

Chapter 4.

SECTION II: BUILDING AJAX-FRIENDLY APPLICATIONS

Text Suggest

Any programming technique requires something called the 'AhhHa' quotient to help get it universally adopted. The Text Suggest or Auto Suggest is one such Ajax application that has helped Ajax blend into the main stream of web based programming rapidly.

Text still remains the most powerful way for humans to communicate with computers. With the advent of Instant Messaging, Blogging, Email and so on a user is required to type in data faster and in greater quantity than ever before. A significant number of users are now quick on the keyboard. However, there are still many users whose workflow experience on the web is simply a Click → Execute type of experience.

Typing in data quickly is an issue for users with limited typing experience and also with users having certain physical disabilities. Even for a fast typist, typing speed remains an issue, as most people think faster than they can type. Additionally, people often make mistakes when they type.

The solution to this problem is to craft a mechanism that suggests words or phrases which are likely to complete what the user's typing. If appropriate, the user can select the suggestion, thus avoid typing it in.

A drop down, combo box, is a type of data field used in traditional GUI forms. It is a combination of a text input with a dropdown list. A user can type any text and the current selection in the list will track what's been typed so far. The user is also free to choose an element from the drop down list, which will then be posted back to the text field. In some cases, the elements in drop down list constrain data, while in other cases it's there to provide suggestions only to the user.

Text Suggest can be considered as sort of "advanced combo box" become popular in recent years that comprises of free text entry, with some suggestions for completion at any time. Text Suggest became popular with I.E. 5, which auto-completed fields based on user history

Text Suggest works as follows:

- ❑ A standard **input field** is used along with an initially invisible **DIV** element that is created to contain suggestions as they are retrieved from the Web server. The input field needs an event handler to monitor the text it contains. This ensures, the list always highlights whichever suggestion is matching
- ❑ Upon each key press within the input field, the Browser checks whether anything has changed since the last request. If so, the Web server is passed a partial query as a GET-based XMLHttpRequest call and the changed information in the input field is passed to it
- ❑ The Web server then produces an ordered list of suggestions
- ❑ At the Browser end, the callback function picks up the suggestions and displays them to the user, in a format that allows them to be selected. Each entry has an event handler if clicked, the input field will be altered

The basic idea is that as a character is typed, the application suggests terms that came up as search results at the Web server. The first suggestion is filled into the textbox as a character is typed while a list of several suggestions appears as a dropdown list beneath the textbox.

This concept has been used in desktop applications for some time. The technique has been mapped to the Web purely because of Ajax.

Implementing Text Suggest in GUI

In order to understand the functionality of Text Suggest the best way is to implement it in GUI. The following part of the chapter demonstrates the implementation of Text Suggest in BookMaster GUI.

The focus:

- ❑ To suggest the book names starting with the first letter entered in the text box
- ❑ Once the suggested book name is selected retrieve that book's details such as the Image of its cover page, publisher's name, cost of the book and a synopsis from the BookMaster table on demand

The names of the books will be suggested as soon as the first letter is known. This will be done asynchronously. The book details will be fetched and displayed asynchronously when the name of the book is selected from the suggestion made. This is where Ajax is used.

After the page is crafted it will appear as shown in diagram 4.1 and diagram 4.2.

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Type in the first few characters of a book name:


Book Details:

Diagram 4.1: The HTML page with a text box

If the letter keyed in the text box produces a single suggestion then that suggestion appears in the text box suggestion along with the details of that particular book under **Book Details:** as shown in diagram 4.2.

Type in the first few characters of a book name:

Book Details:

Publisher Name:	SPD	
Book Cost:	550	

Book Synopsis:
 The book has been written to provide genuine domain knowledge to programmers who wish to learn web based, application development, using PHP as a front-end programming tool, Apache as the web server and Oracle 10g as a DBMS of choice all run on Linux.

Learning web development is done through a set of examples and is finally strongly reinforced by the development of a Personnel Management System.

Diagram 4.2: Single Suggestion

If the letter keyed in the text box produces more than one suggestion then a list of suggestions is displayed below the text box as shown in diagram 4.3.1. The details of a book will be shown under **Book Details:** only if a particular book is selected using left mouse click as shown in diagram 4.3.2.

Type in the first few characters of a book name:

- PHP 5.1 For Beginners
- Professional Oracle Projects

Book Details:


Diagram 4.3.1: Multiple suggestions

Type in the first few characters of a book name:

- PHP 5.1 For Beginners Left click
- Professional Oracle Projects

Book Details:

Publisher Name:	SPD
Book Cost:	650



Book Synopsis:
The book has been written to provide genuine domain knowledge to programmers who wish to learn web based, application development, using object oriented PHP 5.1 as the programming environment. IIS and Apache as the web servers of choice. With a clutch of DBMS as the data store underlay for the applications developed. All run on M.S. Windows and Linux.

Diagram 4.3.2: Book Details shown on left click

The data required to populate the suggestion text box and display book details will be retrieved from the MySQL table BookMaster. The data population has to be done without refreshing the entire HTML page. The data retrieval from the Web server will be performed asynchronously using Ajax technology. This means any database operation initiated by the user via the GUI will be sent as a request to the Web server as the background process. This is done using JavaScript.

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