Web Engineering - assignment 2
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Exercise 1: HTTP

a. Is a HTTP-based communication between a client and a server synchronous or asynchronous? Explain.

HTTP-based communication between a client and a server is **synchronous.** This kind of communications works like this: client request something from the server and then it waits for response from the server (or the timeout). The waiting part is what makes this communication synchronous and the reason why it is implemented that way is that we have to be sure that one task (request) was finished before proceeding to the next one.

b. Is the HypertextTransferProtocol stateless or stateful? Please explain.

HTTP is <u>stateless</u>. All the requests are independent. Server does not "care" about when does each request arrive. Every request contains enough information within itself to be fulfilled without being associated with other request.

Exercise 2: JavaScript

a. How can external JavaScript files be included into HTML?

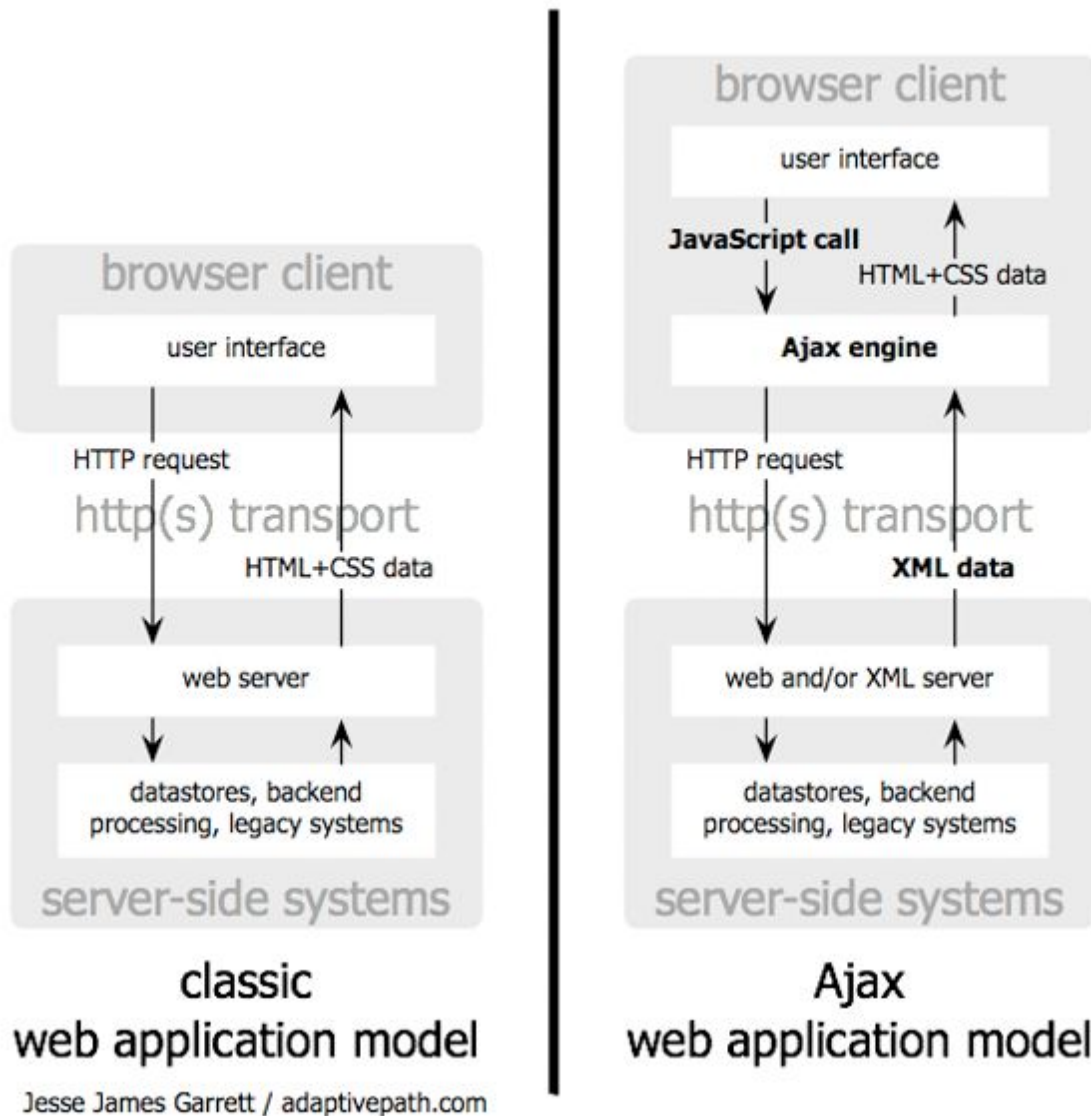They can be imported by using a correct syntax, that is using: scr="url_of_script":
<script type = "text/javascript" src = "url_of_script> … </script>

b. Where in a HTML page can JavaScript code be embedded?

In a HTML page JavaScript code can be embedded either in <body> or <head> part of a document. When we want to create a JavaScript function, a good practice is to define it in a <head> part of a HTML document and call it in a <body> part of the document.

Exercise 3: Ajax

The following figure presents the classic web application model and the Ajax application model.

classic
web application model

Ajax
web application model

Jesse James Garrett / adaptivepath.com

1. Considering this figure, please explain how Ajax differentiates from classic web application models from:

a. The technical point of view.

The main difference is that AJAX is asynchronous, this means that it can send/receive data to/from the server without the need to refresh the page and it also does not affect the display or behaviour of the page.

In the figure we can see that contrary of a classical website (without AJAX) the request to the server goes through the AJAX engine making the asynchronization possible.

b. The user point of view.

For the user it translate to faster user experience, because he doesn't have to wait for the entire website to refresh to see new information, it gets it in real time, without any (or little) action from the user.

2. Please provide an example of a web application that uses Ajax.

Facebook, Twitter and Gmail are examples of a web application that uses AJAX. Because let's say you get a new message (notification, tweet or email respectively). You don't need to refresh your browser for getting it, an automatic(AJAX) notification appears somewhere in the screen letting you know about the new message without having to manually request it.

Exercise 4: Introduction to modelling

ORDER
Invoice

0...1
1

USER 1 * **SHOPPING CART** * * **CATALOG**

payment()
address()

1
*

ADMINISTRATOR

add_publication()
modify_publicat()

CUSTOMER

search()
select()
add_to_cart()

PUBLICATION

REGISTERED
Default_address
Default_payment

NON-REGISTERED

get_registered()

DISSERATION

TECHNICAL REPORT

LECTURE MATERIAL