling
    - IE   `clientX, clientY, srcElement`
    - Firefox   `pageX, target, target`

- Ajax
    - IE   `xmlhttp = new XMLHttpRequest();`
    - Firefox   `xmlhttp = new ActiveXObject("Msxml2.XMLHTTP");`

Functionality

- Cross-browser compatibility
- DOM manipulation
- AJAX
- Enhanced UI widgets
- Animation and effects
- Drag and drop
- Other goodies …

Importing Library

- Debugging version
  - `<script src="http://code.jquery.com/jquery-1.8.2.js"></script>`

- Production version
  - `<script src="http://code.jquery.com/jquery-1.8.2.min.js"></script>`

Usage Model

- Select set of DOM elements
- Perform actions on them

- Main Function
  - jQuery(selector)
  - $(selector)

- Uses the same syntaxes as CSS selectors

- Examples:
  - jQuery(p)
  - $(table)
  - $(#myID)
  - $(div.important)

Example

- Element selection
- Iteration
- DOM update
- Event handler

```html
<!DOCTYPE html>
<html lang="eng">
    <head>
        <title>JQuery Examples</title>
        <meta charset="utf-8">
        <script>



        </script>
    </head>
    <body>
        <h1>A Nice Table</h1>
        <table id="multiplicationTable" border="1">
          <tr><td>1</td><td>2</td></tr>
          <tr><td>3</td><td>4</td></tr>
        </table>
        <form>
          <input type="button" id="printDOM" value="Press to Print DOM" onclick="showDOM();"/>
        </form>
        <span id="result"></span>
    </body>
</html>
```

Chaining

- Many jQuery calls return a set of DOM elements
  - $, find, addClass, removeClass
- Possible to chain multiple operations together

Generating HTML

```html
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
        <style>
            .mytitle {
                color: red;
            }
        </style>
        <script src="http://code.jquery.com/jquery-latest.js"></script>
        <script>
          $(function() {
                $("<h1>Hello World!<h1>")
                    .appendTo("body")
                    .attr("class","mytitle")
          });
        </script>
    </head>
    <body>
    </body>
</html>
```

```html
<!--

Task: Add spans around each word then add a hover and italicize words with the letter t.

Based on example from: http://api.jquery.com/find/

 -->

<!DOCTYPE html>
<html>
<head>
    <style>
      .hilite { background:yellow; }
    </style>
    <script src="http://code.jquery.com/jquery-latest.js"></script>
    <script>
      $(function() {
          var newText = $("p").text()
                             .split(" ")
                             .join("</span> <span>");
          newText = "<span>" + newText + "</span>";

          $("p")
            .html( newText )
            .find('span')
            .hover(function() { $(this).addClass("hilite"); },
                   function() { $(this).removeClass("hilite");})
          .end()
            .find(":contains('t')")
            .css({"font-style":"italic", "font-weight":"bolder", "color": "red"});
      });
    </script>
</head>
<body>
  <p>
  When the day is short
  find that which matters to you
  or stop believing
  </p>
</body>
</html>
```

Events

- Attaching events to DOM elements
  - one(eventHandler)
  - bind(eventName, eventHandler)
  - live(eventName, eventHandler)
  - delegate(filter,eventName,eventHandler)
- Removing event handlers
  - die()
  - unbind()
  - undelegate()
- Creating events
  - trigger()

```html
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">
    <style>
        div {
            width: 100px;
            height: 100px;
        }
        .div1 {
            background-color: blue;
        }
        .div2 {
            background-color: red;
        }

    </style>
    <script src="http://code.jquery.com/jquery-latest.js"></script>
    <script>
      $(function() {
          $(".div1").one("click", function() {
              $("body").append("<p>clicked div 1</p>");
          });
          $(".div2").bind("click", function() {
              $("body").append("<p>clicked div 2, handler 1</p>");
          });
          $(".div2").bind("click", function() {
              $("body").append("<p>clicked div 2, handler 2</p>");
          });

      });
    </script>
</head>
<body>
    <div class="div1"></div>
    <div class="div2"></div>
</body>
</html>
```

```html
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">
    <style>
        div {
            padding: 10px;
            width: 100px;
            height: 100px;
        }
        .div1 {
            background-color: blue;
        }
        .div2 {
            background-color: red;
        }
        .div3 {
            background-color: green;
        }

    </style>
    <script src="http://code.jquery.com/jquery-latest.js"></script>
    <script>
      $(function() {
          $(".div1").mouseover(function() {
              $(this).find("p").fadeIn().fadeOut();
          });

          $(".div2").mouseover(function() {
              $(this).find("p").fadeIn().fadeOut();
          });

          $(".div3").mouseover(function() {
              $(this).find("p").fadeIn().fadeOut();
          });

          $("input").click(function() {
              $("div").trigger("mouseover");
          });
      });
    </script>
</head>
<body>
    <div class="div1">
        <p>Div 1</p>
    </div>
    <div class="div2">
        <p>Div 2</p>
    </div>
    <div class="div3">
        <p>Div 3</p>
    </div>
    <input type="button" value="trigger mouseover"></input>
</body>
</html>
```