Web Architecture Overview

The Basics

We can generally divide website 'stuff' into two parts. The *client* and the *server*. In a slightly simplified world the client is your browser and the server is some computer off in the far far away that has data that your client wants. It is more complex than that because there can be clients that request stuff from web servers that are not browsers and sometimes servers can request stuff from other servers. Sort of turning a server into a client temporarily. But the major concept in the same, one computer is asking for stuff and the other computer is serving that stuff.

The Client-Server Relationship

The Client

For the purposes of this class we can think of the client as the web browser. When we say that things happen *client side* we are referring to things that happen within the browser without the need to contact a server. So we can have pages that are interactive and we can have that all be done client side. An example of a client side interaction can be seen with the jQuery UI Accordion (http://jqueryui.com/accordion/). When you click on a tab it will expand that tab and contract the rest. All of that logic and interaction is happening on the client with no need to communicate to the server. So we say it is a client side interaction or that it is happening client side.

The Server

The server is a bit harder to pin down. To excessively simplify the server is the thing the client is requesting data from. In general this is probably going to be some computer elsewhere like when you are accessing `http://news.google.com`. But it can also be a server application you are accessing locally. In that case the address would look more like `http://localhost:3000`. `localhost` refers to accessing a resource on the same computer. Finally you can use your own computers file system as a server. It can't do anything special like change content on a page, it can only serve static files without changing them. It would look like `file:///D:/Documents/hello-world.html`. This is just directly accessing a file on your computer. The important thing to know is that other people (like the instructor and graders) can only access your page if your address looks like the first address. If it is being accessed as `localhost` or with `file://` then only you can access it.

When stuff is *server side* then it has access to all the data on the server. So a weather site might have the most recent weather data on the server or a shopping website might have the most up to date inventory. When a page is generated on the server it can use this to generate the page that will be sent back to the client. But once it gets sent to the client there is nothing more the server can do to change the page unless the client makes another request.

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Activity

We are not getting into the technical material yet. To check you understanding here browse some of your favorite websites. Try to identify three things you are confident are client side interactions and try to identify three things that you think are server side. Also inspect the request and response headers and bodies.

Review

The main thing to take away here is that there is a separation between the client and the server. At some points in a web pages life-cycle the client has control over what happens and at other points the server has control. Keeping this in mind as we move forward and start making web pages will be critical. You need to know what must be done on the client, what must be done on the server and what could reasonably be done either place.