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**TASK 1.**

Describe three hardware and three software components that enable access to the web.

1. **Hardware** - **Routers**  
   A Router is a device that forwards data packets between computer networks and therefore a router is connected to two or more data lines from different networks.
2. Internet Cable  
   Internet cable will provide connection from Router to PC.
3. Internet USB Stick

Internet USB stick is an USB looking internet provider that sends Internet connection from Network to PC Software

1. **Browser Software**  
   Browser Software is basically the type of browser you use for example the top three browsers are Firefox, Chrome and Internet Explorer.
2. **World Wide Web**  
   The World Wide Web is a system of interlinked hypertext documents through the internet.
3. **Online Application**  
   a web application is an application is accessed over the internet is usually used on a browser. Some examples of this are Office Workspace and Google Documents.

**TASK 2**

**Explain the role of the following protocols:**

**• TCP/IP including IPv6**   
TCP/IP (Transmission Control Protocol/Internet Protocol) is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network.

**• HTTP**

Because in its original design,  HTTP is a relatively simple file transfer protocol:

* make a request for a file named by a URL,
* get the file in response,
* Disconnect.

**• SMTP.**

SMTP stands for Simple Mail Transfer Protocol. SMTP is used when email is delivered from an email client, such as Outlook Express, to an email server or when email is delivered from one email server to another. SMTP uses port 25

**TASK 3  
Explain the role of the following:**

• Internet Service Provider - Internet Service Providers (ISPs) offer Internet connectivity to homes and businesses.

• Domain name registrar - A domain name registrar is an organization or commercial entity that manages the reservation of Internet domain names. A domain name registrar must be accredited by a generic top-level domain

• Web hosting service. - A web host rents out web server space, which connects files to the Internet. Users receive a username, password and control panel from which they access their web hosting account. Hosts assign accounts a limited amount of server space (up to the amount purchased) and bandwidth (data transferred). Some web hosts focus primarily on shared or dedicated hosting while others provide a combination of both.

**TASK 4**

**Identify and briefly describe four types of web functionality**

1. Communication - Email, Instant Message, Forums, Bulletin Boards, Blogs.
2. File sharing - Data, software and information available on request either within a LAN of an organisation or public global domain
3. Surveillance and security - Cameras, sensors, alerts, between machines to detect relevant issues
4. Database Form - form that deposits data in an online database

**TASK 5**  
  
 **Explain the use of two different Mark-Up languages.**

1. HTML is Hypertext Mark-up Language, a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages.
2. XHTML is Extensible Hypertext Mark-up Language (**XHTML**) is part of the family of XML mark-up languages. It mirrors or extends versions of the widely used Hypertext Mark-up Language (HTML), the language in which Web pages are formulated.

**TASK 6**

**Explain the use and functionality of:**

**• Web runtime environments**   
Runtime environment can consist of several things. Talks about some code that runs before the "program that you wrote" actually gets executed. They come in various levels of complexity. The C runtime on Windows will do things like create a Process and a Thread for a console app, grab and prepare any environment variables etc. and call the int. main function.

• **Web application programming languages**

Web application programming languages are mostly used to create or develop specific function for website or website itself.

• **Databases including SQL**   
MySQL are a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use.

• **PHP.**  
PHP is a general-purpose scripting language that is especially suited to server-side web development, in which case PHP generally runs on a web server. Any PHP code in a requested file is executed by the PHP runtime, usually to create dynamic web page content or dynamic images used on websites or elsewhere.