Web Engineering
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Assignment 2_solution

Exercise 1: HTTP

a) HTTP is synchronous because it starts when a client sends a request to the server, then the client has to wait, meaning that all downloading and initiation of javascript code can't be done for example, till the server replies. The leads the socket to be occupied and not open for utilization.

b) HTTP is stateless by nature, meaning that the server will have no idea of the state of its client even if the same client requested it multiple times. But it can be turned into stateful by different means, one of them is cookies that make the server remember a user logging in.

Exercise 2: Javascript

a) For using external scripts, we just need to save our script in a .js file and use src attribute in our <script> tag in order to connect our HTML to our script. (older versions of HTML required a type attribute for example <script type="text/javascript"> but now it is not required as the default scripting language in HTML is javascript)

```
<script src="/scripts/victor.js"></script>
<script src="http://webiaturist.com/victor.js"></script>
```

b) It does not really matter where to put the code in HTML file, we can put the code (surrounded by a `<script></script>`) in <body> or <head> but it is better in general to put the code at the end of codes (before <body>) , this will improve page load cause script compilation may slow down the page load.

Exercise 3: Ajax

1. (a+b):

Classic web application simply does a HTTP request every time it loads the page. For example : when a user enter into a web page or reload a web page, it creates a HTTP request to the server and gets the data from the server. Therefore, every time in order to gets update data, a user needs to interact.

But in contrast, Ajax paradigm helps to do this interaction mechanism by itself. Considering the given figure, first browser client has javascript function which generates a XMLHttprequest in a certain time to the server without client signature then the server response accordingly.

For instance : Google Suggest functionality, when users start typing new york, the part "new y" is enough for Google to autocomplete the possible search terms New York City or New York Times. All the loading is done in the background, without the page's reload.

2. Twitter newsfeed and notifications.

Exercise 4:

Customer

+ SelectPub (Publication)
+ Search (Keyword)
+ AddPubToCart ()

Unregistered Customer

+ getRegistered ()

Registered Customer

- address :str [1..*]
- BankAccData
- CreditCardData
+ PaymentMethod : str [1]

+ SelectPayment-Method ()

Shopping Cart

+ Added Publications [0..*]

+ SelectPayment ()

Order

+ InvoiceNumber :int

+ deleteCartItems () ()

Catalog

Publication *

Administrator

+ addNewPub (Publication)
+ modifyPub ()

Lecture material

Dissertation

Technical Report