PROVIDING STATE TRACKING NAVIGATOR FOR AJAX APPLICATION IN MOZILLA FIREFOX

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ABSTRACT

Asynchronous JavaScript and XML (AJAX) application drastically reduce bandwidth usage and load time needed by means of requesting only the objects that need necessary changes, by this process it allows user to enjoy web application on a different degree since it does not force the entire page to reload. With this manner, web users have better interaction by means of having a faster web response.

On the other hand, by making the mother-browser a container for exchanging mini data, we are losing some of its important functionality such as the navigation toolbar. Since AJAX requires time to time update from the server and it is independent from its mother browser in terms of browsing history, this establishes a difficulty in accessing its history and capturing its states. Programmers who had already addressed these problems had resolutions only in the server scheme level and not in the client side.

Keywords:

AJAX, XUL, XPCOM, JavaScript, Caching

Chapter 1

INTRODUCTION

1.7 Background of the Study

AJAX is a technique used for asynchronous loading of context. It is not a programming language itself, but a process that describes the new approach in using existing technology such as HTML, XHTML, CSS, JavaScript, DOM, XML, XLST, and XMLHttpRequest Object. When this technology is combined in an AJAX model, web applications are enhanced, wherein it is capable of performing a quick incremental updates without reloading the entire browser itself. With this technique, web application became faster and more responsive to the user.

Instead of a browser making a normal HTTP POST or GET request, it would be made via submitting a form or clicking a link and letting the AJAX script makes a request to the server by using Javascript XMLHTTPRequest object. This might not be familiar to those who are not oriented to AJAX but it acts like a normal Javascript object. When using a javascript image object, we may dynamically change the URL of the image without refreshing the page. XMLHTTPRequest retrieves information from the server in a similar invisible manner.

In AJAX, most of its events happen on a single web page. When the page is loaded, a JavaScript trigger is activated and interprets that the application had just started. When you leave this page, like going to Yahoo! or Google for example, all of those JavaScript objects are completely cleared away; losing its state and its condition. Realizing what you've done makes you want to go back to its state by pressing its back button. Unfortunately, you will find that the page reloaded completely, loading all new objects and losing all that you have stored.

1.2 Statement of the Problem (CS)

The main problem this study aims to address is on how to provide a client-based state saving navigating functionality for AJAX applications implemented in Mozilla Firefox. The detailed problems are the following:

- How to create a plug-in (extension)?
- How to capture AJAX states?
- How to integrate state-saving mechanism to the plug-in?
- What AJAX application can it handle?

1.3 Objectives of the Study

This study aims to establish a concrete foundation in AJAX state saving method, widening its potential by stabilizing important browser options that are not normally functional to AJAX applications. The following are the detailed objectives:

- Create a Mozilla Firefox plug-in (extension).
- Create a state-saving mechanism for AJAX.
- Integrating the mechanism to the plug-in.
- Filter AJAX application that would benefit from the study

1.4 Significance of the Study

This study will deal on saving states of an AJAX application. Since AJAX is presented via browser which do have a traditional navigation option (such as forward and back button), it would be a great help not only to the web users but as well to the AJAX community to have a navigating option. By providing these essential functions which can manipulate data history, AJAX will be more convenient to the web users. This would elevate AJAX application to its next level and may open up new ideas in the fields of technology.

1.5 Scope and Limitations of the Study

Scope

- to save AJAX states efficiently.
- to stabilize important options such as navigation tool

Limitations

- AJAX with session recognition
- AJAX involves high security

1.6 Definition of Terms

Xul

XUL is an xml based user interface markup language developed by Mozilla. XUL provides a rich set of UI components.

JavaScript

Javascript is a scripting language used mostly for client side web development. It is the core scripting language in Mozilla.

XPCOM

XPCOM is a standard cross-platform object model provided by Mozilla that exposes a core set of components and interfaces for component management, file abstraction, object message passing and, memory management. My extension uses XPCOM extensively to caching of pages.

Caching

Caching is a temporary storage area where frequently accessed data can be stored for rapid access. Once the data is stored in the cache, it can be used in the future by accessing the cached copy rather than re-fetching or recomputing the original data.