# Glossary

The following terms and definitions were developed using various resources listed in the reference section that follows the glossary terms.

|  |  |
| --- | --- |
| **abstraction** (process) | The process of reducing complexity by focusing on the main idea. By hiding details irrelevant to the question at hand and bringing together related and useful details, abstraction reduces complexity and allows one to focus on the problem. |
| **abstraction** (product) | An abstraction is a new representation of a thing, a system or a problem, which helpfully reframes a problem by hiding details irrelevant to the question at hand. |
| **Acceptable Use Policy (AUP)** | An acceptable use policy (AUP) is a document stipulating constraints and practices that a user must agree to for access to a district/corporate network or the Internet. Many businesses and educational facilities require that employees or students sign an AUP before being granted a network ID. |
| **algorithm** | A set of unambiguous rules or instructions to achieve a particular objective.1 |
| **alphanumeric** | A combination of alphabetic and numeric characters, including other symbols, such as punctuation and mathematical symbols.2 Example: ABC123 |
| **annotated bibliography** | An annotated bibliography includes a summary and/or evaluation of each of the sources in a bibliography. |
| **application** | Software (program) that is used by people to accomplish a task. |
| **array** | A data structure comprising a collection of values of the same type accessible through an index.1 Fixed size. Example: [A, B, C, D] is an array of letters. The second element of the array is B. |
| **assistive technology**  | In general, the term `”assistive technology device” means any item, piece of equipment, or product system, whether acquired commercially off-the-shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a person with a disability. Exception: The term does not include a medical device that is surgically implanted, or the replacement of such device. 3 |
| **asynchronous** | Not necessarily in the same time and place. |
| **attribute** | A specification that defines a property of an object, element, or file. It may also refer to or set the specific value for a given instance of such. For clarity, attributes should more correctly be considered metadata. An attribute is frequently and generally a property of a property.2 Example: The “color” attribute of a red car would have the value “red.” |
| **authentication** | Any process by which you verify someone or something (a device) is who, what, they or it claim(s) to be. Example: Some websites use a combination of e-mail address and password as a means of authentication. |
| **bandwidth** | Describes the maximum data transfer rate of a network or Internet connection. It measures how much data can be sent over a specific connection in a given amount of time.4 |
| **big data** | Data sets that are so large or complex that traditional data processing applications are inadequate.2  |
| **binary**  | A method of encoding data using two symbols, 1 and 0. 1 |
| **binary number**  | A number written in the Base-2 Number System.1 Example: the number 4 written in binary is 100. |
| **bit**  | A basic unit of data that stores one binary value, 1 or 0. 1 |
| **Boolean**  | A data type with only two values, TRUE or FALSE. 1 |
| **browser cookie**  | A small piece of text recording activity about websites one visits stored on one’s computer.1 |
| **class** | In object-oriented programming, a class is an extensible program-code template for creating objects, providing initial values for state (member variables) and implementations of behavior (member functions, methods).2  |
| **code**  | Any set of instructions expressed in a programming language.1 |
| **coding**  | The act of writing computer programs in a programming language.1 |
| **color depth**  | The number of different colors that may be used in an image dictated by the number of bits used to represent the color of each pixel.1 |
| **component** | A reusable element with a specification for how it is to be used (with inputs and outputs, as appropriate). |
| **computational artifact** | Inventions, creations, final products, and development byproducts, created by the act or process of computing. |
| **computational devices** | See computing devices. |
| **computational thinking**  | A way of thinking when computing that uses decomposition, pattern recognition, abstraction, pattern generalization, and algorithm design. |
| **Computer Science (CS)**  | The study of computers and algorithmic processes, including their principles, hardware and software designs, applications, and their impact on society.5 |
| **computing**  | Any goal-oriented activity requiring, benefiting from, or creating algorithmic processes.2 |
| **computing artifacts** | Any creation facilitated by a computer, such as digital documents, digital videos, databases, computer program including computational models, and simulations. |
| **computing devices**  | A machine that can be programmed to carry out a set of logical or arithmetic operations (e.g., a laptop computer, a mobile phone, a computer chip inside an appliance). |
| **conditional/conditional statement** | In [computer science](http://en.wikipedia.org/wiki/Computer_science), conditional statements, conditional expressions, and conditional constructs are features of a [programming language](http://en.wikipedia.org/wiki/Programming_language) which perform different computations or actions depending on whether a programmer-specified [*Boolean*](http://en.wikipedia.org/wiki/Boolean_datatype) *Condition* evaluates to true or false.2 |
| **Central Processing Unit (CPU)**  | The device within a computer that executes instructions.1 |
| **cyberbullying** | The use of electronic communication to bully a person typically by sending messages of an intimidating or threatening nature. |
| **cyber harassment** | The use of the Internet or other electronic means to harass an individual, a group, or an organization. |
| **database** | An integrated and organized collection of logically related records or files or data that are stored in a computer system which consolidates records previously stored in separate files into a common pool of data records which provides data for many applications.2 |
| **data structure**  | A particular way to store and organize data within a computer program. 1 |
| **data visualization** | The presentation of data in a static or dynamic graphical format. Example: chart, table, or infographic. |
| **De Morgan’s Laws** | A pair of logical rules that are used to help build conditions in computers programs. The rules are:NOT (A and B) = NOT A or NOT BNOT (A or B) = NOT A and NOT B |
| **debugging**  | The process of finding and correcting errors in programs.1 |
| **decimal**  | The base 10 number system.1 |
| **decomposition**  | Breaking a problem or system down into its components.1 |
| **digital**  | Created in a form that is the 1s and 0s a computer uses to store information. |
| **digital artifact**  | Digital content made by a human with intent and skill.1 Example: computer animation, LED infused clothing, interactive sculpture, 3-D printed objects, songs. |
| **digital citizenship** | The norms of appropriate, responsible behavior with regard to the use of technology. |
| **digital creator**  | A person who makes digital artifacts.1 |
| **digital device**  | An electronic device that can receive, store, process, or send [digital information](http://itlaw.wikia.com/wiki/Digital_information).6 |
| **digital divide** | The gap between those who have access to digital technology and those who do not, which is influenced by social, cultural and economic factors. |
| **digital literacy** | The ability to use digital technology, communication tools or networks to locate, evaluate, use, and create information.7 The ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers.8A person’s ability to perform tasks effectively in a digital environment. Literacy includes the ability to read and interpret media, reproduce data and images through digital manipulation, and evaluate and apply new knowledge gained from digital environments.9  |
| **digital media**  | Media encoded in a computer-readable form.1 |
| **digital privacy** | The protection of personal information on the Internet. |
| **digital safety**  | The knowledge of maximizing the user's personal safety and security risks to private information and property associated with using the Internet and the self-protection from computer crime in general. |
| **digital tools** | An application that produces, manipulates, or stores data in a digital format (e.g., word processors, drawing programs, image/video/music editors, simulators, 3D-design sketchers, publishing programs). |
| **ergonomics** | Designing and arranging things people use so the people and things interact most efficiently and safely. |
| **expression** | An expression in a programming language is a combination of explicit values, constants, variables, operators, and functions that are interpreted according to the particular rules of precedence and of association for a particular programming language which computes and then produces (returns, in a stateful environment) another value.2 Example: b = a + 2. |
| **fair use**  | The legal concept that allows brief excerpts of copyrighted material to be used for purposes such as review, news reporting, teaching, scholarship, or art. |
| **firewall** | A network security system with rules to control incoming and outgoing traffic. |
| **function** | A function is a type of procedure or routine. Some programming languages make a distinction between a function, which returns a value, and a procedure, which performs some operation, but does not return a value.10 |
| **hacking** | Appropriately applying ingenuity12, cleverly solving a programming problem13, and using a computer to gain unauthorized access to data within a system. |
| **hardware**  | The physical components that make up a computer.1 |
| **hexadecimal** | A positional numeral system with a radix or base of 16. It uses sixteen distinct symbols, most often the symbols 0–9 to represent values zero to nine, and A, B, C, D, E, F (or alternatively a, b, c, d, e, f) to represent values of ten to fifteen. Hexadecimal numerals are widely used by computer system designers and programmers.2 |
| **HTML**  | HyperText Mark-up Language; the language used to create web pages.1 |
| **infographics** | A static data visualization used to condense large amounts of information that is more easily understood by the reader (e.g., maps, hierarchies, networks.14  |
| **input (noun)**  | An input is a data value passed from the outside world to a computer.1 |
| **input (verb)**  | To input is to send data from the outside world into a computer system. 1 |
| **Internet**  | A network of interconnected networks.1 |
| **intellectual property** | Something (such as an idea, invention, or process) that comes from a person's mind.15  |
| **IP address**  | Internet Protocol address is a unique numeric value that is assigned to a computer or other device connected to the Internet so that it may be identified and located.1 Example: 127.0.0.1. |
| **iterative** | The act of repeating a process with the aim of approaching a desired goal, target, or result, such as a grammatical rule that can be repeatedly applied.2 |
| **latency** | The amount of time it takes a packet of data to move across a network connection.3 |
| **library/****code library** | A collection of programs, applications, or resources files. The goal of the code library is to provide students with sample applications and supplemental information to help them create or customize their own program or application. |
| **lifelong learning** | All learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective.11 |
| **lists**  | A data structure for storing ordered values.1 Data is of arbitrary/unfixed size. |
| **Local Area Network (LAN)** | A Local Area Network is a computer network limited to a small area, such as an office building, university, or even a residential home.3 |
| **loop** | A loop is a sequence of statements which is specified once but which may be carried out several times in succession.2  |
| **Media Access Control Address (MAC)** | Media Access Control Address is a hardware identification number that uniquely identifies each device on a network. The MAC address is manufactured into every network card and, therefore, cannot be changed. |
| **memory** | Temporary storage used by computing devices. |
| **minimum viable product** | A prototype that embodies an initial set of design goals and facilitates live testing and revision. |
| **model (noun)** | A representation of (some part of) a problem or a system.1 |
| **modeling (verb)** | The act of creating a model.1 |
| **network**  | A computer network is a collection of nodes connected to one another by networking devices and links (cables or by wireless media) and arranged so data may be sent between devices either directly or via other devices.1 |
| **networking devices** | Network devices are units that mediate data in a network.1 Networking hardware such as hubs, switches, routers, and bridges are used to connect nodes on a network, so that they can share data or resources. |
| **node** | Computational devices (e.g., personal computers, printer, smart phones, servers) on a network. |
| **open source software** | Publishers of open source software provide copies of both the source code and the object code when they distribute computer programs to the public. In addition, they establish the terms of use of the software by means of a license.6 |
| **open source license** | A contract that provides users with a sufficient set of privileges to access and modify the open source software's source code**.**6 |
| **operating system**  | A set of programs that manage the functioning of, and other programs’ access to, hardware.1 |
| **operator** | A character that represents a specific action (e.g., x is an arithmetic operator that represents multiplication). In computer programs, one of the most familiar sets of operators, the Boolean Operators, is used to work with true/false values.16  |
| **output (noun)**  | A response from a system.1 Example: a program that adds could have inputs of 2 and 2 with an output of 4. |
| **output (verb)**  | To generate an output.1 |
| **parameter** | A parameter is a special kind of variable used in a subroutine to refer to one of the pieces of data provided as input to the subroutine. These pieces of data are called arguments. An ordered list of parameters is usually included in the definition of a subroutine so each time the subroutine is called, its arguments for that call can be assigned to the corresponding parameters.2 |
| **peripheral device** | A peripheral device is any external device that provides input and output for the computer. For example, a keyboard and mouse are input peripherals, while a monitor and printer are output peripherals. Computer peripherals, or peripheral devices, are sometimes called “I/O devices,” because they provide input and output for the computer. Some peripherals, such as external hard drives, provide both input and output for the computer.3 |
| **pixel**  | The smallest controllable element of a picture/display.1 |
| **pop-up** | Appearing suddenly on a computer screen.15  |
| **process (noun)**  | A process is a running program.1 |
| **process (verb)**  | The act of using data to perform a calculation or other operation.1 |
| **problem domain** | The area of expertise or application that needs to be examined to solve a problem. Simply, looking at only the topics of an individual's interest and excluding everything else.2  |
| **program**  | A set of instructions that the computer executes in order to achieve a particular objective.1 |
| **programming** **(computer programming)** | The craft of analyzing problems and designing, writing, testing, and maintaining programs to solve them.1 |
| **programming language**  | Formal language used to give a computer instructions.1 |
| **proprietary software license** | Proprietary software is licensed under legal right of the copyright holder, with the intent that the licensee is given the right to use the software *only* under certain conditions, and restricted from other uses, such as modification, sharing, studying, redistribution, or reverse engineering.2  |
| **proprietary software** | Software distributed in object code form. The developers or distributors reserve all freedoms and rights.6 |
| **pseudocode**  | An informal [high-level](http://en.wikipedia.org/wiki/High-level_programming_language) description of the operating principle of a [computer program](http://en.wikipedia.org/wiki/Computer_program) or other [algorithm](http://en.wikipedia.org/wiki/Algorithm). |
| **recursive** | A recursive function refers to a procedure or subroutine, implemented in a programming language, whose implementation references itself.2 |
| **repetition**  | The process of repeating a task a set number of times or until a condition is met.1 |
| **resolution**  | A measurement of the number of pixels needed to display an image.1 |
| **router**  | A device that connects networks to one another. |
| **safety** | The awareness of personal, physical, and psychological well-being in a digital society.  |
| **selection**  | Using conditions to control the flow of a program.1 |
| **sequence (noun)**  | An ordered set of instructions.1 |
| **sequence (verb)**  | To arrange a set of instructions in a particular order.1 |
| **server**  | A computer or program dedicated to a particular set of tasks that provides services to other computers or programs on a network.1 |
| **services** | Software and hardware that provide some capability that can be accessed by another program or device remotely or through a defined, discoverable interface. |
| **sexting** | The act of sending, receiving, or forwarding sexually explicit messages, photos, or images via cell phone, computer, or other digital device.17  |
| **simulation** | Imitation of the operation of a real-world process or system over time. |
| **social computing** | An umbrella term for communications and collaboration via the Internet. |
| **software**  | The programs that run on the hardware/computer system.1 |
| **software piracy** | Illegal copying, distribution, or use of software. |
| **spam** | Unsolicited commercial advertisements distributed online. Most spam comes to people via e-mail, but spam can be found in online chat rooms and message boards.18   |
| **subroutine** | A sequence of program instructions that perform a specific task packaged as a unit. This unit can then be used in programs wherever that particular task should be performed. In different programming languages, a subroutine may be called a procedure, function, routine, method, or subprogram.2 |
| **switch**  | More precisely, a network switch. This is a device that connects multiple computers to one another on a single local area network (LAN) and directs packets from machine to machine.1 |
| **synchronous** | In telecommunication – occurring at the same time. In programming – a relationship between events in that one has to complete before the other starts. |
| **table**  | A data type storing organized sets of data under column headings.1 |
| **trace** | To follow it (program) to its origin or destination. |
| **variable** (computer science) | In computer science variables are a symbolic name associated with a value and whose value may be changed.2 They are a way that computers can store, retrieve or change simple data.1 |
| **visualization** | The process of representing data graphically and interacting with these representations in order to gain insight into the data. Any technique for creating images, diagrams, or animations to communicate a message.2 |
| **Wide Area Network (WAN)** | Wide Area Networks span long distances via telephone lines, fiber optic cables, or satellite links. They can also be composed of smaller LANs that are interconnected. 8 |
| **web presence**  | All aspects of one’s personal or corporate online identity (e.g., social media profiles, personal and business websites). |
| **World Wide Web** | A service made of connected hypertext documents linked together across the Internet. |

Glossary References

1  Computing At School, accessed May 2015: [www.computingatschool.org.uk](http://www.computingatschool.org.uk)

2  Wikipedia accessed June 2015: <https://www.wikipedia.org/>

3  IDEA.ed.gov accessed May 2015: <http://idea.ed.gov>

4  TechTerms.com -The Tech Terms Computer Dictionary, accessed May 2015: <http://techterms.com/>

5  ACM/CSTA Model Curriculum for K–12 Computer Science, Revised 2011

6  IT Law Wiki accessed June 2015: <http://itlaw.wikia.com>

7  Digital Strategy Glossary of Key Terms, accessed August 21, 2008: [www.digitalstrategy.govt.nz/Media-Centre/Glossary-of-Key-Terms/](http://www.digitalstrategy.govt.nz/Media-Centre/Glossary-of-Key-Terms/)

8  Paul Gilster, *Digital Literacy,* New York: Wiley and Computer Publishing, 1997, p. 1.

9  Barbara R. Jones-Kavalier and Suzanne L. Flannigan: *Connecting the Digital Dots: Literacy of the 21st-Century*

10  Webopedia, accessed June 2015*:* [*www.webopedia.com*](http://www.webopedia.com)

11 European Commission, Making a European Area of Lifelong Learning a Reality, COM Brussels, Commission of European Communities, 2001, p. 9

12 The Meaning of ‘Hack’, accessed May 2015: <http://www.catb.org/jargon/html/meaning-of-hack.html>

13 Speed Guide.net Glossary, accessed May 2015: <http://www.speedguide.net/glossary.php>

14 Adaptation of definition by Edward Rolf Tufte

15Merriam Webster Dictionary online, accessed May 2015: <http://www.merriam-webster.com/>

16 WhatIs.com, accessed May 2015: <http://whatis.techtarget.com/definition/operator>

17 Mass.Gov, accessed May 2016: <http://www.mass.gov/berkshireda/crime-awareness-and-prevention/sexting/sexting.html>

18 About Tech, accessed May 2015: <http://compnetworking.about.com/od/traceipaddresses/qt/ip-blacklist.htm>