Introduction to ITWS

Quiz 1: September 30, 2013

1. Network protocols: (10 points, 10 minutes)  
     
   In Lab 3, we set up a website to display our projects. In order to display the webpage we created, we typed in the URL for our personal RCS website.
   1. Upon hitting the enter key, how did my computer know where to “go”? (5 points).

The computer went out to check for the first DNS server, which in that case was located on campus (here or Hartford) and looked through essentially a table to find the IP address that matched the URL provided, and then linked to the server hosting the files at the IP provided and connected to that server from the browser.

* 1. If I am on the RPI network when I type in the address of my page, do I need to use the three-way handshake? Why or Why not? (5 points)

Yes, any and all connections over TCP/IP use the three-way handshake to verify that the connection can send the correct information to the correct location that asked for that content. So it creates a trust essentially between the consumer of the content and the server of the content.

1. In our lectures and labs, we have talked about HTML and CSS. What is the difference between HTML 4, XHTML and HTML 5? What is the fundamental advantage of HTML 5 and what challenges does it pose for development? (20 points, 10 minutes)

The central difference between xhtml and html4 is that xhtml follows a far stricter format of the content stored within an xhtml document. This strict-defined markup is mainly focused on the fact that any tag that is present must have an end tag. So if you create a <p> tag in xhtml the content in the tag has to end with an </p> tag. Html4 is not as strictly defined, and can have a looser setup to the code style. HTML5 takes the strict definition of xhtml and integrates it closer to the html markup styles and also provides some advancements in what kinds of content are being displayed in the browser.

1. Given the following HTML and CSS

<div id=”mainBlock” class=”header blockTitle”>

<p>Main Title</p>

</div>

p {

text-color:red;

}

#blockTitle {

text-color:blue;

}

p#mainBlock#header.blockTitle {

text-color:green;

}

What color will the text, “Main Title” be? Why? (10min, 10 points)

The text will be black since the attribute text-color in the css is not defined at all, the only attribute that should be used to change the font color would be the color: attribute. So the font remains black. Also there are a few typos in the code because # correlates to id so the second segment of css is incorrectly stated it would have to be .blockTitle, same with header in the third css segment.

1. In Lab 3 we programmed and deployed a website. (20 points, 10 Minutes)
   1. As an addition to that exercise, please describe the steps necessary to modify plotkr2 to have administration access to the site, and remove hugheg from having access to the site entirely – DO NOT execute these commands, enter them below, and describe what each part of your command is doing. (10 points)

Note: any line with two ‘/’s (i.e. //here is a comment) is a comment just to describe the process. I just followed basic javascript comment style, first one that came to my head.

//Cd to the right directory

Cd iit

//First making plotkr2 as the administrator:

Fs setacl iit plotkr2 all

//then remove hugheg

Fs sa iit hugheg none

//both all and none are shortcuts allowed to allow or remove all access to the files hosted on the server

//sa is equivalent to setacl

* 1. Describe, in detail the structure you chose for the website and why. Is it a good structure? Knowing that you will be posting all of your assignments to this site, do you anticipate changing the structure in any way? If so, what changes do you anticipate making? Why? (10 points)

I think my current structure is a fairly easy to follow, I present the information required on all the pages, and I keep the resources away from the content so that if another person were to take over the control of the files hosted on the server the setup will be as convenient to use as if they set up the file system. I can’t foresee any changes to the structure as a whole to the site, the only changes I might make will be purely style based, for example applying interesting transitions using css3.

1. Communications and Networks. (15 points, 10 minutes)
   1. What is Metcalfe’s Law and how does it explain the dominance of Facebook over MySpace? (Answer in complete sentences)

Metcalfe’s Law is a simple statement that states the value of a network is equivalent to the square of the nodes. When looking at the dominance of Facebook over MySpace, several things caused the value of Facebook to radically out-grow MySpace. These factors include some social concepts such as the idea that new is more interesting to follow than old, but in the end (or at least currently) Facebook provides a much larger network and therefore a much larger value to its users and other people and companies. So the fact that Facebook now has 1.2 billion users its value is large, compared to MySpace’s smaller number of users in the hundreds of thousands mark I believe.

* 1. Discuss two concepts you learned from the “Global Wide Area Network In-Class Exercise” (where you planned, acquired and built communication cable networks between 12 world cities). (Answer in complete sentences)

Two concepts that I learned from the global wide area network exercise include the fact that if a country has enough money, as we did in San Francisco, they could connect directly to almost all other cities in the exercise. This goes to show how even if cities and countries do not have large amounts of money, they can still connect with larger hubs who can afford to connect to other larger hubs and back down to the smaller hubs by reaching out to them. The second concept that I learned from the exercise was that the connections formed between countries are large connections and by that I mean that a connection to London from New York is one that requires a huge amount of fibre optic cables to provide the necessary amount of bandwidth required by the two countries, and that also it is important to almost always direct connect to other cities to provide loops within the network so that if one section of cable is out, the other end of the loop still provides access to the cities that would have been without access.

* 1. According to the Economist Sept 4, 2010 “Future of the Internet” article (Intro to ITWS lecture on Sept 9, 2013, slide 31 posted on LMS) what is the “Application” that is the largest and fastest growing consumer of Internet bandwidth? Why? (Answer in complete sentences)

The “application” that is growing the largest by the numbers provided in 2010 is the internet video use on the internet. This is the largest consumer of bandwidth of the internet for two important reasons that scale upon each other, the first of which is the file sizes of the media being presented, compares to audio media like songs, and then graphics like images, video combines both and requires more storage use, more bytes to transfer over the network for a video than a song. The second reason why the bandwidth is so large is because of the rapid growth of the users of these content providers, more and more people sign up for services like Netflix, Hulu, and YouTube every day and as each of these users desire to watch content the network must deliver these larger files to these more customers so the internet video application on the web becomes the largest consumer of the internet bandwidth.

1. Web Science (10 points, 10 minutes)
   1. What is “Web Science” and why does it matter? (Answer in complete sentences)

Web science is the application of several default metrics used to analyze the connection of many nodes over networks. The reason that web science matters is because without these metrics to provide data about the growth of networks many services that provide connections between consumers on the network and the servers of the content would not be able to predict the growth of these networks and they would become too slow to grow the network at the rate that the consumers want the network to grow at.

* 1. What is the “Web Science Method”? How would you use the “Web Science Method” to address a “Social Problem”?

The web science method is the process of defining things in a very large space, or simply analyzing the results of events in very large spaces on networks and the internet as an example. A great use of the web science method to solve a social problem would be analyzing how viruses on a network travel from node to node to find better ways of preventing viruses from going from one computer to another, or even extrapolating that analogy to relationships between humans to follow how viral pathogens infect people.

1. Enterprise Apps and the “SAP and Cloud Computing” Case. (15 points, 10 minutes)
   1. What are “Enterprise Applications” and how are they different from “Consumer Applications”? (Answer in complete sentences)

Enterprise applications are specifically designed to provide businesses and large collective groups of people and services to better operate within the enterprise. A great example of an application developed for enterprise level use would be one that tracks the location fo delivery trucks for a company that ships items to its customers. This application may never be actually used by a person within the company but will provide data to other applications that request it. A great example of consumer applications is Microsoft Office. These applications are for simple use as word processors table setup and presentations, they do not inherently transmit data from one source to another application for more use.

* 1. What are two “advantages” and two “disadvantages” of cloud computing vs. purchased software? (Answer in complete sentences)

Two advantages of cloud computing are:

1. The applications are hosted elsewhere so that with whatever device a user wants to use they can access the same applications as they would with a computer on a company network.
2. If properly implemented there is little risk to lack of access to these applications, one could be using mobile data to access these while in flight for example whereas with purchased software one needs to directly connect to the company’s mainframe.

Two disadvantages of cloud computing are:

1. It is usually a service that is paid in installments as you use the applications, so it could be a reoccurring fee every month or year whereas purchased applications are exactly that, they are a onetime cost to the company.
2. If the cloud computing is not properly implemented then if the provider of the cloud computing application service (saas company) goes ‘down’ as in offline then access to the applications will be restricted.
   1. What are two important concepts that you learned from the “SAP and Cloud Computing” Case? (Answer in complete sentences)

Two important concepts it took away from the SAP case are first that the market is fairly unstable for new startups that offer a service that prior to their existence had never been used before, this can be seen when analyzing Salesforce’s market and realizing that they have yet to make an actual profit from providing Software-as-a-Service. The fact is that when one makes a market that has yet to be developed in or used then the numbers are not going to look too good for the company. The second concept that I took away from the case is that a majority of the time when a company attempts to follow an idea that is outside of the market that the company was founded for or focused on, it usually can’t compete with other companies that only focus on that market, this is easily seen when SAP attempted to start a SaaS branch offering their software on the cloud computing platform in 2008. This service was finally dismantled in 2010 when the amount of companies using this service dramatically decreased from 2008.