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Julia exist.[31] Its lack of visibility in most keyboard layouts typically contribute to its infrequent employ, though most modern input facility allow to reach it easily.[31] "HeqUicKBrOwNfOxJUmPsOvErThEIAzYdOG" Study caps are an arbitrary mixing of the cases with no semantic or syntactic significance to the use of the capitals. Sometimes only vowels are upper case, at other times upper and lower case are alternated, but often it is simply random. The name comes from the sarcasm or ironic implication that it was used in an attempt by the writer to convey their own coolness (staidliness).[citation needed] It is also used to mock the violation of standard English case conventions by marketers in the naming of computer software packages, even when there is no technical requirement to do so – e.g., Sun Microsystems' naming of a windowing system NeWS. Illustrative naming of the style is, naturally, random: sTUDLy cAPs, sTUdLy cAPs, etc. In the character sets developed for computing, each upper- and lower-case letter is encoded as a separate character. In order to enable case folding and case conversion, the software needs to link together the two characters representing the case variants of a letter. (Some old character-encoding systems, such as the Baudot code, are restricted to one set of letters, usually represented by the upper-case variants.) Case-insensitive operations can be said to fold case, from the idea of folding the character code table so that upper- and lower-case letters coincide. The conversion of letter case in a string is common practice in computer applications, for instance to make case-insensitive comparisons. Many high-level programming languages provide simple methods for case conversion, at least for the ASCII character set. Whether or not the case variants are treated as equivalent to each other varies depending on the computer system and context. For example, user passwords are generally case sensitive in order to allow more diversity and make them more difficult to break. In contrast, case is often ignored in keyword searches in order to ignore insignificant variations in keyword capitalisation both in queries and queried material. Unicode defines case folding through the three case-mapping properties of each character: upper case, lower case, and title case (in this context, "title case" relates to ligatures and digraphs encoded as mixed-case single characters, in which the first component is in upper case and the second component in lower case).[33] These properties relate all characters in scripts with differing cases to the other case variants of the character. As briefly discussed in Unicode Technical Note #26,[34] "In terms of implementation issues, any attempt at a unification of Latin, Greek, and Cyrillic would wreak havoc [and] make casing operations an unholy mess, in effect making all casing operations context sensitive [...]. In other words, while the shapes of letters like A, B, E, H, K, M, O, P, T, X, Y and so on are shared between the Latin, Greek, and Cyrillic alphabets (and small differences in their canonical forms may be considered to be of a merely typographical nature), it would still be problematic for a multilingual character set or a font to provide only a single code point for, say, uppercase letter B, as this would make it quite difficult for a wordprocessor to change that single uppercase letter to one of the three different choices for the lower-case letter, the Latin b (U+0062), Greek β (U+03B2) or Cyrillic б (U+0432). Therefore, the corresponding Latin, Greek and Cyrillic upper-case letters (U+0042, U+0392 and U+0412, respectively) are also encoded as separate characters, despite their appearance being identical. Without letter case, a "unified European alphabet" – such as ABCFGDΔEЄƆFǦGHIIJ...Z, with an appropriate subset for each language – is feasible; but considering letter case, it becomes very clear that these alphabets are rather distinct sets of symbols. Most modern word processors provide automated case conversion with a simple click or keystroke. For example, in Microsoft Office Word, there is a dialog box for toggling the selected text through UPPERCASE, then lowercase, then Title Case (actually start caps; exception words must be lowercased individually). The keystroke ⇧ Shift+F3 does the same. In some forms of BASIC there are two methods for case conversion: Upper\$ = UCASE\$(a) Lower\$ = LCASE\$(a) C and C++, as well as any C-like language that conforms to its standard library, provide these functions in the file ctype.h: char upperA = toupper('a'); char lowerA = tolower('A'); Case conversion is different with different character sets. In ASCII or EBCDIC, case can be converted in the following way, in C: int toupper(int c) { return islower(c) ? c - 'a' + 'A' : c; } int tolower(int c) { return isupper(c) ? c - 'A' + 'a' : c; } This only works because the letters of upper and lower cases are spaced out equally. In ASCII they are consecutive, whereas with EBCDIC they are not; nonetheless the upper-case letters are arranged in the same pattern and with the same gaps as are the lower-case letters, so the technique still works. Some computer programming languages offer facilities for converting text to a form in which all words are capitalised. Visual Basic calls this "proper case", Python calls it "title case". This differs from usual title casing conventions, such as the English convention in which minor words are not capitalised. See also: Initial Latin minuscule inscription on the Arch of Titus (82 CE)Papyrus fragment with old Roman cursive script from the reign of Claudius (41–54 CE)Example of Greek minuscule text Codex Eberharicus (c. 1100 CE) Combined case with capital letters above small lettersLate 19th-century mixed casesDemonstrating the use of a composing stick in front of divided upper and lower type cases at the International Printing Museum in Carson, California, United States, North America Originally alphabets were written entirely in majuscule letters, spaced between well-defined upper and lower bounds. When written quickly with a pen, these tended to turn into rounder and much simpler forms. It is from these that the first minuscule hands developed, the half-uncials and cursive minuscule, which no longer stayed bound between a pair of lines.[35] These in turn formed the foundations for the Carolingian minuscule script, developed by Alcuin for use in the court of Charlemagne, which quickly spread across Europe. The advantage of the minuscule over majuscule was improved, faster readability.[citation needed] In Latin, papyri from Herculaneum dating before 79 CE (when it was destroyed) have been found that have been written in old Roman cursive, where the early forms of minuscule letters "d", "h" and "r", for example, can already be recognised. According to papyrologist Knut Kleve, "The theory, then, that the lower-case letters have been developed from the fifth century uncials and the ninth century Carolingian minuscules seems to be wrong.[36] Both majuscule and minuscule letters existed, but the difference between the two variants was initially stylistic rather than orthographic and the writing system was still basically unicameral: a given handwritten document could use either one style or the other but these were not mixed. European languages, except for Ancient Greek and Latin, did not make the case distinction before about 1300.[citation needed] The timeline of writing in Western Europe can be divided into four eras:[citation needed] Greek majuscule (9th–3rd century BCE) in contrast to the Greek uncial script (3rd century BCE – 12th century CE) and the later Greek minuscule Roman majuscule (7th century BCE – 4th century CE) in contrast to the Roman uncial (4th–8th century CE), Roman half uncial, and minuscule Carolingian majuscule (4th–8th century CE) in contrast to the Carolingian minuscule (around 780 – 12th century) Gothic majuscule (13th and 14th century), in contrast to the early Gothic (end of 11th to 13th century), Gothic (14th century), and late Gothic (16t century) minuscules. Traditionally, certain letters were rendered differently according to a set of rules. In particular, those letters that began sentences or nouns were made larger and often written in a distinct script. There was no fixed capitalisation system until the early 18th century. The English language eventually dropped the rule for nouns, while the German language keeps it. Similar developments have taken place in other alphabets. The lower-case script for the Greek alphabet has its origins in the 7th century and acquired its quadrilinear form (that is, characterised by ascenders and descenders)[37] in the 8th century. Over time, uncial letter forms were increasingly mixed into the script. The earliest dated Greek lower-case text is the Uspenski Gospels (MS 461) in the year 835.[38] The modern practice of capitalising the first letter of every sentence seems to be imported (and is rarely used when printing Ancient Greek materials even today).[citation needed] Simplified relationship between various scripts leading to the development of modern lower case of standard Latin alphabet and that of the modern variants Fraktur (used in Germany until 1940s) and Gaelic (used in Ireland). Several scripts coexisted such as half-uncial and uncial, which derive from Roman cursive and Greek uncial, and Visigothic, Merovingian (Luxeuil variant here) and Beneventan. The Carolingian script was the basis for blackletter (here textualis quadrata) and is completely unrelated to Visigothic script. The letter j is i with a flourish, u and v are the same letter in early scripts and were used depending on their position in insular half-uncial and caroline minuscule and later scripts, w is a ligature of vv, in insular the rune wynn is used as a w (three other runes in use were the thorn (þ), fe̅ (ƿ) as an abbreviation for cattle/goods and maor (𐌚) for man). The letters y and z were very rarely used, in particular þ was written identically to y so y was dotted to avoid confusion, the dot was adopted for i only after late-caroline (protogothic), in beneventan script the macron abbreviation featured a dot above. Lost variants such as r rotunda, ligatures and scribal abbreviation marks are omitted; long s is shown when no terminal s Initial, or drop cap Grammatical case Punctuation Roman cursive Roman square capitals Shift key Small caps Text figures Unicode ^ In Roman Antiqua or other vertical fonts, the defunct long s (ſ) would have been an ascender; however, in italics, it would have been one of only two letters in the English alphabet (and most other Latin-script alphabets) with both an ascender and a descender, the other being [ʹ] ^ "The School's Manual of Style". Johns Hopkins, Bloomberg School of Public Health. Retrieved 9 November 2018. ^ Hansard, Thomas Curson (1825). *Typographia, an Historical Sketch of the Origin and Progress of the Art of Printing*, pp. 408, 4806. Retrieved 12 August 2015. ^ Marc Drogin (1980). *Medieval Calligraphy: Its History and Technique*. Courier Corporation. p. 37. ISBN 9780486261423. ^ Sacramento History Museum. 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Lowercase letters are all letters that do not begin a sentence or refer to a proper noun. English alphabet lowercase letters: a b c d e f g h i j k l m n o p q r s t u v w x y z. Examples of Lowercase Letters: word The word above uses only lowercase letters. The sentence above has lowercase letters after the first letter of the sentence. This sentence and the one directly above have all lowercase letters except for the "T." What are Uppercase Letters? Uppercase letters are also known as capital letters. Uppercase letters signal to the reader that something is important or significant. English alphabet uppercase letters: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z. Examples of Uppercase Letters: Jones This is a proper name, so the first letter of the title and the last name are capitalized Main Street This is a proper noun so the first letter of each word is capitalized When to Use Uppercase Letters In English, the first letter of every sentence is capitalized. The uppercase letter signals to the reader that a new sentence is beginning. Other uses of uppercase letters are detailed below. Titles All titles are considered proper nouns and require capitalization. Examples: Miss Mabry Mathers Madam Lockfield Incorrect: madam lockfield Lady Grace Janks Acronyms Acronyms are a type of abbreviation. Acronyms are words formed from other letters to make a new word. However, they require capital letters to signal to the reader that those letters stand for something and are not a word alone. Examples: NATO North Atlantic Treaty Organization UNICEF United Nations Internationl Children's Emergency Fund SCUBA Self-contained underwater breathing apparatus All Proper Nouns All proper nouns need to be capitalized. Examples: We visited the Bowers Museum on Saturday. Incorrect: We visited the bowers museum on Saturday. I would like to tour the Eiffel Tower. Incorrect: I would like to tour the eiffel tower. Their names are Jake and Suzy. Incorrect: Their names are jake and suzy. When to Use Lowercase Letters Use lowercase letters for all letters other than the first in a sentence, provided that there is no required use for uppercase letters in the sentence. Examples: Every word in this sentence other than the first word is written in lowercase. The only words in this sentence that require uppercase letters are the proper nouns, London and Paris. All nouns that are not proper nouns are called common nouns. All common nouns use lowercase letters (unless a common noun begins a sentence). Examples: tree dog bird water air star street girl baby Summary Define lowercase letters: lowercase letters are those letters used for common nouns and internal words. Define uppercase letters: uppercase letters (also called capital letters) are those letters that signify the beginning of a sentence or a proper noun. In summary, Uppercase and lowercase letters refer to all letters used to compose the English language. Uppercase letters are used to begin sentences and are also used for proper nouns. Lowercase letters are all letters that do not begin sentences.