**Task Two – Written Report**

b. Describes and justifies the hardware and software network requirements of the online community to host the website. (Source : [www.webopedia.com](http://www.webopedia.com))

**Network Requirements**

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| **Organisations** | **Description** | **Justification** |
| **Operating system** | The most important [program](http://www.webopedia.com/TERM/P/program.htm) that [runs](http://www.webopedia.com/TERM/R/run.htm) on a [computer](http://www.webopedia.com/TERM/C/computer.htm). Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing [input](http://www.webopedia.com/TERM/I/input.htm) from the [keyboard](http://www.webopedia.com/TERM/K/keyboard.htm), sending [output](http://www.webopedia.com/TERM/O/output.htm) to the [display screen](http://www.webopedia.com/TERM/D/display_screen.htm), keeping track of [files](http://www.webopedia.com/TERM/F/file.htm) and [directories](http://www.webopedia.com/TERM/D/directory.htm) on the [disk](http://www.webopedia.com/TERM/D/disk.htm), and controlling [peripheral devices](http://www.webopedia.com/TERM/P/peripheral_device.htm) such as [disk drives](http://www.webopedia.com/TERM/D/disk_drive.htm) and [printers](http://www.webopedia.com/TERM/P/printer.htm).  For large systems, the operating system has even greater responsibilities and powers. It is like a traffic cop -- it makes sure that different programs and [users](http://www.webopedia.com/TERM/U/user.htm) running at the same time do not interfere with each other. The operating system is also responsible for [*security*](http://www.webopedia.com/TERM/S/security.htm), ensuring that unauthorized users do not [access](http://www.webopedia.com/TERM/A/access.htm) the system.  Operating systems can be classified as follows:   **[multi-user](http://www.webopedia.com/TERM/M/multi_user.htm)** **:** Allows two or more users to run programs at the same time. Some operating systems permit hundreds or even thousands of concurrent users.   **[multiprocessing](http://www.webopedia.com/TERM/M/multiprocessing.htm)** **:** [Supports](http://www.webopedia.com/TERM/S/support.htm) running a program on more than one [CPU](http://www.webopedia.com/TERM/C/CPU.htm).   **[multitasking](http://www.webopedia.com/TERM/M/multitasking.htm)** **:** Allows more than one program to run concurrently.   **[multithreading](http://www.webopedia.com/TERM/M/multithreading.htm)** **:** Allows different parts of a single program to run concurrently.   **[real time](http://www.webopedia.com/TERM/R/real_time.html):** Responds to input instantly. General-purpose operating systems, such as [DOS](http://www.webopedia.com/TERM/D/DOS.htm) and [UNIX](http://www.webopedia.com/TERM/U/UNIX.htm), are not real-time. | Operating systems provide a [software](http://www.webopedia.com/TERM/S/software.htm) [platform](http://www.webopedia.com/TERM/P/platform.htm) on top of which other programs, called [*application*](http://www.webopedia.com/TERM/A/application.htm) *programs,* can run. The application programs must be written to run on top of a particular operating system. Your choice of operating system, therefore, determines to a great extent the applications you can run. For [PCs](http://www.webopedia.com/TERM/P/PC.htm), the most popular operating systems are DOS, [OS/2](http://www.webopedia.com/TERM/O/OS_2.htm), and [Windows](http://www.webopedia.com/TERM/W/Windows.htm), but others are available, such as [Linux](http://www.webopedia.com/TERM/L/Linux.htm).  As a user, you normally interact with the operating system through a set of [commands](http://www.webopedia.com/TERM/C/command.htm). For example, the DOS operating system contains commands such as COPY and RENAME for [copying](http://www.webopedia.com/TERM/C/copy.htm) files and changing the [names](http://www.webopedia.com/TERM/N/name.htm) of files, respectively. The commands are accepted and [executed](http://www.webopedia.com/TERM/E/execute.htm) by a part of the operating system called the [command processor](http://www.webopedia.com/TERM/C/command_processor.htm) or command line interpreter. [Graphical user interfaces](http://www.webopedia.com/TERM/G/Graphical_User_Interface_GUI.htm) allow you to enter commands by pointing and [clicking](http://www.webopedia.com/TERM/C/click.htm) at [objects](http://www.webopedia.com/TERM/O/object.htm) that appear on the screen. |
| **Web Server software** | Web servers are [computers](http://www.webopedia.com/TERM/C/computer.html) that deliver (*serves up*) [Web pages](http://www.webopedia.com/TERM/W/web_page.html). Every Web server has an [IP address](http://www.webopedia.com/TERM/I/IP_address.html) and possibly a [domain name](http://www.webopedia.com/TERM/D/domain_name.html). For example, if you enter the [URL](http://www.webopedia.com/TERM/U/URL.html) *http://www.pcwebopedia.com/index.html* in your [browser](http://www.webopedia.com/TERM/B/browser.html), this sends a request to the Web server whose [domain name](http://www.webopedia.com/TERM/W/web_server.html) is *pcwebopedia.com*. The server then fetches the page named *index.html* and sends it to your browser.  Any computer can be turned into a Web server by installing server [software](http://www.webopedia.com/TERM/S/software.html) and connecting the machine to the [Internet](http://www.webopedia.com/TERM/I/Internet.html). There are many Web server software applications, including public [domain](http://www.webopedia.com/TERM/W/web_server.html) software from NCSA and Apache, and commercial packages from [Microsoft](http://www.webopedia.com/TERM/M/Microsoft.html), [Netscape](http://www.webopedia.com/TERM/N/Netscape.html) and others. | If the website you are hosting is stored on your web server and you do not have web server software, then you are unable to make it available for the public to access your website. Web server software is important to provide access to a public website. |

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| **Protocols** | An agreed-upon [format](http://www.webopedia.com/TERM/F/format.html) for transmitting [data](http://www.webopedia.com/TERM/D/data.html) between two [devices](http://www.webopedia.com/TERM/D/device.html). The protocol determines the following:   the type of error checking to be used [data compression](http://www.webopedia.com/TERM/D/data_compression.html) method, if any   how the sending device will indicate that it has finished sending a message   *  how the receiving device will indicate that it has received a message   There are a variety of standard protocols from which [programmers](http://www.webopedia.com/TERM/P/programmer.html) can choose. Each has particular advantages and disadvantages; for example, some are simpler than others, some are more reliable, and some are faster.  From a [user's](http://www.webopedia.com/TERM/U/user.html) point of view, the only interesting aspect about protocols is that your [computer](http://www.webopedia.com/TERM/C/computer.html) or device must [support](http://www.webopedia.com/TERM/S/support.html) the right ones if you want to communicate with other computers. The protocol can be implemented either in [hardware](http://www.webopedia.com/TERM/H/hardware.html) or in [software](http://www.webopedia.com/TERM/S/software.html) | ***T****ransmission* ***C****ontrol* ***P****rotocol/****I****nternet* ***P****rotocol,* the suite of [communications protocols](http://www.webopedia.com/TERM/C/communications_protocol.htm) used to connect [hosts](http://www.webopedia.com/TERM/H/host.htm) on the [Internet](http://www.webopedia.com/TERM/I/Internet.htm). TCP/IP uses several [protocols](http://www.webopedia.com/TERM/P/protocol.htm), the two main ones being [TCP](http://www.webopedia.com/TERM/T/TCP.htm) and [IP](http://www.webopedia.com/TERM/I/IP.htm). TCP/IP is built into the [UNIX](http://www.webopedia.com/TERM/U/UNIX.htm) [operating system](http://www.webopedia.com/TERM/O/operating_system.htm) and is used by the Internet, making it the [de facto standard](http://www.webopedia.com/TERM/D/de_facto_standard.htm) for transmitting [data](http://www.webopedia.com/TERM/D/data.htm) over [networks](http://www.webopedia.com/TERM/N/network.htm). Even [network operating systems](http://www.webopedia.com/TERM/N/network_operating_system_NOS.htm) that have their own protocols, such as [Netware](http://www.webopedia.com/TERM/N/NetWare.htm), also [support](http://www.webopedia.com/TERM/S/support.htm) TCP/IP. |

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| **Security**  **Encryption**  **Firewalls**  **Viruses**  **Spyware** | A general phrase used to describe any [software](http://www.webopedia.com/TERM/S/software.html) that provides [security](http://www.webopedia.com/TERM/S/security.html) for a [computer](http://www.webopedia.com/TERM/C/computer.html) or [network](http://www.webopedia.com/TERM/N/network.html). There are many types of security software including [antivirus software](http://www.webopedia.com/TERM/A/antivirus_program.html), encryption software, [firewall](http://www.webopedia.com/TERM/F/firewall.html) software and [spyware](http://www.webopedia.com/TERM/S/spyware.html) removal software. Additionally, many operating systems also come preloaded with security software and tools. The two most common types of security software used for personal computer security are [antivirus software](http://www.webopedia.com/TERM/A/antivirus_program.html) (virus protection software) and antispyware software ([spyware removal](http://www.webopedia.com/TERM/S/spyware.html) software).  The translation of [data](http://www.webopedia.com/TERM/D/data.html) into a secret code. Encryption is the most effective way to achieve data [security](http://www.webopedia.com/TERM/S/security.html). To [read](http://www.webopedia.com/TERM/R/read.html) an encrypted [file](http://www.webopedia.com/TERM/F/file.html), you must have access to a secret [key](http://www.webopedia.com/TERM/K/key.html) or [password](http://www.webopedia.com/TERM/P/password.html) that enables you to [*decrypt*](http://www.webopedia.com/TERM/D/decryption.html) it. Unencrypted data is called [*plain text*](http://www.webopedia.com/TERM/P/plain_text.html) *;* encrypted data is referred to as [*cipher text*](http://www.webopedia.com/TERM/C/cipher_text.html).  There are two main types of encryption: asymmetric encryption (also called [public-key encryption](http://www.webopedia.com/TERM/P/public_key_cryptography.html)) and [symmetric encryption](http://www.webopedia.com/TERM/S/symmetric_encryption.html).  A system designed to prevent unauthorized [access](http://www.webopedia.com/TERM/A/access.html) to or from a private [network](http://www.webopedia.com/TERM/N/network.html). Firewalls can be implemented in both [hardware](http://www.webopedia.com/TERM/H/hardware.html) and [software](http://www.webopedia.com/TERM/S/software.html), or a combination of both.  A computer virus is a program or piece of [code](http://www.webopedia.com/TERM/C/code.html) that is loaded onto your computer without your knowledge and runs against your wishes. Viruses can also replicate themselves. All [computer](http://www.webopedia.com/TERM/C/computer.html) viruses are man-made. A simple virus that can make a [copy](http://www.webopedia.com/TERM/C/copy.html) of itself over and over again is relatively easy to produce. Even such a simple virus is dangerous because it will quickly use all available [memory](http://www.webopedia.com/TERM/M/memory.html) and bring the [system](http://www.webopedia.com/TERM/S/system.html) to a halt. An even more dangerous type of virus is one capable of transmitting itself across [networks](http://www.webopedia.com/TERM/N/network.html) and bypassing [security](http://www.webopedia.com/TERM/S/security.html) systems.  Any [software](http://www.webopedia.com/TERM/S/software.html) that covertly gathers user information through the user's [Internet](http://www.webopedia.com/TERM/I/Internet.html) connection without his or her knowledge, usually for advertising purposes. Spyware [applications](http://www.webopedia.com/TERM/A/application.html) are typically [bundled](http://www.webopedia.com/TERM/B/bundled_software.html) as a hidden component of [freeware](http://www.webopedia.com/TERM/F/freeware.html) or [shareware](http://www.webopedia.com/TERM/S/shareware.html) programs that can be [downloaded](http://www.webopedia.com/TERM/D/download.html) from the Internet; however, it should be noted that the majority of shareware and freeware applications do not come with spyware. Once installed, the spyware monitors user activity on the Internet and transmits that information in the background to someone else. Spyware can also gather information about [e-mail](http://www.webopedia.com/TERM/E/e_mail.html) addresses and even passwords and credit card numbers.  Spyware is similar to a [Trojan horse](http://www.webopedia.com/TERM/T/Trojan_horse.html) in that users unwittingly install the product when they install something else. A common way to become a victim of spyware is to download certain [peer-to-peer](http://www.webopedia.com/TERM/P/peer_to_peer_architecture.html) file swapping products that are available today. | Security methods such as encryption, firewalls, anti virus/spyware software all aim to protect your computernetwork against unathorised access and installation of virus’  Firewalls are frequently used to prevent unauthorized [Internet](http://www.webopedia.com/TERM/I/Internet.html) users from accessing private networks connected to the Internet, especially [*intranets*](http://www.webopedia.com/TERM/I/intranet.html). All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified [security](http://www.webopedia.com/TERM/S/security.html) criteria. |
| **Proxy servers** | A [server](http://www.webopedia.com/TERM/S/server.htm) that sits between a [client application](http://www.webopedia.com/TERM/C/client.htm), such as a [Web browser](http://www.webopedia.com/TERM/B/browser.htm), and a real server. It intercepts all requests to the real server to see if it can fulfill the requests itself. If not, it forwards the request to the real server. | Proxy servers have two main purposes:   **Improve Performance:** Proxy servers can dramatically improve performance for groups of users. This is because it saves the results of all requests for a certain amount of time. Consider the case where both [user](http://www.webopedia.com/TERM/U/user.htm) X and user Y access the [World Wide Web](http://www.webopedia.com/TERM/W/World_Wide_Web.htm) through a proxy server. First user X requests a certain [Web page](http://www.webopedia.com/TERM/W/web_page.htm), which we'll call Page 1. Sometime later, user Y requests the same page. Instead of forwarding the request to the Web server where Page 1 resides, which can be a time-consuming operation, the proxy server simply returns the Page 1 that it already fetched for user X. Since the proxy server is often on the same [network](http://www.webopedia.com/TERM/N/network.htm) as the user, this is a much faster operation. Real proxy servers support hundreds or thousands of users. The major online services such as [America Online](http://www.webopedia.com/TERM/A/America_Online.htm), [MSN](http://www.webopedia.com/TERM/M/MSN.htm) and [Yahoo](http://www.webopedia.com/TERM/Y/Yahoo.html), for example, employ an array of proxy servers.   **Filter Requests:** Proxy servers can also be used to filter requests. For example, a company might use a proxy server to prevent its employees from accessing a specific set of [Web sites](http://www.webopedia.com/TERM/W/web_site.htm). |