Welcome to 12-780

Advanced Python and Javascript Prototyping for Infrastructure Systems

Lecture 4: jQuery

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Outline

- Today
  - jQuery introduction
  - Query selector
  - Common Actions
  - Ajax function
  - jQuery UI

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jQuery

- A third-party library for Javascript
- Objective: Simplified common functions and easier to learn

- Features
  - HTML/DOM manipulation
  - CSS manipulation
  - HTML event methods
  - Effects and animations
  - AJAX
  - Utilities

- Usage: <script src="jquery-xx-xx.js"></script>
- CDN:
  <script src="//code.jquery.com/jquery-xx-xx.min.js"></script>

jQuery query function

- Use the CSS way to query Javascript objects

- $(selector)
  - Selector is similar with CSS selector

  - Tag name: $("p") – get all p tags
  - Class name: $(".className") – get all objects with className
  - ID: $("#objectID") – get the object by objectID
  - Variable name: $(variableName) – get the jQuery object of the javascript variable

  http://www.w3schools.com/jquery/jquery_selectors.asp

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jQuery action

- jQuery select results can be applied with action
  - $(selector).action()

  - The action will be applied to every objects in the query results.

  - $(document).ready(function(){
      // jQuery methods go here...
    });

  - Or
  - $(function(){
      // jQuery methods go here...
    });

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jQuery event

- Similar to the HTML event, but easier to assign

  - $("div").click(function(){
    // code for all click event for div tags
    });

- Common events
  - click(), dblclick()
  - mouseenter(), mouseleave()
  - mousedown(), mouseup()
  - focus(), blur()

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jQuery get/set methods

- text() – get innerText
- html() – get innerHTML
- val() – get value from the form tags
- attr("attributeName") – get the value of an attribute
- css("propertyName") – get the value of a CSS property

- text(string) – set innerText
- html(string) – set innerHTML
- val(string) – set value for the form tags
- attr("attributeName",value) – set the value of an attribute
- css("propertyName", value) – set the value of a CSS property
- css({"propertyName1":value1,…}) – set the values of several CSS properties

jQuery set methods

- Get/set methods can use a callback function

```
$(selector).text(function(index, origText){


    code....


    return newText;
});
```

- index: index of the elements in the selector array
- origText: original text in the HTML object.

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jQuery control HTML content

- append(string or HTML element): Add the content to the end of the object.

- prepend(string or HTML element): Add the content to the beginning of the object.

- after(string or HTML element): Add the content after the object.

- before(string or HTML element): Add the content before the object.

jQuery Ajax

- A simplified function to make XMLHttpRequest call

$.ajax(*settings*);

$.ajax({url:"/loadDrawings/",method:"GET", …});

- Settings is a Javascript object with the configurations
  - url: the URL to be requested
  - Method: the GET or POST method
  - async: whether this request is asynchronized or not
  - success: the function for successful request
- http://api.jquery.com/jquery.ajax/

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jQuery UI

- Another library that is built on jQuery

- Provides a set of UI components to be used directly
  - Button
  - Datepicker
  - Dialog
  - Menu
  - Progressbar
  - Slider
  - …

- http://jqueryui.com/demos/

jQuery UI

- Also provides interfaces for user interactions
  - Draggable
  - Droppable
  - Resizable
  - Selectable
  - Sortable

- Improved CSS effects

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