



COMP 4021

Internet Computing

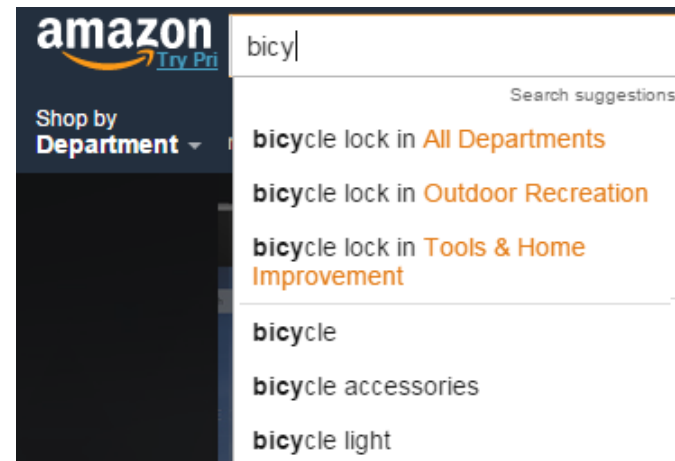
jQuery Autocomplete

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Slides created by Prof. Dik Lun LEE

What is Autocomplete?

- Autocomplete displays a list of “suggested” values as user types and allows user to a value to trigger action
 - E.g., Type in a query in Bing’s search box and see how it works



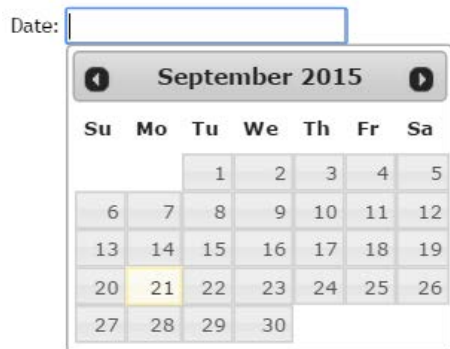
Doing Autocomplete in JavaScript

- Imagine how much work is required to implement autocomplete with JavaScript only:
 - Create event trigger for each keystroke
 - Display a text box (div) under the search box
 - Fill the box with suggestions, which most likely is obtained dynamically from the server (e.g., server returns the most popular queries matching the partial query user has typed in)
 - Handle “small things”: Do not display suggestions when user is typing very fast; backspace also updates the list

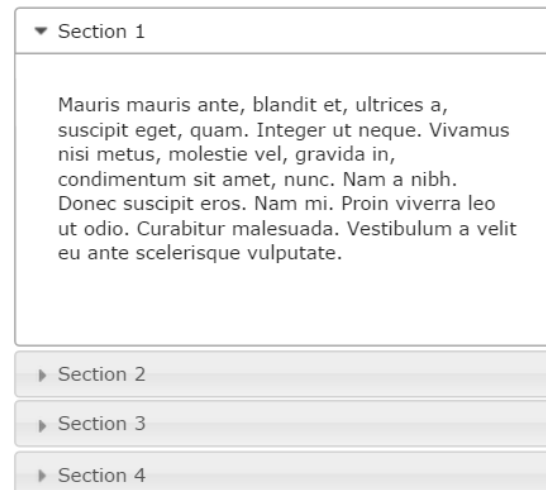
jQuery UI and Autocomplete Widget

- JQuery autocomplete is a **widget** under **JQuery UI**, a widget library built on jQuery
 - A text field widget tied to a text field
 - Needs a data source containing the values to be displayed
 - Download Autocomplete from: <http://jqueryui.com/download/>
- Other jQuery UI widgets:

Datepicker



Accordion / Collapsible Content

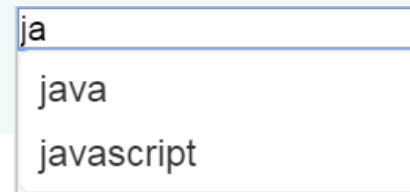


Data Source

- Source of data could be:
 - **Static list** on client side, like a hardcoded array (see below)
 - Dynamic list coming from server (discussed in future lecture)

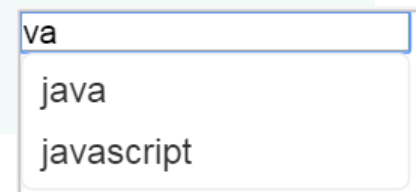
```
var languages = ['java', 'javascript', 'perl', 'python', 'php'];  
$( "#searchBox" ).autocomplete( {  
    minLength: 2, // min # of chars input before suggestions are triggered  
    delay: 200, // wait 0.2 sec before trigger  
    source: languages  
});
```

```
<input type="text" id="searchBox"  
    name="q" size="20" value="">
```



ja

- java
- javascript



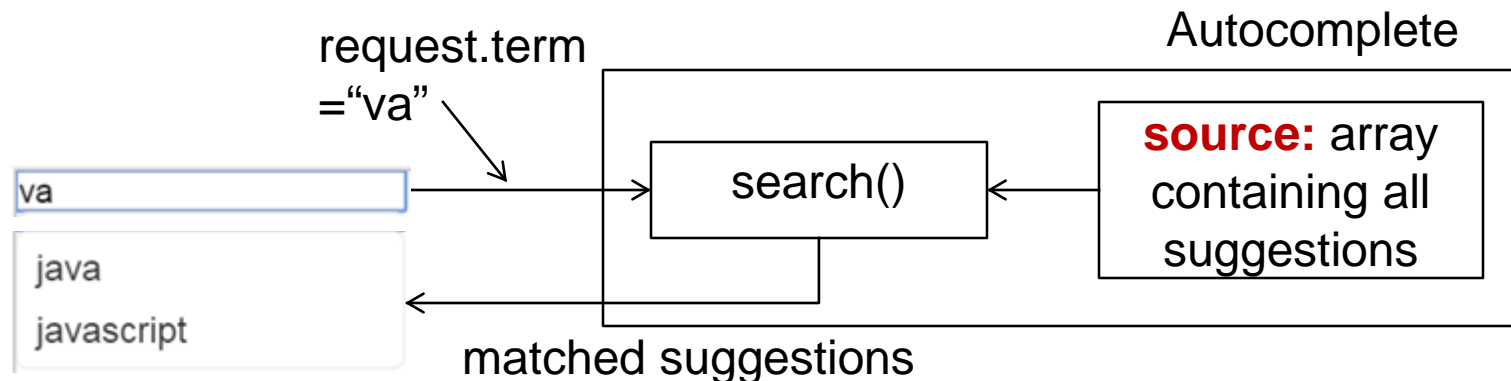
va

- java
- javascript

The candidate list of suggestions is **FIXED !!!**

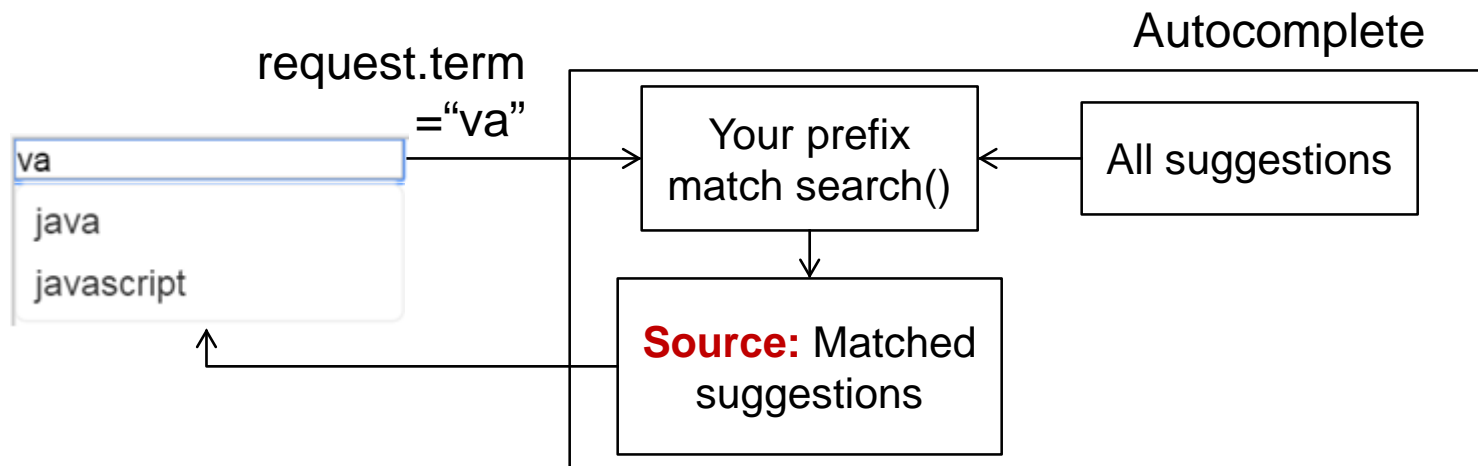
Using an Array as Data Source

- Autocomplete() will handle everything
- If you find autocomplete default behavior acceptable, this is the simplest way to use autocomplete()
 - Default display style of menu window
 - Matching request.term anywhere in suggestion



How to Customize Autocomplete?

- There are many ways to customize autocomplete
- If you want `request.term` to match the prefix of a suggestion
 - 1) Disable builtin `search()` and implement your own
 - 2) Use one array to contain all suggestions and then implement your own search and put matching suggestions into another array
 - 3) Use the suggestion array as source



Example: Using Function as Source

```
$(function() {  
  var languages = ["java", "javascript", "perl", "python", "php" ];  
  $( "#searchBox" ).autocomplete( {  
    source: function ( request, response ) {  
      var languages1 = [];  
      for (var i = 0; i < languages.length; i++) {  
        if (languages[i].startsWith(request.term)) {  
          languages1.push(languages[i]); } }  
      response(languages1); },  
  });  
});  
  
<div class="ui-widget">  
  <input type="text" id="searchBox" name="q" size="20" value="">  
</div>
```

Note: This code is NOT the best for implementing the desired behavior and not meant for your homework to follow

Example: Using label and value

```
$(function() {  
  $( "#searchBox" ).autocomplete( {  
    minLength: 2, // min # of chars input before suggestions are triggered  
    delay: 200, // wait 0.2 sec before trigger  
    source: [  
      { label: "java", value: "JAVA" },  
      { label: "javascript", value: "JAVASCRIPT" },  
      { label: "perl", value: "PERL" },  
      { label: "python", value: "Python" },  
      { label: "php", value: "PHP" } ] );  
});
```

- Display value when you click on label
- You do not need the language array

Other Customization

- How to bold the matched (or unmatched) substring in a suggestion?
- How to trigger an action when a suggestion is selected?
- How to display the selected suggestion in the text box?
- Other questions:
 - How to obtain suggestions from a server
 - How to change the style of the menu window?

Take Home Message

- JQuery is a popular JavaScript library because it makes JavaScript/DOM programming simpler
- Provide a CSS-like selectors to specific elements to which actions are applied (compared to navigating DOM using JavaScript only)
- jQuery provides convenient API for popular functions
- Still need many practices but better than pure JavaScript
- Autocomplete is very helpful for user interaction
- jQuery UI makes autocomplete manageable despite its complexity