lamaPLC Communication: ASCII

ASCII an acronym for *American Standard Code for Information Interchange*, is a character encoding standard for electronic communication. ASCII codes represent text in computers, telecommunications equipment, and other devices. ASCII has just 128 code points, of which only 95 are printable characters, which severely limit its scope. The set of available punctuation had significant impact on the syntax of computer languages and text markup. ASCII hugely influenced the design of character sets used by modern computers, including Unicode which has over a million code points, but the first 128 of these are the same as ASCII.

The Internet Assigned Numbers Authority (IANA) prefers the name US-ASCII for this character encoding.

ASCII is one of the IEEE milestones.

Overview ASCII was developed in part from telegraph code. Its first commercial use was in the Teletype Model 33 and the Teletype Model 35 as a seven-bit teleprinter code promoted by Bell data services.[when?] Work on the ASCII standard began in May 1961, with the first meeting of the *American Standards Association's* (**ASA**) (now the *American National Standards Institute or ANSI*) X3.2 subcommittee.

The first edition of the standard was published in 1963, underwent a major revision during 1967, and experienced its most recent update during 1986. Compared to earlier telegraph codes, the proposed Bell code and ASCII were both ordered for more convenient sorting (i.e., alphabetization) of lists and added features for devices other than teleprinters.

The use of ASCII format for Network Interchange was described in 1969. That document was formally elevated to an Internet Standard in 2015.

Originally based on the (modern) English alphabet, ASCII encodes 128 specified characters into seven-bit integers as shown by the ASCII chart in this article. Ninety-five of the encoded characters are printable: these include the digits 0 to 9, lowercase letters a to z, uppercase letters A to Z, and punctuation symbols. In addition, the original ASCII specification included 33 non-printing control codes which originated with Teletype models; most of these are now obsolete, although a few are still commonly used, such as the carriage return, line feed, and tab codes.

For example, lowercase i would be represented in the ASCII encoding by binary *1101001* = *hexadecimal 69* (**i** is the ninth letter) = *decimal 105*.

Despite being an American standard, ASCII does not have a code point for the cent (¢). It also does not support English terms with diacritical marks such as résumé and jalapeño, or proper nouns with diacritical marks such as Beyoncé (although on certain devices characters could be combined with punctuation such as Tilde (~) and Backtick (`) to approximate such characters.)

ASCII table

ASCII Table

Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char	Dec	Hex	Oct	Char
0	0	0		32	20	40	[space]	64	40	100	@	96	60	140	`
1	1	1		33	21	41	!	65	41	101	A	97	61	141	a
2	2	2		34	22	42	"	66	42	102	B	98	62	142	b
3	3	3		35	23	43	#	67	43	103	C	99	63	143	c
4	4	4		36	24	44	$	68	44	104	D	100	64	144	d
5	5	5		37	25	45	%	69	45	105	E	101	65	145	e
6	6	6		38	26	46	&	70	46	106	F	102	66	146	f
7	7	7		39	27	47	'	71	47	107	G	103	67	147	g
8	8	10		40	28	50	(	72	48	110	H	104	68	150	h
9	9	11		41	29	51	)	73	49	111	I	105	69	151	i
10	A	12		42	2A	52	*	74	4A	112	J	106	6A	152	j
11	B	13		43	2B	53	+	75	4B	113	K	107	6B	153	k
12	C	14		44	2C	54	,	76	4C	114	L	108	6C	154	l
13	D	15		45	2D	55	-	77	4D	115	M	109	6D	155	m
14	E	16		46	2E	56	.	78	4E	116	N	110	6E	156	n
15	F	17		47	2F	57	/	79	4F	117	O	111	6F	157	o
16	10	20		48	30	60	0	80	50	120	P	112	70	160	p
17	11	21		49	31	61	1	81	51	121	Q	113	71	161	q
18	12	22		50	32	62	2	82	52	122	R	114	72	162	r
19	13	23		51	33	63	3	83	53	123	S	115	73	163	s
20	14	24		52	34	64	4	84	54	124	T	116	74	164	t
21	15	25		53	35	65	5	85	55	125	U	117	75	165	u
22	16	26		54	36	66	6	86	56	126	V	118	76	166	v
23	17	27		55	37	67	7	87	57	127	W	119	77	167	w
24	18	30		56	38	70	8	88	58	130	X	120	78	170	x
25	19	31		57	39	71	9	89	59	131	Y	121	79	171	y
26	1A	32		58	3A	72	:	90	5A	132	Z	122	7A	172	z
27	1B	33		59	3B	73	;	91	5B	133	[	123	7B	173	{
28	1C	34		60	3C	74	<	92	5C	134	\	124	7C	174	|
29	1D	35		61	3D	75	=	93	5D	135	]	125	7D	175	}
30	1E	36		62	3E	76	>	94	5E	136	^	126	7E	176	~
31	1F	37		63	3F	77	?	95	5F	137	_	127	7F	177	

Sources

Wikipedia (here)

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