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HTML Encoding (Character Sets)

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To display an HTML page correctly, a web browser must know which character set to use.

What is Character Encoding?

ASCII was the first **character encoding standard** (also called character set). ASCII defined 128 different alphanumeric characters that could be used on the internet: numbers (0-9), English letters (A-Z), and some special characters like ! $ + - ( ) @ < > .

ISO-8859-1 was the default character set for HTML 4. This character set supported 256 different character codes.

ANSI (Windows-1252) was the original Windows character set. ANSI is identical to ISO-8859-1, except that ANSI has 32 extra characters.

Because ANSI and ISO-8859-1 were so limited, HTML 4 also supported UTF-8.

UTF-8 (Unicode) covers almost all of the characters and symbols in the world.

The default character set for HTML5 is UTF-8.

To display an HTML page correctly, a web browser must know the character set used in the page.

This is specified in the `<meta>` tag:

```
<meta charset="UTF-8">
```

If a browser detects ISO-8859-1 in a web page, it defaults to ANSI.

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Differences Between Character Sets

The following table displays the differences between the character sets described above:

Numb	ASCII	ANSI	8859	UTF-8	Description
32					space
33	!	!	!	!	exclamation mark
34	"	"	"	"	quotation mark
35	#	#	#	#	number sign
36	$	$	$	$	dollar sign
37	%	%	%	%	percent sign
38	&	&	&	&	ampersand

40	(	(	(	(	left parenthesis
41	)	)	)	)	right parenthesis
42	*	*	*	*	asterisk
43	+	+	+	+	plus sign
44	,	,	,	,	comma
45	-	-	-	-	hyphen-minus
46	.	.	.	.	full stop
47	/	/	/	/	solidus
48	0	0	0	0	digit zero
49	1	1	1	1	digit one
50	2	2	2	2	digit two
51	3	3	3	3	digit three
52	4	4	4	4	digit four
53	5	5	5	5	digit five
54	6	6	6	6	digit six
55	7	7	7	7	digit seven
56	8	8	8	8	digit eight
57	9	9	9	9	digit nine
58	:	:	:	:	colon
59	;	;	;	;	semicolon
60	<	<	<	<	less-than sign
61	=	=	=	=	equals sign
62	>	>	>	>	greater-than sign
63	?	?	?	?	question mark
64	@	@	@	@	commercial at
65	A	A	A	A	Latin capital letter A

67	C	C	C	C	Latin capital letter C
68	D	D	D	D	Latin capital letter D
69	E	E	E	E	Latin capital letter E
70	F	F	F	F	Latin capital letter F
71	G	G	G	G	Latin capital letter G
72	H	H	H	H	Latin capital letter H
73	I	I	I	I	Latin capital letter I
74	J	J	J	J	Latin capital letter J
75	K	K	K	K	Latin capital letter K
76	L	L	L	L	Latin capital letter L
77	M	M	M	M	Latin capital letter M
78	N	N	N	N	Latin capital letter N
79	O	O	O	O	Latin capital letter O
80	P	P	P	P	Latin capital letter P
81	Q	Q	Q	Q	Latin capital letter Q
82	R	R	R	R	Latin capital letter R
83	S	S	S	S	Latin capital letter S
84	T	T	T	T	Latin capital letter T
85	U	U	U	U	Latin capital letter U
86	V	V	V	V	Latin capital letter V
87	W	W	W	W	Latin capital letter W
88	X	X	X	X	Latin capital letter X
89	Y	Y	Y	Y	Latin capital letter Y
90	Z	Z	Z	Z	Latin capital letter Z
91	[	[	[	[	left square bracket

93	]	]	]	]	right square bracket
94	^	^	^	^	circumflex accent
95	_	_	_	_	low line
96	`	`	`	`	grave accent
97	a	a	a	a	Latin small letter a
98	b	b	b	b	Latin small letter b
99	c	c	c	c	Latin small letter c
100	d	d	d	d	Latin small letter d
101	e	e	e	e	Latin small letter e
102	f	f	f	f	Latin small letter f
103	g	g	g	g	Latin small letter g
104	h	h	h	h	Latin small letter h
105	i	i	i	i	Latin small letter i
106	j	j	j	j	Latin small letter j
107	k	k	k	k	Latin small letter k
108	l	l	l	l	Latin small letter l
109	m	m	m	m	Latin small letter m
110	n	n	n	n	Latin small letter n
111	o	o	o	o	Latin small letter o
112	p	p	p	p	Latin small letter p
113	q	q	q	q	Latin small letter q
114	r	r	r	r	Latin small letter r
115	s	s	s	s	Latin small letter s
116	t	t	t	t	Latin small letter t
117	u	u	u	u	Latin small letter u
118	v	v	v	v	Latin small letter v

120	x	x	x	x	Latin small letter x
121	y	y	y	y	Latin small letter y
122	z	z	z	z	Latin small letter z
123	{	{	{	{	left curly bracket
124	|	|	|	|	vertical line
125	}	}	}	}	right curly bracket
126	~	~	~	~	tilde
127	DEL				
128		€			euro sign
129					NOT USED
130		‚			single low-9 quotation mark
131		ƒ			Latin small letter f with hook
132		„			double low-9 quotation mark
133		…			horizontal ellipsis
134		†			dagger
135		‡			double dagger
136		ˆ			modifier letter circumflex accent
137		‰			per mille sign
138		Š			Latin capital letter S with caron
139		‹			single left-pointing angle quotation mark
140		Œ			Latin capital ligature OE
141					NOT USED
142		Ž			Latin capital letter Z with caron
143					NOT USED
144					NOT USED
145		'			left single quotation mark

147	"			left double quotation mark
148	"			right double quotation mark
149	•			bullet
150	–			en dash
151	—			em dash
152	˜			small tilde
153	™			trade mark sign
154	š			Latin small letter s with caron
155	›			single right-pointing angle quotation mark
156	œ			Latin small ligature oe
157				NOT USED
158	ž			Latin small letter z with caron
159	Ÿ			Latin capital letter Y with diaeresis
160				no-break space
161	¡	¡	¡	inverted exclamation mark
162	¢	¢	¢	cent sign
163	£	£	£	pound sign
164	¤	¤	¤	currency sign
165	¥	¥	¥	yen sign
166	¦	¦	¦	broken bar
167	§	§	§	section sign
168	¨	¨	¨	diaeresis
169	©	©	©	copyright sign
170	ª	ª	ª	feminine ordinal indicator
171	«	«	«	left-pointing double angle quotation mark

173				soft hyphen
174	®	®	®	registered sign
175	¯	¯	¯	macron
176	°	°	°	degree sign
177	±	±	±	plus-minus sign
178	²	²	²	superscript two
179	³	³	³	superscript three
180	´	´	´	acute accent
181	µ	µ	µ	micro sign
182	¶	¶	¶	pilcrow sign
183	·	·	·	middle dot
184	¸	¸	¸	cedilla
185	¹	¹	¹	superscript one
186	º	º	º	masculine ordinal indicator
187	»	»	»	right-pointing double angle quotation mark
188	¼	¼	¼	vulgar fraction one quarter
189	½	½	½	vulgar fraction one half
190	¾	¾	¾	vulgar fraction three quarters
191	¿	¿	¿	inverted question mark
192	À	À	À	Latin capital letter A with grave
193	Á	Á	Á	Latin capital letter A with acute
194	Â	Â	Â	Latin capital letter A with circumflex
195	Ã	Ã	Ã	Latin capital letter A with tilde
196	Ä	Ä	Ä	Latin capital letter A with diaeresis
197	Å	Å	Å	Latin capital letter A with ring above

199	Ç	Ç	Ç	Latin capital letter C with cedilla
200	È	È	È	Latin capital letter E with grave
201	É	É	É	Latin capital letter E with acute
202	Ê	Ê	Ê	Latin capital letter E with circumflex
203	Ë	Ë	Ë	Latin capital letter E with diaeresis
204	Ì	Ì	Ì	Latin capital letter I with grave
205	Í	Í	Í	Latin capital letter I with acute
206	Î	Î	Î	Latin capital letter I with circumflex
207	Ï	Ï	Ï	Latin capital letter I with diaeresis
208	Ð	Ð	Ð	Latin capital letter Eth
209	Ñ	Ñ	Ñ	Latin capital letter N with tilde
210	Ò	Ò	Ò	Latin capital letter O with grave
211	Ó	Ó	Ó	Latin capital letter O with acute
212	Ô	Ô	Ô	Latin capital letter O with circumflex
213	Õ	Õ	Õ	Latin capital letter O with tilde
214	Ö	Ö	Ö	Latin capital letter O with diaeresis
215	×	×	×	multiplication sign
216	Ø	Ø	Ø	Latin capital letter O with stroke
217	Ù	Ù	Ù	Latin capital letter U with grave
218	Ú	Ú	Ú	Latin capital letter U with acute
219	Û	Û	Û	Latin capital letter U with circumflex
220	Ü	Ü	Ü	Latin capital letter U with diaeresis
221	Ý	Ý	Ý	Latin capital letter Y with acute
222	Þ	Þ	Þ	Latin capital letter Thorn
223	ß	ß	ß	Latin small letter sharp s
224	à	à	à	Latin small letter a with grave

226	â	â	â	Latin small letter a with circumflex
227	ã	ã	ã	Latin small letter a with tilde
228	ä	ä	ä	Latin small letter a with diaeresis
229	å	å	å	Latin small letter a with ring above
230	æ	æ	æ	Latin small letter ae
231	ç	ç	ç	Latin small letter c with cedilla
232	è	è	è	Latin small letter e with grave
233	é	é	é	Latin small letter e with acute
234	ê	ê	ê	Latin small letter e with circumflex
235	ë	ë	ë	Latin small letter e with diaeresis
236	ì	ì	ì	Latin small letter i with grave
237	í	í	í	Latin small letter i with acute
238	î	î	î	Latin small letter i with circumflex
239	ï	ï	ï	Latin small letter i with diaeresis
240	ð	ð	ð	Latin small letter eth
241	ñ	ñ	ñ	Latin small letter n with tilde
242	ò	ò	ò	Latin small letter o with grave
243	ó	ó	ó	Latin small letter o with acute
244	ô	ô	ô	Latin small letter o with circumflex
245	õ	õ	õ	Latin small letter o with tilde
246	ö	ö	ö	Latin small letter o with diaeresis
247	÷	÷	÷	division sign
248	ø	ø	ø	Latin small letter o with stroke
249	ù	ù	ù	Latin small letter u with grave
250	ú	ú	ú	Latin small letter u with acute
251	û	û	û	Latin small letter with circumflex

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253	ý	ý	ý	Latin small letter y with acute
254	þ	þ	þ	Latin small letter thorn
255	ÿ	ÿ	ÿ	Latin small letter y with diaeresis

The ASCII Character Set

ASCII uses the values from 0 to 31 (and 127) for control characters.

ASCII uses the values from 32 to 126 for letters, digits, and symbols.

ASCII does not use the values from 128 to 255.

The ANSI Character Set (Windows-1252)

ANSI is identical to ASCII for the values from 0 to 127.

ANSI has a proprietary set of characters for the values from 128 to 159.

ANSI is identical to UTF-8 for the values from 160 to 255.

The ISO-8859-1 Character Set

8859-1 is identical to ASCII for the values from 0 to 127.

8859-1 does not use the values from 128 to 159.

8859-1 is identical to UTF-8 for the values from 160 to 255.

The UTF-8 Character Set

UTF-8 is identical to ASCII for the values from 0 to 127.

UTF-8 does not use the values from 128 to 159.

UTF-8 is identical to both ANSI and 8859-1 for the values from 160 to 255.

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For a closer look, study our <u>Complete HTML Character Set Reference</u>.

The @charset CSS Rule

You can use the CSS `@charset` rule to specify the character encoding used in a style sheet:

Example

Set the encoding of the style sheet to Unicode UTF-8:

```
@charset "UTF-8";
```

Read more about the <u>CSS @charset Rule in our CSS Reference</u>.

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