

FACTFILE: GCE DIGITAL TECHNOLOGY

AS2: FUNDAMENTALS OF DIGITAL TECHNOLOGY



WEB TECHNOLOGY AND MULTIMEDIA : KEY TERMS

Web Applications 1

Learning Outcomes

Students should be able explain the terms:

- WWW
- The Internet
- URL
- HTTP
- IP address
- Web browser
- Web server
- Web hosting
- FTP

- ISP
- Search engine
- Cache
- Cookies
- Portal
- Website
- Web page

Content in Web Applications 1

- ✓ Table containing an explanation of the terms above

Key Term	Explanation
WWW	<p>World Wide Web</p> <p>Is the name given to the collection of information that has grown up on computers connected to the Internet and which is made available for anyone to access. The information is made up of webpages.</p> <p>Features of Pages on the World Wide Web</p> <ul style="list-style-type: none"> • written using the programming language HTML • viewed using a web browser • contain HYPERTEXT which provides the user with clickable links to other pages on the web. • can contain sound, video, animation, graphics and hypertext as well as simple text • Use Hyper Text Transfer Protocol to send pages across the internet. <p>The WWW could be described as a multimedia service on the internet. The URL of pages on the WWW usually begins with <code>http://</code>, indicating that the page uses the Hypertext Transfer Protocol.</p>
The Internet	Also known as 'the net'. It is a network of computers, each communicating with several other computers in the network, but not with all of them. It is a world-wide communication system linking computers in geographically separate locations through the use of a variety of telecommunication links such as telephone lines and satellites.
URL	Uniform Resource Locator – a URL is a reference to the address of a resource on the Internet. An example of a URL which addresses the CCEA website is: <code>http://www.ccea.org.uk</code> .
HTTP	Hypertext Transfer Protocol is an application protocol used on the world wide web. It defines how data is structured and transmitted and specifies how browsers and web servers should act in response to requests.
IP address	<p>Internet Protocol address. This represents a standard set of rules used to ensure the proper transfer of information between computers on the Internet. They define how data is to be structured and what control signals are used. Every device linked to a network using the TCP/IP protocol is identified by a unique IP address. The IP address allows messages and data to be routed to the correct address on the network.</p> <p>IPv4 addresses consist of four numbers separated with a dot(.). Each number can be in the range 0 to 255 for example 123.0.0.215. This number allows a device or computer to be located on the network.</p> <p>IP addresses can be:</p> <p>Static – a permanent IP address that does not change.</p> <p>Dynamic – temporary addresses that are assigned each time a computer accesses the Internet.</p> <p>Computers identify websites by their IP address. Most URLs are translate into IP addresses and located on web server using this information.</p>
Web browser	This software allows users to view and use the web pages on the Internet. It is responsible for requesting the text and graphics of webpages from servers on the Internet, and assembling them for display. These are usually in HTML format. Web browsers can be used to view any HTML pages whether users are online or offline.

Key Term	Explanation
Web server	<p>A computer designed to deliver Internet webpages across the Internet or within an Intranet. It processes requests for information that comes from the Internet infrastructure. The web server contains application software to enable the transmission of content and makes use of client-server technology.</p> <p>In client-server technology, the program that accesses the application is called the client. This could be the browser. The program that provides the application is called the server.</p>
Web hosting	<p>In order to have an Internet presence a web hosting service is required. This service provides individuals and organisations with access to a web server and web space to store a website or webpages. The web host company will ensure that the website is available online and the service may include: web space to store the website, an e-mail feature, an interface for managing the website online, customer support</p>
FTP	<p>File transfer protocol – is the most common protocol used to transfer files across the Internet between client and server devices.</p>
ISP	<p>An Internet Service Provider – has direct links to the Internet and accepts transmission from users over communication lines and passes these onto the Internet. The ISP sells Internet access to companies or individuals. and provides access to web servers which connect to the search engines on the internet. An ISP will provide the user with a range of services.</p> <p>Typical services provided by an ISP include</p> <ul style="list-style-type: none"> ✓ A variety of bandwidth options ✓ An email service ✓ A security features such as anti-virus, protection against hacking, viruses, spyware and identity theft. ✓ Web hosting service which allows users to upload their own webpages ✓ Customer support ✓ Website filtering which will filter out unsuitable content ✓ Telephone or Digital TV package.
Search engine	<p>A search engine is a web-based tool that searches for information using keywords or criteria. The search engine will return results as website links based on the criteria provided. Some search engines use a spider or webcrawler. This programme 'crawls' through the web and constructs an index of pages. When a user wants to search for a topic using the Internet, the index of topics, made by the webcrawler, is used. The webcrawler ensures that the index is up to date. Different search engines will search different servers to construct the index. This is why a search on Google may give different results to a search on Firefox.</p> <p>Meta tags can be used to specify key words in the heading of the HTML page. These words help search engines to categorise pages and decide whether or not to include them in the results for a particular search.</p>

Key Term	Explanation
Cache (Browser cache)	In the context of web applications, cache or temporary internet files allow browsers to download website images, data and documents for faster viewing in the future. A local copy of the information is kept. This means that the browser will be able to load at least some information from each page you have visited without downloading that information again from the server. This can decrease the time it takes to load a webpage.
Cookies	Small files downloaded to a computer when visiting a website. They can store previous activity on that site and user preferences. This information can be used when a user visits the site again. Cookies can be also used to track a user's browser history over a period of time which can be considered a privacy concern. Users are generally asked to accept the cookies associated with a website.
Portal	A website that acts as a main entry point to a group of web services. Portals can require the user to logon and provide a range of services such as: email, links to other websites and search engines. Yahoo.com could be described as a portal.
Website	A website is a collection of HTML pages linked together on the world wide web.
Web page	A page of information stored on the world wide web. Features of these pages are: <ul style="list-style-type: none"> • written using the programming language HTML • viewed using a web browser • contain HYPERTEXT which provides the user with clickable links to other pages on the web. • can contain sound, video, animation, graphics and hypertext as well as simple text

How domain names are organised

Domain names provide a human readable version of a location on the Internet infrastructure. In reality the domain name represents an IP address.

Consider <http://www.ccea.org.uk>

www.ccea.org is the Domain name which includes the name of the host server.

[.org](http://www.ccea.org) is the Top Level Domain name (TLD). This indicates the general purpose of the service behind the domain name. Other TLDs include: [.com](http://www.ccea.com), [.org](http://www.ccea.org) and [.net](http://www.ccea.net).

[ccea.org](http://www.ccea.org) is the Second Level Domain name (SLD) it must be unique on the internet. This indicates the owner associated with the IP address.

[uk](http://www.ccea.org) is the country level domain name in this case United Kingdom

Questions

- 1** A company wishes to set up an e-commerce site. As the technical expert you are required to explain to the managing director why web hosting is required.
- a) Produce a report about web hosting and provide three different examples of web hosting packages available online, for the managing director. [8]
 - b) Describe how http and IP addresses are used in data transfer on line. [6]
 - c) Explain how the WWW and Internet differ. [4]
 - d) You have been asked to suggest a domain name for the new website.
 - (i) Explain how a domain name is structured. [5]
 - (ii) Using suitable websites, explain how a domain name is obtained. [4]

- 2** Search engines use a variety of methods to return results. Research two different search engines and provide a list of features they provide. Explain how your chosen search engines find results when searching. [8]

3 Most websites use cookies describe the function of cookies and explain how the use of cookies could be useful to an organisation and why internet users may refuse their use. [6]

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Bibliography
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