

# ASCII

**pronunciation: ass-kee**

```
!"#$%&'()*+,-./  
0123456789:;<=>?  
@ABCDEFGHIJKLMNO  
PQRSTUVWXYZ[\]^_  
`abcdefghijklmno  
pqrstuvwxyz{|}~
```

```
*** **      ** **      ** **      ** **  
* *      * *      * * *      * * *      * *  
***** ** * * **      * * *      * * *      * *  
* *      * *      * *      * * *      * * *      * *  
*** **      *** **      ** **      * *      * *      ***
```

```
.0SSSSO. .0SSSSO .SSSSSO, .SSSSSO. .SSSSSO. .SSSSSO.  
.0 .S.SS' .SSSSO. SS S".0 SS .SS.SSS SS"OS" SS  
.OSS.OSS "SSSO. SS .SO.SS SS S' S' SS SSS" S  
SS SS .SSSSO. SS S' S' SSS" S  
S' S'.SSSS' SSSSSO. S' S'
```

## **Introduction to ASCII**

- **ASCII stands for “American Standard Code for Information Interchange”.**
- **ASCII is a code for representing English characters as numbers, with each letter assigned a number from 0 to 127.**
- **Text files stored in ASCII format are sometimes called ASCII files.**



## **History of ASCII**

- **ASCII was developed from telegraphic codes. Its first commercial use was as a seven-bit teleprinter code promoted by Bell data services.**
- **Work on ASCII formally began on October 6, 1960, with the first meeting of the American Standards Association's (ASA) X3.2 subcommittee.**

# History of ASCII

- **ASCII is an international standard. Since 1963, more than 150 alphabets have been defined using the escape sequence.**

b7 → b6 → b5 → Bits					0	0	0	0	1	1	1	1	1		
					0	0	1	1	0	0	1	1	0	1	
					0	1	2	3	4	5	6	7			
b4 ↓ b3 ↓ b2 ↓ b1 ↓ Row ↓					Column →										
0	0	0	0	0	0	NUL	DLE	SP	0	@	P	`	p		
0	0	0	0	1	1	SOH	DC1	!	1	A	Q	a	q		
0	0	0	1	0	2	STX	DC2	"	2	B	R	b	r		
0	0	1	1	0	3	ETX	DC3	#	3	C	S	c	s		
0	1	0	0	0	4	EOT	DC4	\$	4	D	T	d	t		
0	1	0	1	0	5	ENQ	NAK	%	5	E	U	e	u		
0	1	1	0	0	6	ACK	SYN	&	6	F	V	f	v		
0	1	1	1	0	7	BEL	ETB	'	7	G	W	g	w		
1	0	0	0	0	8	BS	CAN	(	8	H	X	h	x		
1	0	0	0	1	9	HT	EM	)	9	I	Y	i	y		
1	0	1	0	0	10	LF	SUB	*	:	J	Z	j	z		
1	0	1	1	0	11	VT	ESC	+	;	K	[	k	{		
1	1	0	0	0	12	FF	FC	,	<	L	\	l			
1	1	0	1	0	13	CR	GS	-	=	M	]	m	}		
1	1	1	0	0	14	SO	RS	.	>	N	^	n	~		
1	1	1	1	0	15	SI	US	/	?	O	_	o	DEL		

US ASCII 1968 Code Chart



# ASCII Code

- **ASCII establishes standard character definitions as well as some standard formatting things like 13 for Enter, 10 for new line, 9 for Tabulation and the likes.**

ASCII Code Chart

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

## ASCII File Types

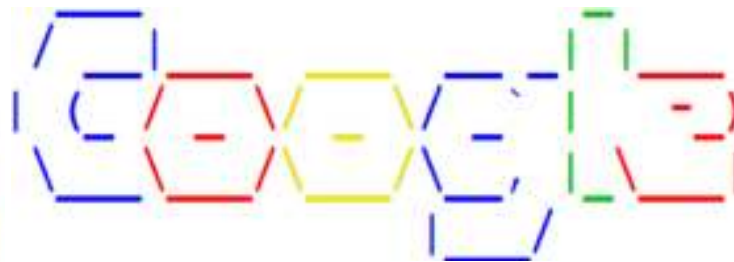


- **Plain text file that uses ASCII encoding that can be opened and edited with any text editor; much more commonly uses the .ASC or .TXT extension.**
- **The term "ASCII file" refers to a "text" file that is readable by the naked eye (it only contains the letters a-z, numbers, carriage returns, and punctuation marks).**



## More on ASCII (Continued)

- **An ASCII file (as stated earlier) is a file that humans can read with a simple Windows Notepad program or the editor built into MS-DOS. An ASCII file does not necessarily refer to a particular format adopted by a body.**



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# Code Tables

# ASCII





# ASCII Code Table

## ASCII

Character	Description	Decimal	Hexadecimal	ASCII code
NUL	Null	0	0	0000000
SOH	Start of heading	1	1	0000001
STX	Start of text	2	2	0000010
ETX	End of text	3	3	0000011
EOT	End of transmission	4	4	0000100
ENQ	Enquiry	5	5	0000101
ACK	Acknowledge	6	6	0000110
BEL	Bell	7	7	0000111
BS	Backspace	8	8	0001000
HT	Horizontal tab	9	9	0001001
LF	Line feed	10	A	0001010
VT	Vertical tab	11	B	0001011
FF	Form feed	12	C	0001100
CR	Carriage return	13	D	0001101
SO	Shift out	14	E	0001110
SI	Shift in	15	F	0001111
DLE	Data link escape	16	10	0010000
DC1	Device control 1	17	11	0010001
DC2	Device control 2	18	12	0010010
DC3	Device control 3	19	13	0010011
DC4	Device control 4	20	14	0010100
NAK	Negative acknowledge	21	15	0010101
SYN	Synchronous idle	22	16	0010110
ETB	End of trans block	23	17	0010111
CAN	Cancel	24	18	0011000
EM	End of medium	25	19	0011001
SUB	Substitute	26	1A	0011010
ESC	Escape	27	1B	0011011
FS	File separator	28	1C	0011100
GS	Group separator	29	1D	0011101
RS	Record separator	30	1E	0011110
US	Unit separator	31	1F	0011111
Space		32	20	0100000
!	Exclamation mark	33	21	0100001
"	Double quote	34	22	0100010
#	Hash	35	23	0100011
\$	Dollar	36	24	0100100
%	Percent	37	25	0100101
&	Ampersand	38	26	0100110

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# ASCII Code Table

Character	Description	Decimal	Hexadecimal	ASCII code
'	Quote	39	27	0100111
(	Open parenthesis	40	28	0101000
)	Close parenthesis	41	29	0101001
*	Asterisk	42	2A	0101010
+	Plus	43	2B	0101011
,	Comma	44	2C	0101100
-	Minus	45	2D	0101101
.	Full stop	46	2E	0101110
/	Oblique stroke	47	2F	0101111
0		48	30	0110000
1		49	31	0110001
2		50	32	0110010
3		51	33	0110011
4		52	34	0110100
5		53	35	0110101
6		54	36	0110110
7		55	37	0110111
8		56	38	0110000
9		57	39	0111001
:	Colon	58	3A	0111010
;	Semicolon	59	3B	0111011
<	Less than	60	3C	0111100
=	Equals	61	3D	0111101
>	Greater than	62	3E	0111110
?	Question mark	63	3F	0111111
@	Commercial at	64	40	1000000
A		65	41	1000001
B		66	42	1000010
C		67	43	1000011
D		68	44	1000100
E		69	45	1000101
F		70	46	1000110
G		71	47	1000111
H		72	48	1001000
I		73	49	1001001
J		74	4A	1001010
K		75	4B	1001011
L		76	4C	1001100
M		77	4D	1001101
N		78	4E	1001110
O		79	4F	1001111
P		80	50	1010000
Q		81	51	1010001
R		82	52	1010010
S		83	53	1010011

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# ASCII Code Table

Character	Description	Decimal	Hexadecimal	ASCII code
T		84	54	1010100
U		85	55	1010101
V		86	56	1010110
W		87	57	1010111
X		88	58	1011000
Y		89	59	1011001
Z		90	5A	1011010
[	Open square bracket	91	5B	1011011
\	Backslash	92	5C	1011100
]	Close square bracket	93	5D	1011101
^	Caret	94	5E	1011110
_	Underscore	95	5F	1011111
`	Back quote	96	60	1100000
a		97	61	1100001
b		98	62	1100010
c		99	63	1100011
d		100	64	1100100
e		101	65	1100101
f		102	66	1100110
g		103	67	1100111
h		104	68	1101000
i		105	69	1101001
j		106	6A	1101010
k		107	6B	1101011
l		108	6C	1101100
m		109	6D	1101101
n		110	6E	1101110
o		111	6F	1101111
p		112	70	1110000
q		113	71	1110001
r		114	72	1110010
s		115	73	1110011
t		116	74	1110100
u		117	75	1110101
v		118	76	1110110
w		119	77	1110111
x		120	78	1111000
y		121	79	1111001
z		122	7A	1111010
{	Open curly bracket	123	7B	1111011
	Vertical bar	124	7C	1111100
}	Close curly bracket	125	7D	1111101
~	Tilde	126	7E	1111110
DEL	Delete	127	7F	1111111

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Sources:

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