A:

Analog – Used to describe signals and waves. Describes the waves as continuous with varying levels.

Application – Also referred to as programs, applications are the softwares used to perform various tasks. For example, Microsoft Paint is used to draw and edit images.

Application Programming Interface (API) – Used to provide a method of communication between programs. These can be utilized for programs running on the same machine, or the internet can be used to allow the programs to communicate from separate machines, possibly on different networks.

Arrays – A collection of a certain type of data elements stored in RAM that can be accessed via its index. The index normally starts at 0. An example of an array of ints: [10, 1343, 452, 80].

ASCII – Pronounced “Ask-ee”, refers to an encoding system for converting different characters to numbers for storage in computers. These stored numbers are stored in Binary

B:

Bandwidth – A range of frequencies used in a band for data communication.

Binary - Base 2 number system, using only the digits 0 and 1.

Bit - The smallest unit of information a computer can store. Either 1 or 0.

Broadband – Communication using wide bandwidth, allowing for sending and receiving many signals simultaneously.

Bug – Improper behavior of a program due to an error in the code or the equipment used to run it.

Byte – A group of eight bits. Computers mostly store information in bytes.

C:

Cache – A form of storage that can be accessed more quickly than the usual method. For instance, a video game will cache important data like the player’s inventory to allow the player to quickly view its contents. This Cache exists in the RAM, which is faster than reading from a Hard Drive.

Callback Function – A piece of executable code used as an argument for another function, with the expectation of this other function executing, or calling, this function. If A is our function and

B is our callback function, B is passed to A and, at some point during it's execution, A will "call back" to function B.

Capacitance – the ability of a component or circuit to collect and store electric charge.

Carrier Wave – A wave used as the foundation for a signal that contains data. Add data to the carrier wave with modulation, and separate the carrier wave from the data with demodulation

Central Processing Unit (CPU) – Also referred to as the processor, the brain of the computer. Handles logical tasks best but can also perform mathematical computations with ease.

Chip – A major component of many computers, chips are small versions of *very* complex circuitry that has been condensed to a very small scale.

Client – A user of a network application using a server/client architecture. See "Server/Client Architecture" for more details.

Console – Also referred to as a terminal, takes in text commands to perform operations. Some operating systems are terminal based.

Cookie – A form of data storage used by webservers. They can store information about the user, their computer, or their activity.

Crash – An unexpected failure of a device or it's software due to a malfunction in the hardware or software. Data will likely be lost, and may even cause permanent damage to the device.

Current – The flow of electric charge. Measured in Amps(A). In a pipe analogy this would be the amount of water flowing.

Cursor – An indicator of where the user is currently working. On a desktop, we see a mouse cursor. In a terminal or console, the cursor shows where the user is currently typing.

D:

Database – An organized method of storing information. Different software allows for different methods of accessing this data. Commonly abbreviated as DB.

Debug – The process of finding and removing bugs in a program.

Demodulation – The process of separating a carrier wave and it's data.

Desktop – In operating systems, a desktop is the highest level of interaction in the user interface. Usually contains icons that can be used to access other programs and files.

In computer hardware, a desktop is the "tower" of a computer that is stationary.

Digital – Used to describe signals and waves. Describes the waves as either on or off high or low.

Directory – Location on a computer that stores files. Directories can have subdirectories (folders) that are also referred to as directories.

Disk – Stores data. Can be found in a hard drive.

Domain – A name associated with an IP address. For instance, the address 142.250.68.164 is associated with the domain www.google.com, and can be accessed by typing the domain. Domains are also seen at the end of email addresses.

Dynamic Host Configuration Protocol (DHCP) –leases local IP addresses to devices when connecting.

E:

Encryption – The process of protecting data by programmatically scrambling the bits that represent the information in such a way that it can be unscrambled.

Ethernet – Wired network, usually connected to the internet.

F:

File Transfer Protocol (FTP) - Protocol for transferring files. See Protocols

Firewall – A security program that only allows certain connections to be made.

For Loop - In programming, loops "for" a specific amount of iterations

Frequency Band – A group of frequencies used for telecommunications.

G:

General Purpose Input/Output (GPIO) – is a designation given to pins. Serves no specific connected purpose until a developer codes the pin to read some input or write some output. Typically of a digital input/output variety.

Gigabyte (GB) – 1,024 Megabytes, 1,048,576 Kilobytes, 1,073,741,824 Bytes. Also referred to as a "Gig"

Glitch – Source of a computer's problem.

Graphical User Interface (GUI) – Makes navigation of a computer of software easier by giving the user a visual representation of available commands.

Graphics Processing Unit (GPU) – Similar to a processor, but specifically designed for mathematical computations, usually for rendering graphics.

H:

Hacking – The process of gaining access to a system without the proper authorizations. Can be done for good reasons. See “Penetration Testing”

Hard Drive – A computer component that stores information permanently or until deleted.

Hardware – The physical components of a computer or system. For example, the processor (CPU), the Hard Drive, and Keyboard are pieces of hardware.

HTML – Short for Hypertext Markup Language, this is used to mark sections of text for formatting, commonly for websites.

HTTP – Hypertext Transfer Protocol, used to send and receive HTML Documents.

HTTP REST API – Web based API used to communicate with online services. Commands such as “GET”, “POST”, and “DELETE” specify what is to be done with the data, and a body is sent with the request containing additional information, specified by the API.

HTTPS – Same as HTTP, but far more secure.

I:

Internet – Interconnected Networks\Servers. Smaller networks connecting to make up the larger internet. The smaller networks belong to businesses as well as individuals. All of which are just there to serve the requestor with some information whether a file or routing info.

Internet of Things (IoT) – Simple devices that can be used to send data over the internet.

Internet Protocol (IP) Address – Like a street address, represents the location of a device connected to the internet.

J:

j

K:

Kilobyte (KB) – 1024 Bytes.

L:

Linux – An open source Unix based operating system

Local Area Network (LAN) – The network that the device is connected to. This network connects devices allowing them to use a local address to communicate.

Local IP Address – A separate IP address used only on your local network.

LoRa – Short for Long Range. Communication protocol for long range data transfers.

M:

Macro – A script written to perform a repetitive task automatically.

Megabyte (MB) – 1,024 Kilobytes, 1,048,576 Bytes

Microcomputer – A small computer that can be used for general purpose processing. Generally chosen for projects when either several tasks or on more complicated tasks needs to be performed.

Microcontroller – A small device used for controlling sensors or other devices. Generally chosen for projects when one simple task needs to be performed.

Modem – A device that modulates and demodulates signals to transfer data between devices.

Modulate – The process of putting data onto a carrier wave.

Monitor – Computer peripheral used to display an image.

N:

Network – A system that connects multiple devices. An example of this is the internet, in which millions of devices are connected.

NoSQL (Nonrelational) – A database whose entries don't necessarily have to match in terms of data stored.

O:

Open source – Describes hardware and software in which their inner workings are available to everyone. This allows more people to develop these projects, and improvements can be made more quickly.

Operating System – Program that tells the computer how to operate. This includes how to store files, how to display images, how to read and write to USB ports, and much more. Two of the most common operating systems are Microsoft Windows and Apple Macintosh.

P:

Parallel (as in communication) – At the same time.

Partition Key (DynamoDB) – A value that tells the server to store a collection of data together in one server to make for faster queries. A good example would be for the name of an account.

Penetration Testing – The process of finding vulnerabilities in system or network for the purpose of making the software safer.

Peripheral – In computing, a peripheral is an external component of the computer. For example, monitors, printers, mice, and keyboards are all computer peripherals.

Pins – A connection on a computer chip used to send and receive signals. Also, the metal connections on the edge of the board were included in the Pete kit.

Printed Circuit Board (PCB) – A board that has a circuit etched into it. The Raspberry Pi is a PCB with a microprocessor, RAM, USB ports, and other devices as part of the circuit.

Processor – The brain of the computer. Handles logical tasks best but can also perform mathematical computations with ease. Commonly abbreviated (CPU)

Programming Language – A set of commands used to communicate with the computer and have it perform tasks. Some examples include C, C++, Java, Python, and Javascript

Protocol - In computing, refers to an agreed upon set of rules for performing a task. For instance, the Transmission Control Protocol (TCP) is a set of rules for sending and receiving packets of information over the internet.

Public IP Address – IP Address that is available to the public internet. Anyone can see this address and it is how people can gain access to your network.

Q:

Query – A request for information.

R:

Random Access Memory (RAM) – Temporary form of data storage that can be accessed significantly faster than long term solutions.

Read-Only Memory (ROM) – Memory that cannot be altered in any way, only read from.

Resistance – The amount of force preventing current to flow through. Measured in Ohms(Ω). In a pipe analogy this would be the value on the spicket preventing water from flowing.

S:

Secure Shell (SSH) - Method of accessing a remote terminal. Instead of seeing a desktop, everything action is performed by typing in specific commands.

Serial (as in communication) – In order.

Server – Can refer to hardware or software. When referring to hardware, a server is a machine specifically designed for sharing data with clients. When referring to the software, a server is the application that serves data to the clients.

Server/Client Architecture – A network architecture in which one server can server many clients (users). The server resides in a centralized location, and shares data with all clients simultaneously.

Software – Computer Applications or Programs.

T:

Terabyte (TB) – 1,024 Gigabytes

U:

Uniform Resource Locator (URL) – Protocol for identifying the location of resources on the internet. Also referred to as a web address

Universal Serial Bus (USB) – A standardized connection interface that allows devices to be powered and transmit or receive data. Several variations of this connection exist, such as the micro-USB or USB-C connections commonly seen in phones.

Unix – A very powerful operating system that is used as the basis for other operating systems and applications.

V:

Voltage – The force acting on the current. This would be like increasing the speed of a water pump increasing the water pressure.

W:

Wide Area Network (WAN) – Consists of local area networks. Combining these networks allows for communication between the networks.

Wi-Fi – Standard data communication protocol for connecting devices to the internet. Short range.

X:

x

Y:

y

Z:

z