**Unit 28**

The web architecture

Internet Service Providers (ISP’s) are crucial to the user’s ability to access the web. They are companies that provide web service to many people for often what is a monthly or annual fee. Depending on where you live, certain Internet Service Providers will be better for you.

Furthermore, domain name registrars are very important for the websites we visit. Every web page requires a domain name and it is the registrar which is responsible for distributing domains. It is important the website has the right domain because it would be misleading if a University website had a .co.uk domain rather than a .un. It is in this way the domain structure is established and built. If there was no registrar the domain structure wouldn’t be strong.

What about Web Hosting? Web hosting is quite possibly the most important piece in the jigsaw. It is these hosting companies which are responsible for providing the platform to host a client’s website. They often have lots of expensive and large equipment to handle a lot of clients and charge monthly based on data used. In addition, the web hosting company saves lots of people money because if businesses had to pay for expensive architecture to host their e-commerce websites they would not be financially better off than just having a WHC do the whole effort for them. Also this method means businesses do not have to spend time and money on people who are trained to run their website; another huge bonus.

Without all of the above web architecture, the World Wide Web (collection of web pages) would not be accessible or as influential on the world today as it is.

User side and Server side factors in performance

There are a number of contributors to stopping a web page perform and load to its optimum, here are some of the user side reasons for some performance failures;

Firstly, the download speed might be way to long and this could be down to the ISP you are with, when there is bad download speed the user will struggle to load elements on the web page.

Secondly, the quality of machine the user is using could have an effect here. If the processor speed or cache memory isn’t up to an acceptable standard the webpage will struggle to load. These PC performance factors could have a strong effect on the web page performance.

As for server side, the available bandwidth could be a direct influence as well as the file type. If there is a .gif rather than a .jpg, it will take a longer amount of time because there is more to load. If a website has lots of large elements involved, it will take longer to load and this is a weakness on the server side.

Security risks and protection mechanisms

There is always the threat of hacking, viruses and identity theft when trying to protect the website from harm. In most scenarios the attacks can be deflected and prevented by using protection software and a full-proof network. The firewall is the first port of call and should deflect the weak attacks and most harmful of outside influences. However, by having password locked networks with strong passwords, you can protect your site well. Use both upper and lower case letters as well as numbers. SSL is a more advances method of protecting your website, it stands for Secure Socket Layers.

I have created an interactive website which is tailor made for my client: ‘Gem’, a band. The website uses HTML and JavaScript and is attached with the assignment. I drew a plan in the form of a story board in order to create a more interactive and successful site. (P4 & P5)

The role of web architecture in website communications

The website fits into Web 2.0, which allows for a new level of interactivity. There are various methods of information sharing, including social media outlets. I have used social media outlets such as Facebook, Twitter, Tumblr, Instagram and more. I have created links to the websites and they are clearly displayed on the main web page.

Tools and Techniques used to create the interactive website

CSS has been used to create the visuals of the website and there are a number of different types of CSS commands used that have influenced the visuals of the website. I have used Brackets software to build the website and have used linear tools to make the image elements. In addition, I have imported two instances of video and sound cloud references. These are significant in terms of interactivity and by using tables in HTML I was able to position these videos. Also, I ensured the whole website and its build was compliant with W3C.

Improving effectiveness based on client review

After completing the initial website I had a meeting with my client in which we discussed the possibility of a few changes based on their preference. They asked for more main pages so 4 main pages became 5. Also, they asked me to swap on picture on the About page for another. These were easy changes. It appeared the clients fundamental needs for the website had changes so therefore I had a number of positive changes to make. These went smoothly and I completed the website they were happy with.

The role of TCP/IP protocols, link to application later protocols

The TCP/IP protocol is considered one of the most important protocols. It means ‘Transmission Control Protocol (TCP) and ofcource the Internet Protocol (IP). This TCP/IP defines how the devices we add to our computer are interpreted by the system and should be connected via the web. Many application layer protocols are link to the TCP/IP. With the application layer at the very top of the model (OSI), protocol dominates many of the sub protocols we use today, e.g. HTTP.

Techniques used on web pages to aid user access (accessibility)

It is massively important that all users can access the information on the website regardless of any infringement on eye sight, hearing etc. There could be an accessibility slider which can be dragged up or down in order to increase the size of text. No colour coding so if a user is colour blind they are not restricted in any way. In addition, there could be special settings for videos on the site such as captions for people with hearing impediments and there could similarly be automated voices available for written text on the webpages. There could be a password required if you want to access the website, this way only specific users could have access to information on a website. The font used for body text is very important as well, it needs to be easily interpretable and clear for all users so that everyone can read it, a simple font such as Calibri or Ariel would be good here.