AJAX
AN INTRODUCTION

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THE MAGIC SPELL BEHIND THIS IS

AJAX
(Asynchronous JavaScript and XML)

SO WHAT IS AJAX ???

- A programming language – no...
- A new technology – not exactly...
- So what else ?

It is a methodology on using several web technologies together, in an effort to close the gap between the usability and interactivity of a desktop application and the ever demanding web application

- Asynchronous Javascript and XML is a **client side** techniques that combines a set of known technologies in order to create faster and more user friendly web pages.

- AJAX provides an ability to communicate with the server asynchronously.

ASYNCHRONOUS???

We can send a request to server and continue user interaction with the user with out waiting for server response. Once the response arrives, a designated area in UI will update itself and reflect the response information. Whole page need not be reloaded

GOOGLE SUGGEST

Google Suggest is using AJAX to create a very dynamic web interface: When you start typing in Google's search box, a JavaScript sends the letters off to a server and the server returns a list of suggestions.

14 j	
14 juillet belgique	2,520,000 résultats
14 juillet wiki	275,000 résultats
14 juillet syrie	381,000 résultats
14 juillet aix les bains	463,000 résultats
14 june	159,000,000 résultats
14 juillet pétard	46,700 résultats
14 juillet à deauville	196,000 résultats
14 juillet a toulouse	1,400,000 résultats
14 juillet restaurant	800,000 résultats
14 juillet wikipédia	311,000 résultats

Recherche avancée
Préférences
Outils linguistiques

Recherche ... France

Programmes de ... e.com in English

fermer

SİMPLE PROCESSING

- AJAX is based on Javascript, and the main functionality is to <u>access the web server inside the Javascript code</u>.

We access to the server using special objects; we send data and retrieve data.

When user initiates an event, a javascript function is called which accesses server using the objects.

The received information is shown to the user by means of the Javascript's functions.

COMPONENTS OF AJAX

- Ajax incorporates several technologies, each flourishing in its own right, coming together in powerful new ways.

    - standards-based presentation using *XHTML, CSS*
    - dynamic display and interaction using *DOM*
    - data interchange and manipulation using *XML*
    - asynchronous data retrieval using *XMLHttpRequest*
    - and *JavaScript* binding everything together.

THE PROCESS CYCLE

Using JavaScript, an instance of the xmlHttpRequest object is created. The HttpRequest is then sent.

Internet

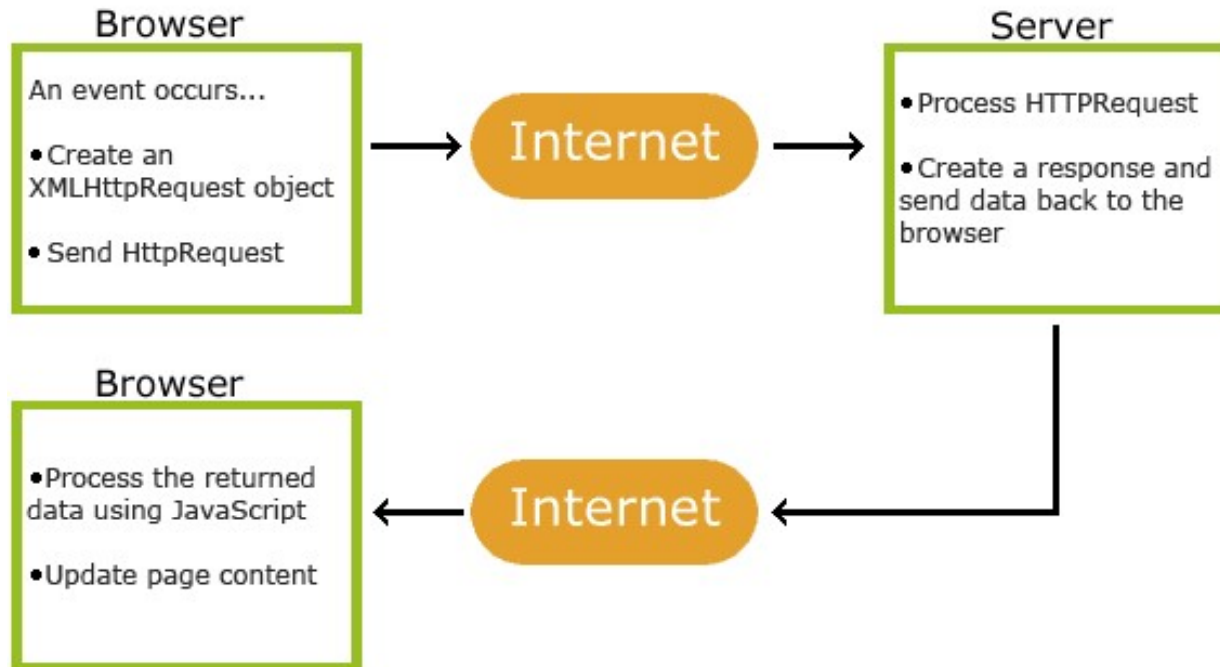The client processes the returned XML document using JavaScript and updates the page content.

The HttpRequest is processed by the server. A response is created and returned as XML data to the client.

How AJAX Works

1. An event occurs in a web page (the page is loaded, a button is clicked)
2. An XMLHttpRequest object is created by JavaScript
3. The XMLHttpRequest object sends a request to a web server
4. The server processes the request
5. The server sends a response back to the web page
6. The response is read by JavaScript
7. Proper action (like page update) is performed by JavaScript
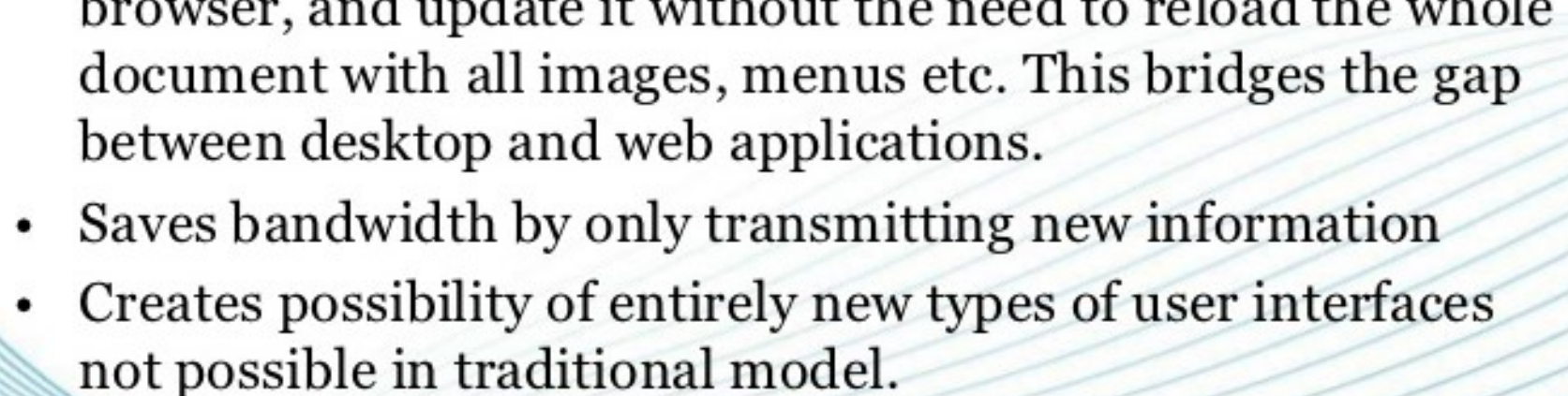
XMLHttpRequest

- The kernel of Ajax   ⟶   **XmlHttp Request Object**

- The XMLHttpRequest object allows client-side *JavaScript* to make HTTP requests (both GET and POST) to the server without reloading pages in the browser.

- This JavaScript object was originally introduced in Internet Explorer 5 by Microsoft and it is the enabling technology that allows asynchronous requests

XMLHttpRequest

- By performing screen updates on the client, you have a great amount of flexibility when it comes to creating your Web site :

  - *Eliminate page refreshes every time there is user input*
  - *Edit data directly in place, without requiring the user to navigate to a new page to edit the data*
  - *Increase site performance by reducing the amount of data downloaded from the server*

- The possibilities are endless!

BENEFITS OF USING AJAX

- Helps to build fast, dynamic websites.
- Ajax allows to perform processing on client computer (in JavaScript) with data taken from the server thereby reducing server load by moving a part of server functionality to client side.
- Ajax can selectively modify a part of a page displayed by the browser, and update it without the need to reload the whole document with all images, menus etc. This bridges the gap between desktop and web applications.
- Saves bandwidth by only transmitting new information
- Creates possibility of entirely new types of user interfaces not possible in traditional model.

AJAX DISADVANTAGES

- Poor compatibility with very old or obscure browsers, and many mobile devices.

- Limited Capabilities like multimedia, interaction with web-cams and printers, local data storage and real time graphics.

- Not everyone have JavaScript enabled. If JavaScript is not activated, Ajax can't works. The user must be asked to set JavaScript from within options of the browser, with the "noscript" tag.

- Too much code makes the browser slow.