

Free critical thinking on technology reflection

[Business](#), [Management](#)



In the first week we learnt about HTTP refers to Hyper Text Transfer Protocol, a term that I had heard about many instances before the first lecture. It is used in telecommunications and networks, and it made me interested in the topic since it was applicable to the internet and websites, and I had used it when browsing the internet although I did not understand its applications fully. It was exciting to learn about the previous version of HTTP (version 1.0) and the newer version that is currently in use, HTTP 1.1. The current version of HTTP is a faster upgrade from the previous version, and it allows several requests to be sent simultaneously in a process known as request pipelining. Some of the areas of confusion that I encountered were the issues of HTTP request methods. There are eight methods that can be used to communicate between a client and a server, for example, the idempotent methods. Cookies were interesting to learn and there was a lot of relevance in the topic for internet users.

In week 2, I learnt about how the web works in the physical layer (routers, switches, cables) and how protocols are used to communicate between devices in a network. I had participated in the setting up of various networks at home and in the office, and this topic was very relevant to me as an IT person. Even after participating in these types of networking, I had not learnt about certain important aspects of networking such as the difference between routers, switches and hubs. A hub connects multiple devices through a port, and neither does it listen to traffic or manage bandwidth. The data comes in and is broadcast to the other ports, leading to huge traffic and package collisions in the network segment. A switch has a collision detector and it can listen to traffic, while a router has a built-in routing table for

joining several LANS together. The area of confusion was the TCP/IP and DNS aspects, but I later understood that DNS servers are formed as vertical hierarchy.

During the week 3 classes, we learnt about TCP and the sliding window technique. The lecturer explained the process of sending TCP/IP packets through the internet, The acknowledgment system, checksum, error detection, sliding window, and round trip time, these are all new things that I never thought of and today's lecture was really useful to understand things in much more depth. I had conflicts when it came to round trip time set and how to determine the window size, but after researching about it, I managed I managed to understand these issues. Round trip time (RTT) is also called round-trip delay time (RTD), meaning the length of time taken for the packets to be sent to the receiver plus the time it takes to acknowledge of that packets' reception. Pinging can easily establish the RTT for the packets sent. I also realized more about Receiver Advertised Window and the Congestion Window, and the factors that affect these parameters such as transmission media, number of nodes, traffic on the LAN, and the physical distance between the sender and receiver.

In the fourth week, there was a lot about summarizing what had been learnt before in the previous weeks. It was mostly about recapping and understanding how the OSI (Open System Interconnection) Model works between all the layers, and the 5 layers OSI Model. The relevance of this week's work was great since I managed to revise all the work that I had done in the other classes. I managed to understand more about TCP/IP protocol

and User Datagram Protocol that are part of the networking protocol stack/suite. UDP is faster in transferring data because it doesn't do error checking and correction. Another protocol I found interesting is Stream Control Transmission Protocol (SCTP).

In the 5th week, I learnt about managing a web server. It was more complicated than other previous lessons but I managed to understand and enjoy the lesson when we installed a web server in our PC. The web-server is responsible to serve the request sent from the users from their browsers and delivers the response by web pages or we can say HTML files and any additional contents that come with it like images. Apache server is the main web server since it is free and an open source and it is very easy to install. The only part I found complicated was the configuration of the files in Apache server. We had a chance to change the `httpd.conf` and `htaccess` file in the tutorial which helped in understanding how to change some configurations of the Apache server. One should avoid using the `.htaccess` file because it will affect the performance of the Apache server and it is a security issue by allowing users to change server configuration that administrator has no control of.

In the 6th week, we learnt about XML, XHTML and XSL. I did not have an idea what they were but later on I realized that XML stands for Extensible Markup Language. I understood that XML is different than HTML and it is used to describe and carry the data. In other word XML provides the designer a way to separate data from the format. I know that HTML stands for Hyper Text Markup language. So for better understanding I read more about XSL and I

found out that it contains three parts. XSLT language allows an XML designer to write content only once and put it in many different formats. XPath language allows XML designer to link to very specific locations within an XML document. XSL-FO is a language used to define the formatting for various objects or portions of the XML document.

In week 7, we were introduced to AJAX (Asynchronous JavaScript and XML), used to send and receive data between the browser and the web server asynchronously in the background without reloading the whole page. This technique is achieved by allowing the JavaScript to communicate directly with the server by using the XMLHttpRequest object. AJAX is usually used to make web applications user friendly and quite interactive. There are three properties for the XMLHttpRequest object; onreadystatechange, readyState, and status. I found it hard to understand when to use the onreadystatechange or what it does. But after going thru the w3schools site, I think I got the idea. The onreadystatechange is used to define your next action after receiving the server response which can be triggered by the readyState property.

In the 8th week, we learnt about web services such as SOAP (Simple Object Access Protocol, UDDI (Universal Description, Discovery and Integration) and WSDL (Web Services Description Language). Most of the big companies that offer services online are now enabling this feature for other companies or sites to use their services to expand their work and services to more users. As a matter of fact it is making the life of the customer easier and simpler by being at the same site. For example when buying a product online

and you want to choose the delivery option, you can see all delivery carriers services integrated in this site and you can chose the one reliable to you. I found out there is something called REST (Representational State Transfer). It is Lightweight - not a lot of extra xml markup, Human Readable Result, and Easy to build - no toolkits required. REST can be used in Twitter, and Yahoo's web services use REST.

In week 9, we learnt a lot about content management systems, a web application that is used to manage the content of the web site. CMS consists of two elements: the content management application (CMA) and the content delivery application (CDA). The CMA element allows the content manager or author to manage the creation, modification, and removal of content from a Web site without needing the expertise of a Webmaster. The CDA element uses and compiles that information to update the Web site. With CMS, one does not need HTML and also it has many features such as Web-based publishing, format management, revision control, and indexing, search, and retrieval.

In week 10, we learnt about a new concept called Network management- FCAPS. FCAPS stands for Fault Management, Configuration Management, Accounting Management, Performance Management, and security Management. I tried on searching for the FCAPS implementation on the web and unfortunately there were little information about it and most of the sites just repeated the same definitions for FCAPS. I found a comprehensive document in explaining FCAPS in depth and explaining what to do at each level. At the end I understood the purpose of following FCAPS standards as

businesses and service providers cannot bear the downtimes for the network and in the meantime they want to be in control and able to manage their network. Apart from FCAPS, there is also ITIL (Information Technology Infrastructure Library) that to me was familiar and quite popular. Now there is ITIL (V. 3) and it has five cores; Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement. ITIL can be used to improve resource utilization, remove redundant work, and combine central processes.

In week 11, the topic for the week was a self-study topic since there was no lecture, and I must admit that it was the hardest topic I read. I wanted to learn much about SNMP (Simple Network Management Protocol). Reading this topic on my own made me to realize that lectures are so important especially when the topic is new. I tried to go through the slides and tutorials provided on student central, but I really faced hard time to understand how SNMP works. That's why my reflection is poor and there are no many things to reflect on. Network Management is all about keeping the network up and running, monitoring, and controlling network devices using conventional network technology. When the network devices are more and the network is widespread, management becomes tedious and impossible. Therefore, there arises the need to manage the network remotely. This is enhanced by SNMP. Simple Network Management Protocol is an application-layer protocol that facilitates the exchange of management information between network devices. It is part of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network

growth on an Internet Protocol (IP) network. Some of the things I studied on my own are:

1. SNMP went through number of versions to enhance the capabilities and advantages, and now we are using SNMPv3.
2. SNMPv1 was the first version of SNMP. Although it accomplished its goal of being an open, standard protocol, it was found to be lacking in key areas for certain applications.
3. SNMPv2 key advantages over previous versions are the Inform command. Unlike Traps, which are simply received by a manager, Informs are positively acknowledged with a response message. If a manager does not reply to an Inform, the SNMP agent will resend the Inform. Other advantages are; improved error handling, improved SET commands.
4. I also learned about the main advantages of SNMP such as it is a standardized protocol, it is universally accepted, it has portability and extendibility, and it is widely available.

In the 12th week, the focus was on manipulating the CSS file (for Cascading Style sheet), and to see the effect on the HTML page. The style defines how to display HTML elements such as layout colors, fonts, and font size. This option was added to HTML 4. 0. The purposes of the CSS are to solve problems and save time. The style defines how to display HTML elements such as layout colors, fonts, and font size. This option was added to HTML 4. 0. The purposes of the CSS are to solve problems and save time.

I have learnt about W3C Validator, a free service by W3C that checks the validity of Web document. This validator can process documents written in

languages such as HTML, XHTML, and XML. I found out this service really can save me a lot of time by validating my code. It eases the work of identifying the problems and gives me directions on how to solve it.

Upon completing the tutorial, I learned that the style sheet can be specified inside the HTML element of an HTML page. But the other professional way is to have the CSS as an external file, and then reference it inside the HTML document. Moreover I learned that I can have multiple style sheets for one web page. Another useful technique is to apply multiple CSS classes to single element.

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