

The ASCII Scheme of Character Encoding

ASCII is short for *American Standard Code for Information Interchange*, a standard mapping characters to 7 bit codes, that is, to numbers ranging from 0 to 127 decimal, or 7F hexadecimal, according to the following table. Code 20 hex represents the space.

hex	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0x	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
1x	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2x	␣	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
3x	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4x	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5x	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
6x	'	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7x	p	q	r	s	t	u	v	w	x	y	z	{		}	~	DEL

The first 32 codes are assigned to functions rather than characters. For example, HT means “move to next tab stop”. Many of these *control codes* are for very specific applications and are rarely used nowadays. Anyway, here is what they mean:

Transmission Control

01	SOH	Start of Heading
02	STX	Start of Text
03	ETX	End of Text
04	EOT	End of Transmission
05	ENQ	Enquiry (goes with ACK)
06	ACK	Acknowledge
10	DLE	Data Link Escape
15	NAK	Negative Acknowledge
16	SYN	Synchronous Idle
17	ETB	End Transmission Block

Device Control

11	DC1	XON (okay to send)
12	DC2	Device Control 2
13	DC3	XOFF (pause listings)
14	DC4	Device Control 4

Code Extensions

0E	SO	Shift Out (use alternate code)
0F	SI	Shift In (resume default code)
1B	ESC	Escape

Formatting

08	BS	Backspace
09	HT	Horizontal Tabulation
0A	LF	Line Feed
0B	VT	Vertical Tabulation
0C	FF	Form Feed (page eject)
0D	CR	Carriage Return

Information Separation

1C	FS	File Separator
1D	GS	Group Separator
1E	RS	Record Separator
1F	US	Unit Separator

Others

00	NUL	Null character
07	BEL	Bell (ring the bell)
18	CAN	Cancel line
19	EM	End of Medium
1A	SUB	Substitute