

Computer keyboard essay



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Computer keyboard In computing, a keyboard is a typewriter-style device, which uses an arrangement of buttons or keys, to act as mechanical levers or electronic switches. Following the decline of punch cards and paper tape, interaction via teleprompter-style keyboards became the main Input device for computers. A keyboard typically has characters engraved or printed on the keys and each press of a key typically corresponds to a single written symbol. However, to produce some symbols requires pressing and holding several keys simultaneously or in sequence.

While most keyboard keys reduce letters, numbers or signs (characters), other keys or simultaneous key presses can produce actions or execute computer commands. Despite the development of alternative input devices, such as the mouse, touchstones, pen devices, character recognition and voice recognition, the keyboard remains the most commonly used and most versatile device used for direct (human) Input Into computers. [collation needed] In normal usage, the keyboard Is used to type text and numbers into a word processor, text editor or other programs. In a modern computer, the interpretation of key presses is generally left to the software.

A computer aboard distinguishes each physical key from every other and reports all key presses to the controlling software. Keyboards are also used for computer gaming, either with regular keyboards or by using keyboards with special gaming features, which can expedite frequently used keystroke combinations. A keyboard is also used to give commands to the operating system of a computer, such as Windows' Control- Alt-Delete combination, which brings up a task window or shuts down the machine. A command-line

Interface is a type of user interface operated entirely through a keyboard, or another device performing the function of one.

History While typewriters are the definitive ancestor of all key-based text entry devices, the computer keyboard as a device for electromechanical data entry and communication derives largely from the utility of two devices: teleprompters (or teletypes) and keypunches. It was through such devices that modern computer keyboards inherited their layouts. As early as the 1850s, teleprompter-like devices were used to simultaneously type and transmit stock market text data from the keyboard across telegraph lines to stock ticker machines to be immediately copied and displayed onto ticker tape.

The teleprompter, in its more contemporary form, was developed from 1903 to 1910 by American mechanical engineer Charles Korus and his son Howard, with early contributions by electrical engineer Frank Pearce. Earlier models were developed separately by individuals such as Royal Earl House and Frederick G. Creed. Earlier, Herman Hollerith developed the first keypunch devices, which soon evolved to include keys for text and number entry akin to normal typewriters by the 1890s.

The keyboard on the teleprompter played a strong role in point-to-point and point-to-keypunch device played a strong role in data entry and storage for just as long. The development of the earliest computers incorporated electric typewriter keyboards: the development of the MENACE computer incorporated a keypunch device as both the input and paper-based output device, while the BIANCA computer also made use of an electromechanical

controlled typewriter for both data entry onto magnetic tape (instead of paper) and data output.

From the sass until the late sass, typewriters were the main means of data entry and output for computing, becoming integrated into what were known as computer terminals. Because of the limitations of terminals eased upon printed text in comparison to the growth in data storage, processing and transmission, a general move toward video-based computer terminals was affected by the sass, starting with the Adaptation 3300 in 1967.

The keyboard remained the primary, most integrated computer peripheral well into the era of personal computing until the introduction of the mouse as a consumer device in 1984. By this time, text-only user interfaces with sparse graphics gave way to comparatively graphics-rich icons on screen. However, keyboards remain central to human- computer interaction to the present, even as mobile personal computing devices such as smartness and tablets adapt the keyboard as an optional virtual, touchstones-based means of data entry.

Keyboard types One factor determining the size of a keyboard is the presence of duplicate keys, such as a separate numeric keyboard, for convenience. Further the keyboard size depends on the extent to which a system is used where a single action is produced by a combination of subsequent or simultaneous keystrokes (with modifier keys, see below), or multiple pressing of a single key. A keyboard with few keys is called a keypad. See also text entry interface. Another factor determining the size of a aboard is the size and spacing of the keys.

Reduction is limited by the practical consideration that the keys must be large enough to be easily pressed by fingers. Alternatively a tool is used for pressing small keys. > Standard Standard “ full-travel” alphanumeric keyboards have keys that are on three-quarter inch centers (0. 750 inches, 19. 05 mm), and have a key travel of at least 0. 150 inches (3. 81 mm).

Desktop computer keyboards, such as the 101-key US traditional keyboards or the 104-key Windows keyboards, include alphabetic characters, punctuation symbols, numbers and a variety of function keys.

The internationally common 102/105 key keyboards have a smaller left shift key and an additional key with some more symbols between that and the letter to its right (usually Z or Y). Also the enter key is usually shaped differently. [vague][1] Computer keyboards are similar to electric-typewriter keyboards but contain additional keys. > Laptop-size Keyboards on laptops and notebook computers usually have a shorter travel distance for the keystroke and a reduced set of keys.

They may not have a numerical keypad, and the function keys may be placed in locations that differ from their placement on standard, full-sized keyboard. > Handheld Handheld ergonomic keyboards are designed to be held like a game controller, and handheld keyboards hold all the alphanumeric keys and symbols that a standard keyboard would have, yet only be accessed by pressing two sets of keys at once; one acting as a function key similar too ‘ Shift’ key that would allow for capital letters on a standard keyboard[2].

Handheld keyboards allow the user the ability to move around a room or to lean back on a chair while also being able to type in front or away from the computer[3]. Some variations of handheld ergonomic keyboards also include a recall mouse that allow mouse movement and typing included in one handheld device. > Thumb-sized Smaller external keyboards have been introduced for devices without a built-in keyboard, such as Pads, and smartness.

Small keyboards are also useful where there is a limited workspace. A chorded keyboard allows users to press several keys simultaneously. For example, the KOOKS keyboard has been designed for small wireless devices. Other two-handed alternatives more akin to a game controller, such as the Alphatic, are also used to input data and text. A thumb keyboard (adumbrate) is used in some personal digital assistants such as the Palm Tree and BlackBerry and some Ultra-Mobile PC's such as the QUO.

Numeric keyboards contain only numbers, mathematical symbols for addition, subtraction, multiplication, and division, a decimal point, and several function keys. They are often used to facilitate data entry with smaller keyboards that do not have a numeric keypad, commonly those of laptop computers. These keys are collectively known as a numeric pad, numeric keys, or a numeric keypad, and it can consist of the following types of keys: - arithmetic operators such as +, / numeric digits 0-9 - cursor arrow keys - navigation keys such as Home, End, Page Up, Page Down, etc. Num Lock button, used to enable or disable the numeric pad - enter key Non-standard layout and special-use types > Chorded While other keyboards generally associate one action with each key, chorded keyboards associate actions

with combinations of key presses. Since there are many combinations available, chorded keyboards can effectively produce more actions on a board with fewer keys. Court reporters' stenotype machines use chorded keyboards to enable them to enter text much faster by typing a syllable with each stroke instead of one letter at a time.

The fastest typists (as of 2007) use a stenographer, a kind of chorded keyboard used by most court reporters and closed-caption reporters. Some chorded keyboards are also made for use in situations where fewer keys are preferable, such as on devices that can be used with only one hand, and on small mobile devices that don't have room for larger keyboards. Chorded keyboards are less desirable in many cases because it usually takes practice and memorization of the combinations to become proficient. Software keyboards or on-screen keyboards often take the form of computer software that display an image of a keyboard on the screen. Another input device such as a mouse or a touchstones can be used to operate each virtual key to enter phones, due to the additional cost and space requirements of other types of hardware keyboards. Microsoft Windows, Mac OS X, and some varieties of Linux include on-screen keyboards that can be controlled with the mouse. In software keyboards, the mouse has to be maneuvered onto the on-screen letters given by the software.

On the click of a letter, the software writes the respective letter on the respective spot. > Projection (as by laser) Projection keyboards project an image of keys, usually with a laser, onto a flat surface. The device then uses a camera or infrared sensor to "watch" where the user's fingers move, and will count a key as being pressed when it "sees" the user's finger touch the

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projected image. Projection keyboards can simulate a full size keyboard from a very small projector. Because the “ keys” are simply projected images, they cannot be felt when pressed.

Users of projected keyboards often experience increased discomfort in their fingertips because of the lack of “ give” when typing. A flat, non-reflective reface is also required for the keys to be projected. Most projection keyboards are made for use with Pads and smartness due to their small form factor. > Optical keyboard technology Also known as photo-optical keyboard, light responsive keyboard, photo-electric keyboard and optical key actuation detection technology. An optical keyboard technology utilizes light emitting devices and photo sensors to optically detect actuated keys.

Most commonly the emitters and sensors are located in the perimeter, mounted on a small PC. The light is directed from side to side of the keyboard interior and it can only be blocked by the actuated keys. Most optical keyboards require at least 2 beams (most commonly vertical beam and horizontal beam) to determine the actuated key. Some optical keyboards use a special key structure that blocks the light in a certain pattern, allowing only one beam per row of keys (most commonly horizontal beam).

Keyboard layout keyboard layout is any specific mechanical, visual, or functional arrangement of the keys, legends, or key-meaning associations (respectively) of a computer, typewriter, or other typographic keyboard.

Mechanical layout The placements and keys of a keyboard. For an interactive, side-by-side comparison of various keyboard layouts, go to

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Microsoft' " Windows Keyboard Layouts" page. Visual layout The arrangement of the legends (labels, markings, engravings) that appear on the keys of a keyboard.

Functional layout The arrangement of the key-meaning associations, determined in software, of all the keys of a keyboard. Most computer keyboards are designed to send codes to the operating system, rather than directly sending characters. From there, the series of codes is converted into a character stream by keyboard layout software. This allows a physical keyboard to be dynamically mapped to any number of layouts without switching hardware components - merely by changing the software that interprets the keystrokes.

It is usually possible for an advanced user to change keyboard operation, and third-party software is available to modify or extend History of keyboard layout Keyboard of a Letter-printing Telegraph Set built by Siemens and Hales in Saint Petersburg, Russia, ca. 1900 Keyboard layouts have evolved over time. The earliest mechanical keyboards were used in musical instruments to play particular notes. With the advent of printing telegraph, a keyboard was needed to select characters. Some of the earliest printing telegraph machines used a layout similar to a piano keyboard. 1][2] In countries using the Latin script, the center, alphanumeric portion of the modern keyboard is most often based on the QWERTY design by Christopher Shoeless, who laid out the keys in such a way that common two-letter combinations were placed on opposite sides of the keyboard so that his mechanical keyboard would not Jam, and laid out the keys in rows offset

horizontally from each other by here-eighths, three-sixteenths, and three-eighths inches to provide room for the levers.

Although it has been demonstrated that the QWERTY layout is not the most efficient layout for typing[citation needed], it has become such a standard that people will not change to a more efficient alphanumeric layout. Shoeless chose the size of the keys to be on three-quarter inch (0.75-inch) centers (about 19 mm, versus musical piano keys which are 23.5 mm or about 0.93 inches wide). Actually, 0.75 inches has turned out to be optimum for fast key entry by the average size hand, and boards with this key size are called “full-sized keyboards”.

The standard 101/102-key PC keyboard layout was invented by Mark Tenders of Key Tropic Corporation in 1982. [citation needed] IBM adopted the layout on its PC AT in 1984 (after previously using an 84-key keyboard which did not have separate cursor and numeric key pads). Most modern keyboards basically conform to the layout specifications contained in parts 1, 2, and 5 of the international standard series ISO/ICE 9995. These specifications were first defined by the user group at FAUNA in 1984 working under the direction of Lain Columbia.] Based on this work, a well known ergonomic expert wrote a report[4] which was adopted at the ISO Berlin meeting in 1985 and became the reference for keyboard layouts. The 104/105-key PC keyboard was born when two 0 Win keys and a 0 Menu key were added on the bottom row (originally for the Microsoft Windows operating system). Newer keyboards may incorporate even further additions, such as Internet access (World Wide Web navigation) keys and multimedia (access to media players) buttons. Layout Alphabetic There are a number of <https://assignbuster.com/computer-keyboard-essay/>

different arrangements of alphabetic, numeric, and punctuation symbols on keys.

These different keyboard layouts arise mainly because different people need easy access to different symbols, either because they are inputting text in different languages, or because they need a specialized layout for mathematics, accounting, computer programming, or other purposes. The United States keyboard layout is used as default in the currently most popular operating systems: Windows,[4] Mac OS X[5] and Linux. [6][7] The common QWERTY-based were compromised to allow for the mechanical limitations of the typewriter. As the letter-keys were attached to levers that needed to move freely, inventor Christopher

Sholes developed the QWERTY layout to reduce the likelihood of jamming. With the advent of computers, lever jams are no longer an issue, but nevertheless, QWERTY layouts were adopted for electronic keyboards because they were widely used. Alternative layouts such as the Dvorak Simplified Keyboard are not in widespread use. The QWERTY layout is widely used in Germany and much of Central Europe. The main difference between it and QWERTY is that Y and Z are swapped, and most special characters such as brackets are replaced by diacritical characters. Another situation takes place with “national” layouts.

Keyboards designed for typing in Spanish have some characters shifted, to release the space for ñ; similarly, those for French and other European languages may have a special key for the character ç. The AZERTY layout is used in France, Belgium and some neighboring countries. It differs from

the QWERTY layout in that the A and Q are swapped, the Z and W are swapped, and the M is moved from the right of N to the right of L (where colon/ semicolon is on a US keyboard). The digits 0 to 9 are on the same keys, but to be typed the shift key must be pressed.

The unstilted positions are used for accented characters. Keyboards in many parts of Asia may have special keys to switch between the Latin character set and a completely different typing system. Japanese layout keyboards can be switched between various Japanese input methods and the Latin alphabet by signaling the operating system's input interpreter of the change, and some operating systems (namely the Windows family) interpret the character "" as " Y" for display purposes without changing the botched which has led some keyboard makers to mark "" as " Y" or both.

In the Arab world, keyboards can often be switched between Arabic and Latin characters. In bilingual regions of Canada and in the French-speaking province of Quebec, keyboards can often be switched between an English and a French-language keyboard; while both keyboards share the same QWERTY alphabetic layout, the French-language keyboard enables the user to type accented vowels such as "" or " Γ" with a single keystroke.

Using keyboards for other languages leads to a conflict: the image on the key does not correspond to the character. In such cases, each new language may require an additional label on the keys, because the standard keyboard layouts do not share even similar characters of different languages (see the example in the figure above).