

# Introduction to Programming

## Week 2 - Class Activity

### Goals:

In this class activity we will create a simple HTML page with some text and use Browser based Developer Tools to inspect and modify the page in the browser.

#### Tools Needed

- Computer
- Terminal / Console / Powershell
- Text Editor (Notepad, Textedit)
- Web Browser (Chrome)

### Activity Outline:

- **Open** a **File Browser** window (*Finder, My Computer, Home folder*) so you can watch the files being created or edited while you are working in the terminal.
- **Open** the **Terminal** (bash, console)
- Using the **Terminal** use the commands you know to **Navigate** to the **Documents** folder.
  - This folder could be in the *OneDrive, Dropbox* or *Google Drive* folders if you have it setup. Do not forget the extra steps in navigating to these folders in the command line.
- Using Terminal to **navigate** to the **Projects** folder inside the **Documents** folder.
- Create a new file called **index.html** inside a new folder called **project2**.
- **Open** the **index.html** file with your **text editor** (Notepad, TextEdit).
- **Copy** and **paste** the following snippet of **HTML code** into the **text editor**. Overwriting anything that was there previously.

Unset

```
<!DOCTYPE html>
<html>

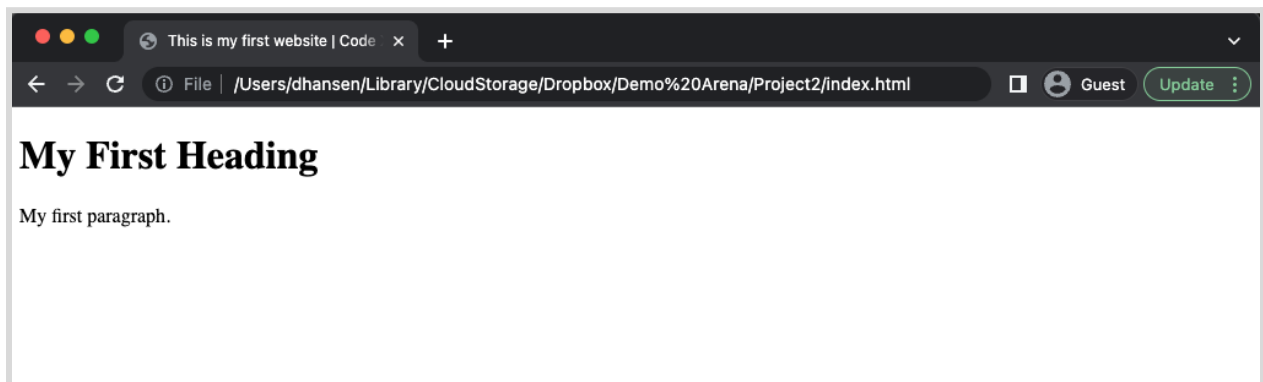
<head>
<title>This is my first website | Code X</title>
</head>

<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

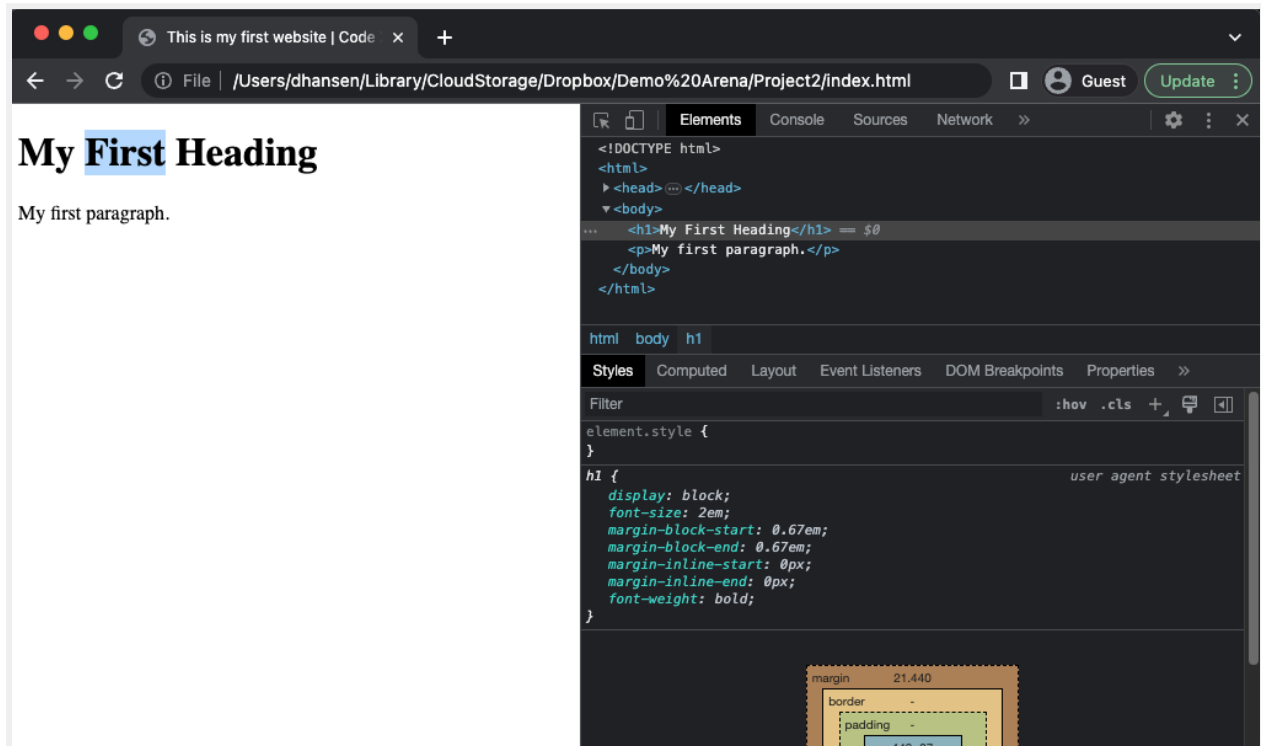
- Save the file.
- In the File Explorer or Finder open ***index.html*** with a web browser such as Chrome, Edge, Safari, or Firefox.
- You should see something like the following screenshot.



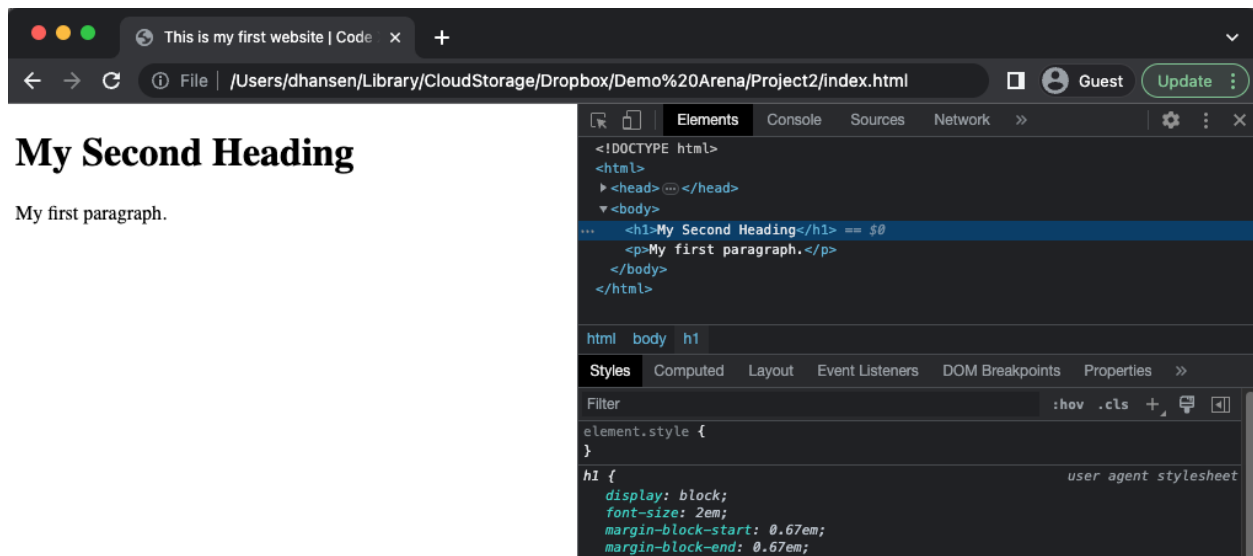
- Find the word “**First**” or any word in the content of the browser window, and **right click** then in the menu that pops up click on **Inspect**. Another window will pop up ;



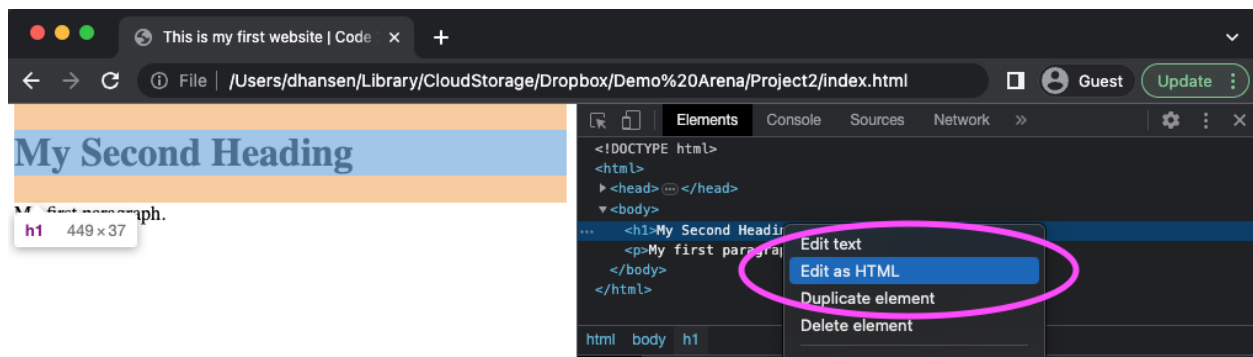
- The **Elements** panel should come up with the `<h1>My First Heading</h1>` selected.



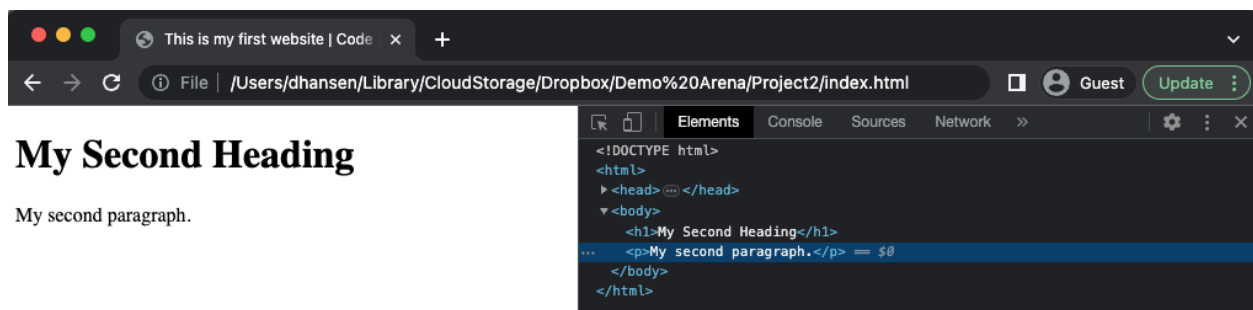
- Double click into the highlighted section and replace “First” with “Second”.



- Or Alternately “Right Click” on the word you want to edit and select “Edit as HTML”



- Do the same with the paragraph section underneath. Replace “My first paragraph.” with “My second paragraph.”



- Refresh the browser and your changes will disappear. You may now close out of everything.

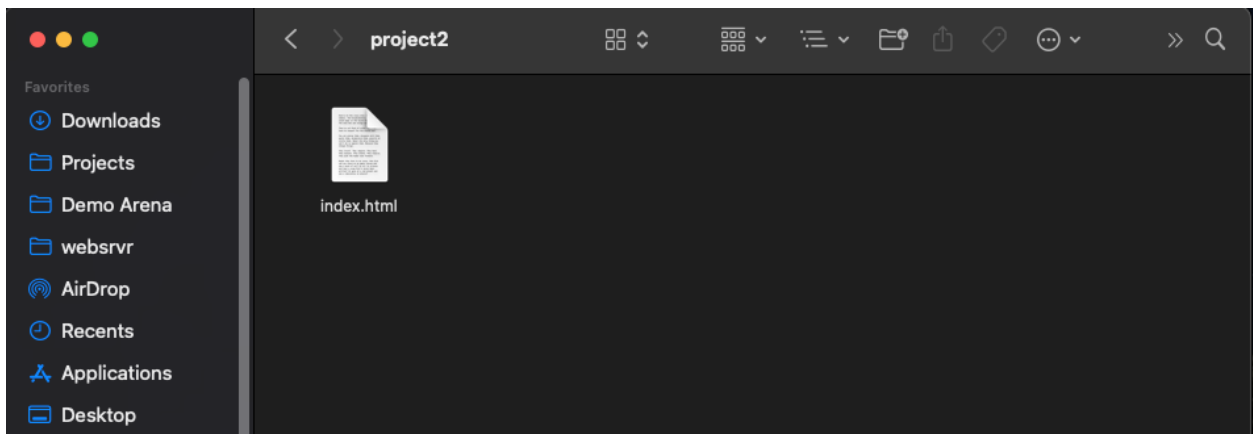
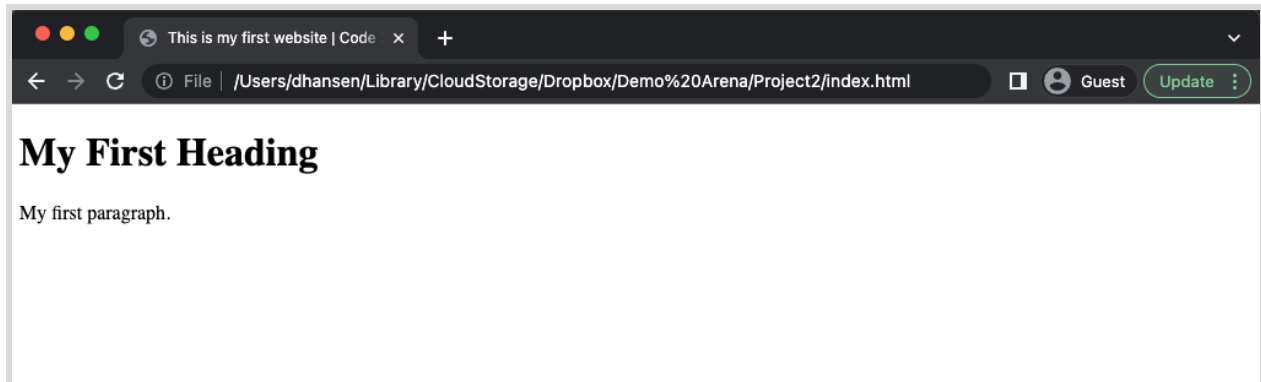
## Bonus Activity:

Go back and reopen **index.html**. Make the changes permanent by editing the source file in Notepad/TextEdit or any other plain-text reader.

## Artifacts:

- **project2** folder in **Projects** in the **Documents** folder
- **Index.html** file

## Screenshot of final files.



## Command Line Basics

<b>pwd</b>	Prints the full name (the full path) of current/working directory
<b>ls</b>	List directory contents
<b>ls -a</b>	List all the content, including hidden files
<b>ls -l</b>	List the content and its information
<b>mkdir</b> <i>foldername</i>	Creates a new directory <i>foldername</i>
<b>cd</b>	Returns to <i>\$home</i> (default or user) directory
<b>cd</b> <i>foldername</i>	Change the working directory to <i>foldername</i>
<b>cd ..</b>	Goes up a directory
<b>cd -</b>	Returns to the previous directory
<b>cp</b> <i>source destination</i>	Copies source (file or folder) to destination (file or folder)
<b>cp -r</b> <i>source destination</i>	Copies a directory recursively (repeats) from <i>source</i> to <i>destination</i>
<b>mv</b> <i>source destination</i>	Moves source (file or folder) to destination (file or folder)
<b>rm</b> <i>filename</i>	Removes <i>filename</i>
<b>rm -r</b> <i>foldername</i>	Removes a directory and its contents recursively (repeats)

### More Help:

[https://developer.mozilla.org/en-US/docs/Learn/Tools\\_and\\_testing/Understanding\\_client-side\\_to\\_ols/Command\\_line](https://developer.mozilla.org/en-US/docs/Learn/Tools_and_testing/Understanding_client-side_to_ols/Command_line)

# Vocabulary

**address** (noun): a string of letters/numbers that identifies the location of a website/webpage (for example <https://www.example.com/page>) or the destination for email messages (for example [user@example.com](mailto:user@example.com)). - *Let me have your email address and I'll send you the details.*

**admin** (abbreviation): administrator

**administrator** (noun): a person responsible for day-to-day running and operation of a website etc. - *If you lose your password and can contact the admin staff for help.*

**app** (abbreviation): application (especially when downloaded to and used on a mobile device). - *I want to install that app on my phone.*

**application** (noun): in computing, a software program that runs a particular operation. - *Have you downloaded that new database application yet?*

**avatar** (noun): an icon or symbol representing a particular person in an internet forum or video game etc. - *You've got such a cool new avatar for your profile. I love it!*

**bandwidth** (noun): the transmission capacity of an electronic communications system or computer network, expressed for example as megabits per second (Mbps or Mb/s). - *To download videos you may have to pay extra for more bandwidth.*

**banner** (noun): an advertisement on a webpage in the form of a graphic bar, column or box. - *Most people really hate websites with too many banners on their pages.*

**bit** (noun): short for **binary digit**; the smallest and most basic unit of information in computing and digital communications. Eight bits equal one byte. - *The bit commonly represents a state with one of two possible values, for example 1 or 0, yes/no, on/off etc.*

**blog** (noun): a (relatively small) regularly updated website or webpage, often operated by an individual and written in a conversational style. A blog is composed of posts. Originates from *web log*. - *When Wora was traveling she started a blog to describe all the places she went.*

**blog** (verb): write a post or posts on a blog. - *I used to blog every day but I've been getting lazy lately.*

**bookmarks** (noun): *favorites*; a record (usually in a browser) of preferred website links for easy access. - *I've got so many bookmarks in my browser that it's usually quicker to just google the site I want!*

**browse** (verb): look around the internet or look through or scan a website (as opposed to making a specific search). - *Once I start browsing the net I never finish lol.*

**browser** (noun): an application on computer, smartphone and other devices for connecting to the internet and navigating between web pages. - *Most smartphones come with a default browser (like Safari on iPhone) but if you prefer you can easily install some other browser to use instead.*

**button** (noun): on a webpage or in an email etc, a graphical control element that the user can easily click on to trigger an event, such as searching for a keyword on a search engine, or confirming any action such as upload/download/pay now. - *When you've filled in the form just click the big blue button to continue.*

**byte** (noun): a unit of digital information that (usually) consists of eight bits. - *Historically, a byte referred to the number of bits used to encode a single character of text in a computer.*

**cache** (noun): temporary storage or memory from which high-speed retrieval is possible. - *You may need to clear your browser cache if you keep getting the old data.*



**case-sensitive** (adjective): making a difference between CAPITAL letters (upper-case) and small letters (lower-case). - *Be careful, the password is case-sensitive so PaSsWoRd is not the same as password or PASSWORD.*

**chat** (verb): engage in an online chat. - *How long are you online for? Have you got time to chat a bit?*

**chat** (noun): an informal online conversation using text messages in real time. - *Many internet users enjoy online chat from time to time.*

**click** (verb): On a webpage, email etc, press on or tap a link, image or button to perform some action. - *Click here to save money.*

**click** (noun): an act of clicking on a webpage, email etc. - *We get a thousand clicks every day from this webpage.*

**clickbait** (noun): sensational content or headlines specifically written to encourage visitors to click. - *Don't click on that trash. It's just clickbait for the gullible.*

**clipart** (noun): fairly basic and inexpensive pictures and graphics made for people to add to their documents or webpages. - *You could easily find some clipart to illustrate your blog post, but if you want something more professional you may have to pay for it.*

**cloud computing** (noun): the practice of using online applications and services hosted on the internet rather than in local or personal computers. - *I rely on cloud computing to backup my photos so if I lose my phone I don't lose my pics.*

**comments** (noun): on a webpage, visitors' thoughts and opinions about a post or article. - *Do you like to leave comments on random blog posts or do you think it's a waste of time?*

**comment** (verb): give an opinion or express some information at the end of a post or article. - *There's a comment section at the end so feel free to comment there.*

**cookie** (noun): a small file that a webserver installs on your computer or device to identify and track you. - *I just checked my browser and it says there are 74 cookies in use on this website.*

**copyright** (noun): a legal right to publish original work such as a document, song or film. - *He said that some website copied all his pages without permission and he's going to take them to court and sue them for a million dollars for copyright infringement.*

**database** (noun): a system of data and information held in a computer or web server. - *Some social media sites have more information about you in their databases than you have.*

**developer, web developer** (noun): a programmer who builds and maintains websites. - *A web developer is more involved in the coding and scripting side of websites while a webmaster tends to look after the content.*

**digital** (adjective): relating to data expressed electronically or using numerical digits. - *You can upload digital images from your phone to the internet.*

**digital communication** (noun): transfer of information using digital signals (both wired and wireless). - *Email sent over the internet is an example of digital communication.*

**direct message, DM** (noun/verb): a private communication between users on social media, forums etc, which can only be seen by the sender and the recipient. Also called private messages or PM. - *Please DM me with your email address.*

**domain extension, domain suffix** (noun): the group of characters at the end of a domain name, for example "com" in englishclub.com. - *I tried to get .com for my new domain name but it's been taken, so do you think .co.uk would be ok?*

**domain name** (noun): a unique name that identifies a website, for example englishclub.com or equiz.me. - *In www.google.com, only google.com is the domain name, and in https://www.apple.com/mac/ only apple.com is the domain name.*

**DOS** (abbreviation): denial of service

**denial of service attack** (noun): a deliberate and malicious attempt to make a web server (or other computer) fail and stop working. - *Many famous websites such as Google and Twitter have been targets of DOS attacks in the past.*

**DNS** (abbreviation): Domain Name System

**Domain Name System** (noun): a decentralized system that allows internet domain names and other online resources to be tracked and regulated. - *It's thanks to DNS that when you type englishclub.com into your browser you don't end up at tefl.net.*

**down** (adjective): of a server or website, state of being non-operational, not working. - *Is Google still down? Let me know when it's up.*

**download** (verb): copy files from the internet to your own computer or device. Compare upload. - *Do you know any website where I could download all the James Bond films for free?*

**e-commerce** (noun): commercial transactions done electronically on the internet. - *Would you say that Amazon.com is the most successful example of e-commerce?*

**email 1** (noun, uncountable): short for electronic mail, a system through which messages can be sent worldwide to and from anyone with an email address. - *They used to say social media would kill email. How wrong they were!*

**email 2** (noun, countable): a specific message received by email. - *Do you read your emails once-a-day or as they come in?*

**EMF** (abbreviation): electromagnetic fields

**electromagnetic fields** (noun): invisible electric and magnetic force fields and

radiation in and around all live electrical equipment including computers, cables, mobile phones and devices, modems, wifi routers and wifi systems. - *Excessive EMF is harmful to human beings, especially babies and children, and we should do everything possible to reduce or eliminate it.*

**FAQ** (abbreviation): Frequently Asked Questions (pronounced [eff-ay-kyu] OR [fak])

**Frequently Asked Questions** (noun): a list of questions that people often ask. - *Most people just say FAQ instead of Frequently Asked Questions; and if there are several lists they may say FAQs.*

**Favorites** (noun): bookmarks; a record (usually in a browser) of preferred website links for easy access. - *Have you noticed that some browsers say favorites and some say bookmarks?*

**field, form field** (noun): a box on an internet form where you can enter data such as name or address. - *Please fill in all fields.*

**filter, web filter** (noun): content control software designed to limit the websites an internet user can visit on a particular computer. - *Many parents install web filters to block their children from seeing unsuitable websites.*

**firewall** (noun): a computer network security system that restricts internet access within a private network. - *I can't access YouTube on my office computer since the company installed a firewall.*

**follow** (verb): track somebody on social media by subscribing to their account. - *I used to follow celebrities on Twitter but not any more.*

**follower** (noun): somebody who is tracking a particular account on social media. - *A lot of people don't like him but he still has over two million followers on Twitter.*

**format, file format** (noun): the way data is saved within a file, for example:  
*image: gif, jpg, png*  
*audio: mp3*

*video: mp4*

*text: html, htm, php, asp*

**forum, web forum** (noun): a section on a website that lets users communicate with each other by posting public (and private) messages. - *Anyone can read this forum but if you want to post messages you need to sign up.*

**forward** (verb): send an email that you have received to another person. - *My emails are forwarded to a friend when I'm on holiday.*

**FTP** (abbreviation): file transfer protocol

**file transfer protocol** (noun): a communication system used for the transfer of computer files over the internet, typically between a server and a computer. - *Some web developers use FTP to upload their webpages to their server.*

**GB, gigabyte** (noun): a unit of information equal to one thousand million bytes or one thousand megabytes; often abbreviated as gig. - *How many gigs does your hard drive hold?*

**GIF** (abbreviation): 1. one of several different formats for digital image files, supporting animated and static images 2. a file in GIF format, for example image.gif. - *We'll use a gif so that the image can be animated.*

**go down** (verb): of a website or server, go offline because of overload, attack or accident. - *Their server went down thanks to a DOS attack from hackers.*

**hack** (verb): gain unauthorized access to a website, database, email etc. - *His email was easily hacked because he used a very simple password.*

**hacker** (noun): a person who hacks and gains unauthorized access to internet systems. - *The police think it was a group of foreign hackers that stole the money through the bank's website.*

**history** (noun): a record in a web browser of recently visited websites. - *Usually you can set your browser to delete your history after a set number of days.*

**homepage** (noun): the first or main page of a website. - *You can return to the homepage at any time by clicking the logo at top-left of every page.*

**HTML** (abbreviation: HyperText Markup Language): the coding language and format used to create web pages. - *Many webpages have the extension .html and sometimes .htm, but it's the same thing.*

**https** (abbreviation: HyperText Transport Protocol Secure): the data transfer protocol used on the World Wide Web, the prefix of websites for example <https://www.englishclub.com>. - *The original protocol was http and it became https when more security was added.*

**hyperlink** (noun): highlighted word, words or image that you can click on to go to another section or to another page on the internet. - *Originally, hyperlinks were blue and underlined, but now they may be almost any color.*

**icon** (noun): a visual representation of something (for example folders and files) on a computer or website. - *Most people know to click on the trash can icon to delete a file.*

**inbox** (noun): in email, the folder where incoming emails go first. - *I feel so happy when I manage to deal with all my new emails and my inbox is empty.*

**internet, Internet** (noun): a global electronic network providing a variety of information, education, entertainment, shopping and other facilities accessible to anyone with a computer and mobile phone. - *It's hard to imagine a world without the Internet, but a few decades ago nobody had heard of it.*

**intranet** (noun): a private or restricted network (like a mini-internet) that can only be accessed by authorized users. - *Many companies have their own intranet so that staff can share messages and files privately.*

**IP** (abbreviation): Internet Protocol

**Internet Protocol** (noun): the set of rules for sending and receiving data over the internet. - *All our different computers, servers, devices and platforms wouldn't be able to talk to each other globally without the Internet Protocol.*

**IP address** (noun): a unique address or string of characters that identifies each device on the internet. - *People often say "IP" instead of "IP address" in full. For example "What's your IP?"*

**ISP** (abbreviation): internet service provider

**internet service provider** (noun): a company that provides you with access to the internet. - *By coincidence the company I work for uses the same ISP as we do at home.*

**IT** (abbreviation): information technology

**information technology** (noun): the study and use of systems (especially computers and telecommunications) for the storage, retrieval and sending of data/information. - *These days IT is one of the best career choices for young people.*

**JPG, JPEG** (noun): 1. one of several different formats for digital image files, typically used for photographs 2. a file in JPG format, for example image.jpg. - *Photographs, with colors and gradients, usually convert best to JPG.*

**keyword, keyphrase** (noun): a word or group of words that summarize a topic and can be used to find the topic in a search engine. - *Trashy websites often stuff their pages with keywords in the hope that they will appear at the top of search engine results.*

**LAN** (abbreviation): local area network

**local area network** (noun): a computer network linking devices within a building or several buildings. - *All the printers at work are connected to our LAN.*

**link** (noun): hyperlink. - *Did you have to pay them to get a link to your website?*

**link** (verb): create a hyperlink between web pages. - *Is it ok if I link to your latest post?*

**log in/log on** (verb): enter a username and password to gain access to a website, computer, database etc; sign in. - *It's mostly websites involving money or membership that require you to log in.*

**meme** (noun): a (usually funny) image, video, text etc that is copied and spread rapidly by internet users. - *Memes are like little thought bombs that capture people's imagination for a time.*

**message** (noun): an email or similar electronic communication; an automatic electronic communication displayed on a screen. - *I was checking my mail messages when a warning message popped up on the screen.*

**modem** (noun): a device used for connecting a computer to an ISP's incoming internet line. - *If you don't have a modem your internet provider should give you one for free.*

**net** (noun): short for internet. - *Apart from email and the world wide web, how many other services are there on the net?*

**network** (noun): a number of interconnected computers, servers etc. - *The ultimate network of course is the Internet.*

**offline** (adjective): the state of being down or disconnected (from the internet). - *People are going crazy because Google's been offline all morning.*

**online** (adjective): the state of being up or connected (to the internet). - *You can't access our website right now but it should be back online in thirty minutes.*

**OP** (abbreviation): original poster - the first to start a forum topic - *We're going off-topic so I'll try to answer exactly what the OP asked.*

**password** (noun): a secret word or string of characters that allows access to a computer or website. - *Some passwords have to be eight or more characters long and composed of letters, numbers and special characters like \$, &, %.*



**phishing** (noun): the fraudulent practice of sending fake emails apparently from reputable companies like your bank, to induce you to reveal personal information such as credit card details and passwords. - *Be on the lookout for scam phishing emails - if in doubt go directly to the official website or phone a number you know.*

**platform, online platform, digital platform** (noun): a fairly flexible term that usually means a website or mobile app that facilitates the exchange of information, goods or services between users or between users and the platform. Examples may include Twitter, Amazon and Booking.com. - *It's generally agreed that a platform is more than just a big website.*

**podcast** (noun): a digital audio recording on the internet, typically a talk or interview, that can be streamed or downloaded to a computer or mobile device. - *Podcasts started as sound-only files but these days they are often video too, like the famous Joe Rogan podcast on Spotify.*

**print out** (noun): paper version of a web page, for example, after being printed. - *I need a print out of these search results as soon as you can please.*

**program** (noun): a series of coded software instructions to control the operation of a computer, website etc; application, app. - *This is a great recording program but it only runs on Mac.*

**programming language** (noun): one of several languages used for programming or writing computer code, such as Basic, C++, Java, Perl, PHP etc. - *Knowledge of more than one programming language is usually essential if you want to be a highly-paid programmer.*

**protocol** (noun): in computing, a set of rules that govern the exchange or transmission of data between devices (something like the grammar rules of a human language). - *If two devices support the same protocol, they can communicate with each other, no matter the type of device or the manufacturer.*

**router, wifi router** (noun): a machine which receives internet from your modem and then "routes" the internet to your various devices such as computers and laptops, mobile phones, tablets, TVs and printers etc. - *My computer is wired to the router for top speed and reliability, but the rest of my devices use wifi for convenience.*

**scroll up/down/sideways** (verb): move text and graphics on a screen up or down to see different parts of it; sometimes also move sideways to left or right. - *On most websites I immediately scroll down past all the ads to find the real content.*

**search** (verb): look for a particular webpage or topic on the web, usually using a keyword on a search engine like Google. - *Try searching for "hotel london" on Google and see what comes up first.*

**search engine** (noun): specialized website (for example Google or Yandex) that looks for and identifies web pages that correspond to keywords or keyphrases entered by a user. - *It's amazing how quickly these search engines can return millions of results to my searches in a split second.*

**SEO** (abbreviation): search engine optimization

**search engine optimization** (noun): the practice of optimizing and adjusting a website or webpage in the hope that it will appear at the top of search engines rankings. - *Some webmasters spend big money on SEO consultants to tweak every heading, meta tag and word for better results, while others believe that just writing natural and good quality content automatically brings good results.*

**share** (verb): let people know about some web page or resource by linking to it or posting it on social media. - *Please share my story with all your friends.*

**sign in** (verb): log in. - *If you want to comment you have to sign in first.*

**social media** (noun): websites and platforms on the world wide web that let users create and share content and communicate with other members. - *These days I try not to waste time on social media.*

**software program** (noun): found on websites, computers and mobile phones etc, an application that has a specific function (for example a database, spreadsheet, calendar); an app. - *Can this software program run on Windows and Mac?*

**spam, spam mail** (noun): unrequested, irrelevant and/or unwanted email, often sent in bulk, for the purposes of advertising, phishing, spreading malware etc. - *Half the emails I get every day are spam and get filtered straight to my spam bin.*

**spammer** (noun): a person who generates spam. - *Our company is currently warning staff to avoid the latest trick by spammers to gather email addresses.*

**subscribe** (verb): if you subscribe to a website or email newsletter you join up and expect to receive regular communication, usually by email. - *If I subscribe to your newsletter, how can I unsubscribe if I don't like what you send me?*

**switch something off, switch off something** (verb): turn something off; stop the operation of something by using a button or switch. - *I switched off the computer and went to bed.*

**toolbar** (noun): a slim horizontal control panel usually at the top of an application, typically a web browser. - *You can customize this toolbar and I usually add the share button and zoom in/out controls.*

**type in** (verb): enter words from your keyboard, for example into a name and address box, or into the url bar at the top of a browser. - *Type in your details and then press Submit.*

**up** (adjective): of a server or website, state of being operational, working correctly. - *Facebook's been down all day but it's up now.*

**upload** (verb): copy files from your own computer or device to the internet. Compare download. - *As soon as I write a new page on my computer, I upload it to my webserver and after that it's visible on the internet worldwide.*

**URL** (abbreviation): uniform resource locator

**uniform resource locator** (noun): the full address of a website or webpage, for example <https://www.englishclub.com/grammar/>. - *Normally people just say URL, pronounce U-R-L, for example: What's the URL for your latest webpage?*

**user ID, userID** (noun): a unique identifier or username used for logging on to a website. - *On this website my userID is the same as my email so I can remember it easily.*

**username** (noun): userID; a special name used by a user to login to a website, or to post messages or use an email service etc. - *To change your username you may need to ask the admin to do it for you.*

**virus, computer virus** (noun): a piece of harmful code that can copy and spread itself in computers, internet servers, websites etc, potentially corrupting the system or destroying data. - *Windows computers are notorious for getting infected by viruses if they don't have really good anti-virus software.*

**WAN** (abbreviation): wide area network

**wide area network** (noun): a computer network over a larger area than a LAN, typically having a radius of more than 1 kilometer. - *Wide area networks are a bit like local area networks but miles bigger, sometimes connected by satellite.*

**web** (noun): short for world wide web. - *Does anyone know just how many pages there are on the web?*

**web hosting** (noun): a service that maintains multiple (thousands of) websites on its servers, acting on behalf of the website owner. - *Seems like web hosting is quite a popular business; it's one of the more expensive keywords in Google Advertising.*

**webmaster** (noun): a person who maintains a particular website, especially its content. Compared to a web developer who mainly looks after the programming and technical side of a website. - *Please send new ideas for blog posts to our webmaster.*

**web page, webpage** (noun): any one of billions of pages on the world wide web. Most websites have tens, hundreds or thousands of web pages. - *A few websites consist of a single webpage only.*

**web server** (noun): a specialized computer connected to the internet and serving one or more websites 24-hours a day. - *There will be some interruption to our website as we will be upgrading our web server over the weekend.*

**website** (noun): one or more web pages under a single domain name and typically based around the same topic and managed by a single organization or person. - *You can find much more information on their website.*

**Wi-Fi, wifi** (noun): a system that lets computers, smartphones and other devices connect wirelessly to each other over a limited area or connect to the internet. - *Strictly-speaking the term Wi-Fi is a registered trademark owned by the Wi-Fi Alliance.*

**wireless LAN, WLAN** (noun): a wireless local area network based on radio (wireless) transmissions, for example Wi-Fi. - *All computers and printers in our office are connected to our WLAN.*

**WWW, www** (abbreviation): world wide web; often used as part of a website address, for example <https://www.englishclub.com>

**World Wide Web, world wide web** (noun): information system on the internet that allows pages (documents) to be connected to other pages by hypertext links, such that users can search for information by moving from one page to another page; the web for short. - *The first time I saw the World Wide Web I was immediately struck by the opportunities for sharing knowledge world-wide.*