ASCII Code

Data coding

Morse code was the first code used for long-distance communication. Samuel F.B. Morse invented it in 1844. This code is made up of dots and dashes (a sort of binary code). It was used to carry out communication much faster than could the Pony Express, the United States mail service at the time. The telegraph operator, who needed a full understanding of the code, was a key figure back then.

Numerous codes were invented, including Émile Baudot's code (known as *Baudot code* or *Murray Code*).

On 10 March 1876, Dr Alexander Graham Bell completed the telephone, a revolutionary invention for carrying voice signals over wires. As an interesting aside, the House of Representatives has recently resolved that Antonio Meucci is the inventor of the telephone. Meucci had in fact filed a patent request in 1871, but was unable to continue renewing it past 1874.

These telegraph lines gave rise to teletypewriters, machines which could encode and decode character using Baudot code (the characters were encoded using 5 bits at the time, allowing for only 32 characters).

In the 1960s, ASCII code (for American Standard Code for Information Interchange) was adopted as the new standard. With ASCII, characters can be coded using 8 bits, for 256 possible characters.

What is ASCII code?

Computer memory saves all data in digital form. There is no way to store characters directly. Each character has its digital code equivalent: This is called**ASCII code** (for *American Standard Code for Information Interchange*). Basic ASCII code represented characters as 7 bits (for 128 possible characters, numbered from 0 to 127).

- Codes 0 to 31 are not used for characters They are called *control characters*, because they are used for actions like:
- Carriage return (CR)
- Bell (BEL)

- Codes 65 to 90 stand for uppercase letters.
- Codes 97 to 122 stand for lowercase letters

(Changing the 6th bit switches uppercase to lowercase; this is equivalent to adding 32 to the ASCII code in base-10.)

ASCII Character Chart

Character	**ASCII Code**	**Hexadecimal Code**
NUL (*Null*)	0	00
SOH (*Start of heading*)	1	01
STX (*Start of text*)	2	02
ETX (*End of text*)	3	03
EOT (*End of transmission*)	4	04
ENQ (*Enquiry*)	5	05
ACK (*Acknowledge*)	6	06
BEL (*Bell*)	7	07
BS (*Backspace*)	8	08
TAB (*Horizontal tabulation*)	9	09
LF (*Line Feed*)	10	0A
VT (*Vertical tabulation*)	11	0B
FF (*Form feed*)	12	0C
CR (*Carriage return*)	13	0D
SO (*Shift out*)	14	0E
SI (*Shift in*)	15	0F
DLE (*Data link escape*)	16	10
DC1 (*Device control 1*)	17	11
DC2 (*Device control 2*)	18	12
DC3 (*Device control 3*)	19	13
DC4 (*Device control 4*)	20	14

NAK (*Negative acknowledgement*)	21	15
SYN (*Synchronous idle*)	22	16
ETB (*End of transmission block*)	23	17
CAN (*Cancel*)	24	18
EM (*End of medium*)	25	19
SUB (*Substitute*)	26	1A
ESC (*Escape*)	27	1B
FS (*File separator*)	28	1C
GS (*Group separator*)	29	1D
RS (*Record separator*)	30	1E
US (*Unit separator*)	31	1F
SP (*Space*)	32	20
!	33	21
"	34	22
#	35	23
$	36	24
%	37	25
&	38	26
'	39	27
(	40	28
)	41	29
*	42	2A
+	43	2B
,	44	2C
–	45	2D
.	46	2E
/	47	2F

0	48	30
1	49	31
2	50	32
3	51	33
4	52	34
5	53	35
6	54	36
7	55	37
8	56	38
9	57	39
:	58	3A
;	59	3B
<	60	3C
=	61	3D
>	62	3E
?	63	3F
@	64	40
A	65	41
B	66	42
C	67	43
D	68	44
E	69	45
F	70	46
G	71	47
H	72	48
I	73	49
J	74	4A

K	75	4B
L	76	4C
M	77	4D
N	78	4E
O	79	4F
P	80	50
Q	81	51
R	82	52
S	83	53
T	84	54
U	85	55
V	86	56
W	87	57
X	88	58
Y	89	59
Z	90	5A
[	91	5B
\	92	5C
]	93	5D
^	94	5E
_	95	5F
'	96	60
a	97	61
b	98	62
c	99	63
d	100	64
e	101	65

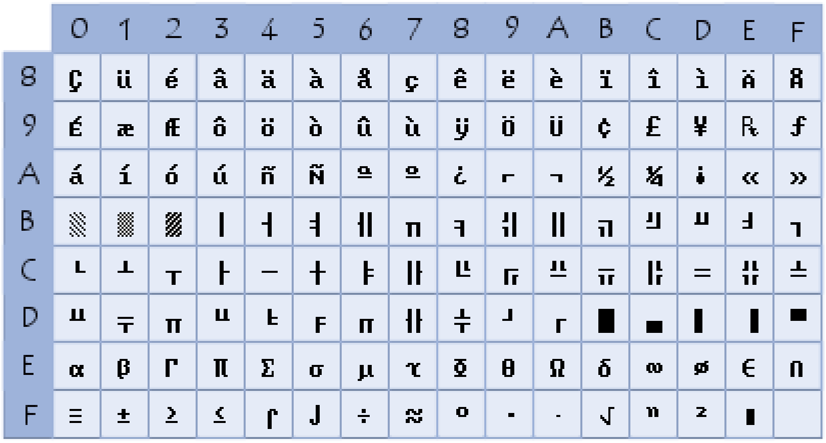
f	102	66
g	103	67
h	104	68
i	105	69
j	106	6A
k	107	6B
l	108	6C
m	109	6D
n	110	6E
o	111	6F
p	112	70
q	113	71
r	114	72
s	115	73
t	116	74
u	117	75
v	118	76
w	119	77
x	120	78
y	121	79
z	122	7A
{	123	7B
	124	7C
}	125	7D
~	126	7E
Delete key	127	7F

Extended ASCII Character Chart

ASCII Code was developed for use with the English language. It does not have accented characters, or language-specific characters. To encode such a character, a different code system is needed. ASCII code was extended to 8 bits (a byte) in order to be able to encode more characters (this is also known as Extended ASCII Code). This code assigns the values 0 to 255 (coded as 8 bits, i.e. 1 byte) to uppercase and lowercase letters, digits, punctuation marks and other symbols (including accented characters, in the code *iso-latin1*).
Extended ASCII code is not standardized, and varies depending on which platform is used.

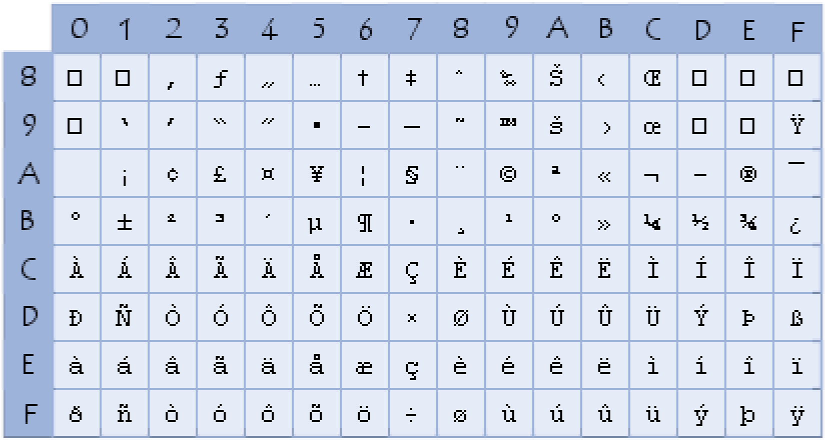
The two most commonly used extended ASCII character sets are:

- OEM Extended ASCII Code, which was built into the first IBM PCs



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	₧	ƒ
A	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
B	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
C	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
D	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀
E	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	

- ANSI Extended ASCII CODE, used by recent operating systems



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
8	□	□	‚	ƒ	„	…	†	‡	ˆ	‰	Š	‹	Œ	□	□	□
9	□	‘	’	“	”	•	–	—	˜	™	š	›	œ	□	□	Ÿ
A		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
B	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

EBCDIC code

EBCDIC code (short for *Extended Binary-Coded Decimal Interchange Code*), developed by IBM, is used for encoding characters with 8 bits. Though widespread on IBM computers, it has not been as successful as ASCII code.

Unicode

Unicode is a 16-bit character encoding system developed in 1991. Unicode can express any character as a 16-bit code, no matter what operating system or programming language is used.
It includes almost all current alphabets (among them Arabic, Armenian, Cyrillic, Greek, Hebrew, and Latin) and is compatible with ASCII code.

Source: http://en.kioskea.net/contents/55-ascii-code