

# Module 4 Glossary

## New terms and their definitions: Course 1 Module 4

**ARPANET:** The earliest version of the Internet that we see today, created by the US government project DARPA in the 1960s

**Children's Online Privacy Protection Act (COPPA):** Regulates the information we show to children under the age of 13

**Clients:** A device that receives data from a server

**DARPA:** A US government project in the 1960s that went on to create the earliest version of the Internet that we see today

**Domain name:** A website name; the part of the URL following www.

**Domain Name System (DNS):** A global and highly distributed network service that resolves strings of letters, such as a website name, into an IP address

**Ethernet cable:** It lets you physically connect to the network through a cable

**Fiber optic cable:** Fiber optic cables contain individual optical fibers which are tiny tubes made of glass about the width of a human hair. Unlike copper, which uses electrical voltages, fiber cables use pulses of light to represent the ones and zeros of the underlying data

**Globalization:** The movement that lets governments, businesses, and organizations communicate and integrate together on an international scale

**Hubs:** Devices that serve as a central location through which data travels through

**Internet:** A worldwide system of interconnected networks

**Internet Corporation for Assigned Names and Numbers (ICANN):** Where website names are registered

**Internet of Things (IoT):** The concept that more and more devices are connected to the internet in a smarter fashion such as smart thermostats that turn off the air conditioner when you leave and turn it on when you come back

**Internet Protocol version 4 (IPv4):** An address that consists of 32 bits separated into four groups

**Internet Protocol version 6 (IPv6):** An address that consist of a 128 bits, four times the amount that IPv4 uses

**Internet service provider (ISP):** A company that provides a consumer an internet connection

**IP address:** A numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication

**MAC address:** A globally unique identifier attached to an individual network interface. It's a 48-bit number normally represented by six groupings of two hexadecimal numbers

**Network:** The interconnection of computers

**Network Address Translation (NAT):** A mitigation tool that lets organizations use one public IP address and many private IP addresses within the network

**Networking:** Managing, building and designing networks

**Networking protocols:** A set of rules for how we transfer data in a network

**Network stack:** A set of hardware or software that provides the infrastructure for a computer

**Router:** A device that knows how to forward data between independent networks

**Server logs:** Text files that contains recorded information about activities performed on a specific web server in a defined period of time

**Servers:** Devices that provide data to other devices that request that data, also known as a client

**Switches:** Devices that help our data travel

**Transmission Control Protocol (TCP):** A protocol that handles reliable delivery of information from one network to another

**Uniform Resource Locator (URL):** A web address similar to a home address

**WannaCry Attack:** A cyber attack that started in Europe and infected hundreds of thousands of computers across the world

**Wireless networking (Wi-Fi):** Networks you connect to through radios and antennas

**World Wide Web (WWW):** The information system that enables documents and other web resources to be accessed over the Internet

## **Terms and their definitions from previous modules**

A

**Abstraction:** To take a relatively complex system and simplify it for our use

**Address bus:** Connects the CPU to the MCC and sends over the location of the data, but not the data itself

**Algorithm:** A series of steps that solves specific problems

**Android:** A mobile operating system based on Linux

**Application:** A computer program designed for a specific use

**ASCII:** The oldest character encoding standard used is ASCII. It represents the English alphabet, digits, and punctuation marks

**ATA:** The most common interface that hard drives use to connect to our system

**ATX (Advanced Technology eXtended):** The most common form factor for motherboards

B

**Backward compatible:** It means older hardware works with newer hardware

**Binary system:** The communication that a computer uses is referred to as binary system, also known as base-2 numeral system

**BIOS (Basic Input Output Services):** The BIOS is software that helps initialize the hardware in our computer and gets our operating system up and running

**BIOS/UEFI:** A low-level software that initializes our computer's hardware to make sure everything is good to go

**Block storage:** It improves faster handling of data because the data isn't stored in one long piece but in blocks, so it can be accessed more quickly

**Boot:** To start up a computer

**Bootloader:** A small program that loads the operating system

**BYOD (Bring Your Own Device):** Refers to the practice of allowing people to use their own personal devices for work

**Byte:** A group of 8 bits

C

**Cache:** The assigned stored location for recently or frequently accessed data; on a mobile app it is where anything that was changed or created with that app is stored

**Character encoding:** Is used to assign our binary values to characters so that we as humans can read them

**Charge cycle:** One full charge and discharge of a battery

**Chrome OS:** A Linux-based operating system designed by Google

**Computer:** A device that stores and processes data by performing calculations

**Chipset:** It decides how components talk to each other on our machine

**Clock cycle:** When you send a voltage to the clock wire

**Clock speed:** The maximum number of clock cycles that it can handle in a set in a certain time period

**Clock wire:** When you send or receive data, it sends a voltage to that clock wire to let the CPU know it can start doing calculations

**Command Line Interface (CLI):** A shell that uses text commands to interact with the operating system

**Computer file:** Data that we store and a file can be anything, a word document, a picture, a song, literally anything

**CPU:** Central processing unit

**CPU sockets:** A CPU socket is a series of pins that connect a CPU's processor to the PC's motherboard

**Cryptography:** The overarching discipline that covers the practice of coding and hiding messages from third parties

D

**Data blocks:** Data that can be broken down into many pieces and written to different parts of the hard disk

**Data sizes:** Metrics that refer to data sizes including bit, byte, kilobyte, kibibyte, and megabyte

**DDR SDRAM (Double Data Rate SDRAM):** A type of RAM that is faster, takes up less power, and has a larger capacity than earlier SDRAM versions

**Decimal form- base 10 system:** In the decimal system, there are 10 possible numbers you can use ranging from zero to nine

**Desktop:** The main screen where we can navigate our files, folders, and applications

**Digital divide:** The growing skills gap between people with and without digital literacy skills

**DIMM:** Dual Inline Memory Module

**Display port:** Port which also outputs audio and video

**Distributions:** Some common Linux distributions are Ubuntu, Debian, and Red Hat

**DRAM:** Dynamic Random Access Memory

**Drivers:** The drivers contain the instructions our CPU needs to understand external devices like keyboards, webcams, printers

**DVI:** DVI cables generally just output video

E

**Electrostatic discharge:** Electrostatic discharge is a sudden and momentary flow of electric current between two electrically charged objects caused by contact, an electrical short or dielectric breakdown

**Etcher.io:** A tool you can use to load an install image onto your USB device and make it bootable

**External Data Bus (EDB):** It's a row of wires that interconnect the parts of our computer

F

**Factory reset:** Resetting a device to the settings it came with from the factory

**File extension:** The appended part of a filename that tells us what type of file it is in certain operating systems

**File handling:** A process of storing data using a program

**File system:** A system used to manage files

**Finder:** The file manager for all Macs

**Folders/Directories:** Used to organize files

**Form factor:** A mathematical way to compensate for irregularities in the shape of an object by using a ratio between its volume and height

H

**Hard drive:** It is a long term memory component that holds all of our data, which can include music, pictures, applications

**Hardware:** External or internal devices and equipment that help you perform major functions

**Hardware resource deficiency:** It refers to the lack of system resources like memory, hard drive space, et cetera

**HDD (Hard disk drive):** Hard disk drives, or HDDs, use a spinning platter and a mechanical arm to read and write information

**HDMI:** A type of cable that outputs both video and audio

**Heatsink:** It is used to dissipate heat from our CPU

**HFS+/APFS:** HFS+ is a journaling system developed by Apple Inc. and APFS is another but more encrypted Apple journaling system

**Hostname:** Used to identify the computer when it needs to talk to other computers

I

**Information technology:** The use of digital technology, like computers and the internet, to store and process data into useful information

**Input/Output device:** A device that performs input and output, including monitors, keyboards, mice, hard disk drives, speakers, bluetooth headsets, webcams, and network adapters

**Install image:** A downloadable operating system image used to install an operating system on a device

**Instruction set:** A list of instructions that our CPU is able to run

**I/O management:** Anything that can give us input or that we can use for output of data

**iOS:** A mobile operating system developed by Apple Inc.

**ITX (Information Technology eXtended):** A form factor for motherboards that is much smaller than ATX boards

K

**Kernel:** The main core of an operating system that creates processes, efficiently schedules them, and manages how processes are terminated

L

**Land Grid Array (LGA):** It is a type of CPU socket that stick out of the motherboard

**Lightning adaptor:** One of the standard power, data and display connector types used in mobile devices

**Linux OS:** Linux is one of the largest an open source operating system used heavily in business infrastructure and in the consumer space

**Logic gates:** Allow transistors to do more complex tasks, like decide where to send electrical signals depending on logical conditions

**Logs:** Files that record system events on our computer

M

**Mac OS:** Apple's operating system

**Mb/s:** megabit per second, which is a unit of data transfer rate

**Memory controller chip (MCC):** A bridge between the CPU and the RAM

**Memory management:** One of the functions that a kernel performs; it optimizes memory usage and make sure our applications have enough memory to run

**Metadata:** Tells us everything we need to know about a file, including who created it, when it was last modified, who has access to it, and what type of file it is

**Micro display port:** One of the standard power, data and display connector types used in mobile devices

**Microsoft Terminal Services Client:** A client program used to create RDP connections to remote computers

**Micro HDMI:** One of the standard power, data and display connector types used in mobile devices

**Micro USB:** One of the standard power, data and display connector types used in mobile devices

**Mini HDMI:** One of the standard power, data and display connector types used in mobile devices

**Mini USB:** One of the standard power, data and display connector types used in mobile devices

**Motherboard:** The body or circulatory system of the computer that connects all the pieces together

N

**Northbridge:** interconnects stuff like RAM and video cards

O

**Open SSH:** The most popular program to use SSH within Linux

**Open source:** This means the developers will let other developers share, modify, and distribute their software for free

**Operating system:** The whole package that manages our computers resources and lets us interact with it

**Overclocking:** it increases the rate of your CPU clock cycles in order to perform more tasks

P

**PC:** Personal computer, which technically means a computer that one person uses

**PCI Express:** Peripheral Component Interconnect Express

**PDA (Personal Digital Assistant):** Allows computing to go mobile

**Peripherals:** the external devices which we connect to our computer that add functionality, like: a mouse, a keyboard, and a monitor

**Pin Grid Array (PGA):** CPU socket where the pins are located on the processor itself

**Plink (PuTTY Link):** A tool built into the command line after PuTTY is installed that is used to make remote SSH connections

**Ports:** Connection points that we can connect devices to that extend the functionality of our computer

**POST (Power On Self Test):** It figures out what hardware is on the computer

**Powershell:** A shell (program that interprets text commands) for Windows

**Power supply:** Converts electricity from our wall outlet onto a format that our computer can use

**Power user:** Above average computer users

**Process management:** The capacity to manage the many programs in a system - when to run them, the order they run in, how many resources they take up, how long they run, etc.

**Programs:** Basic instructions that tell the computer what to do

**Punch cards:** A sequence of cards with holes in them to automatically perform calculations instead of manually entering them by hand

Q

**Qwiklabs:** An online platform which provides training in cloud services

R

**RAM:** Random Access Memory

**Registers:** An accessible location for storing the data that our CPU works with

**Reimaging:** The process of reimaging involves wiping and reinstalling an operating system using a disk image which is a copy of an operating system

**Remote connection:** The ability to connect an authorized person to a computer or network remotely; allows us to manage multiple machines from anywhere in the world

**Remote Desktop Protocol (RDP):** A secure network communication protocol developed by Microsoft that allows a user to connect to another device remotely

**Return merchandise authorization (RMA):** The process of receiving returned merchandise and authorizing a refund

**RGB model:** RGB or red, green, and blue model is the basic model of representing colors

**ROM chip (Read Only Memory):** A read-only memory chip where the BIOS is stored

**RPM:** Revolutions per minute

S

**Safe operating temperature:** The temperature range in which rechargeable batteries must be kept in order to avoid damage

**SATA:** The most popular serial ATA drive, which uses one cable for data transfers

**Scalability:** The measure of a system's ability to increase or decrease in performance and cost in response to varying loads in system processing demands

**SDRAM:** It stands for Synchronous DRAM, this type of RAM is synchronized to our systems' clock speed allowing quicker processing of data

**Shell:** A program that interprets text commands and sends them to the OS to execute

**SOC (System On a Chip):** Packs the CPU, Ram, and sometimes even the storage onto a single chip

**Southbridge:** It maintains our IO or input/output controllers, like hard drives and USB devices that input and output data

**SSD:** Solid State Drive

**SSH (Secure shell):** A protocol implemented by other programs to securely access one computer from another.

**SSH authentication key:** A secure authentication method for accessing a computer from other device

**SSH client:** A program you must have installed on your device in order to establish an SSH connection with another device

**SSH server:** Software installed on a machine that allows for that device to accept an SSH connection

**Standardization:** A systematic way of naming hosts

**Standoffs:** Used to raise and attach your motherboard to the case

**Swap space:** The allocated space where the virtual memory is stored on the hard drive when the amount of physical memory space is used up or full

**System:** A group of hardware components and software components that work together to run the programs or processes in the computer

**System settings:** Settings like display resolution, user accounts, network, devices, etc.

T

**Task bar:** It gives us quick options and shows us information like network connectivity, the date, system notifications, sound etc

**Terminal:** A text based interface to the computer

**Thermal paste:** A substance used to better connect our CPU and heat sink, so the heat transfers from to the other better

**Time slice:** A very short interval of time that gets allocated to a process for CPU execution

**Type-C connector:** A type of USB connector meant to replace many peripheral connections

U

**Ubuntu:** The most popular Linux consumer distribution

**UEFI:** United Extensible Firmware Interface

**USB (Universal Serial Bus):** A connection standard for connecting peripherals to devices such as computers

**USB-C adapter:** One of the standard power, data and display connector types used in mobile devices

**User name:** A unique identifier for a user account

**User space:** The aspect of an operating system that humans interact with directly like programs, such as text editors, music players, system settings, user interfaces, etc.

**UTF-8:** The most prevalent encoding standard used today

V

**Virtual Box:** An application you can use to install Linux and have it completely isolated from your machine

**Virtual machine (VM):** An application that uses physical resources like memory, CPU and storage, but they offer the added benefit of running multiple operating systems at once

**Virtual memory:** A combination of hard drive space and RAM that acts like memory which our processes can use

**VPN (Virtual private network):** A secure method of connecting a device to a private network over the internet