

Der Computer versteht nur »0« und »1

Wenn du z.B. auf die Taste »a« drückst, wandelt ein kleiner Chip im Tastaturgehäuse dies sofort in die dazugehörige Dualzahl der Computersprache um: »01100001« und gibt dies zum Computer weiter.

a) Statt unser Schreibweise »(11)₂« schreibt der Computer immer einen Block aus 8 Ziffern, hier also »00000011«. Damit weiß der Computer auch, wann ein neues Zeichen anfängt – nämlich immer nach dem 8. Zeichen. Entschlüssele das folgende Wort: **0100110101100001011101000110100001100101**

b) Schreibe deinen Vornamen in Dualzahlen: _____

c) Einige Dualzahlen fehlen. Trage sie ein!

d) Es gibt neben dem Zweiersystem (Dualzahlen) und dem Zehnersystem (Dezimalzahlen) auch noch andere Zahlensysteme. Zwei davon sind hier ebenfalls aufgeführt:

Das _____system (Hexadezimalzahlen) und das _____system (Oktalzahlen).

Versuche das System für die Hexadezimalzahlen und die Oktalzahlen zu knacken und trage die fehlenden Zahlen in die Tabelle ein. Wie würdest du die Systeme benennen?

Zeichen	Dualzahl	Dezimalzahl	Hexadezimalzahl	Oktalzahl	Name
	00000000	0	00	00	NUL - Null
	00000001	1	01	01	STX - Start of heading (sometimes SOH)
	00000010	2	02	02	SOT - Start of text (was STX)
©	00000011	3	03	03	ETX - End of text
..	00000100	4	04	04	EOT - End of transmission
\$	00000101	5	05	05	ENQ - Inquire
a	00000110	6	06	06	ACK - Acknowledge
.	00000111	7	07	07	BEL - Bell
	00001000	8	08	10	BS - Backspace
	00001001	9	09	11	HT - Horizontal tabulation
	00001010	10	0A	12	LF - Line feed
	00001011	11	0B	13	VT - Vertical tabulation
	00001100	12	0C	14	FF - Form feed
	00001101	13	0D	15	CR - Carriage return
	00001110	14	0E	16	SO - Shift out
	00001111	15	0F	17	SI - Shift in
	00010000	16	10	20	DLE - Data link escape
	00010001	17	11	21	DC1 - Device control 1; X-on
	00010010	18	12	22	DC2 - Device control 2
!!	00010011	19	13	23	DC3 - Device control 3
¶	00010100	20	14	24	DC4 - Device control 4
\$	00010101	21	15	25	NAK - Negative acknowledgment
	00010110	22	16	26	SYN - Synchronous idle
	00010111	23	17	27	ETB - End of transmission block
-	00011000	24	18	30	CAN - Cancel
-	00011001	25	19	31	EM - End of medium
@	00011010	26	1A	32	SUB - Substitute; End of file
↵	00011011	27	1B	33	ESC - Escape
	00011100	28	1C	34	FS - File separator
«	00011101	29	1D	35	GS - Group separator
	00011110	30	1E	36	RS - Record separator
	00011111	31	1F	37	US - Unit separator
	00100000	32	20	40	Space
!	00100001	33	21	41	Exclamation point; exclamation mark; bang
"	00100010	34	22	42	Quotation mark; double quote
#	00100011	35	23	43	Number sign; pound
\$	00100100	36	24	44	Dollar sign; milreis; escudo
%	00100101	37	25	45	Percent sign
&	00100110	38	26	46	Ampersand
'	00100111	39	27	47	Apostrophe; single quote
(	00101000	40	28	50	Left parenthesis; opening parenthesis
)	00101001	41	29	51	Right parenthesis; closing parenthesis
*	00101010	42	2A	52	Asterisk; star; splat
+	00101011	43	2B	53	Plus sign
,	00101100	44	2C	54	Comma; decimal separator
-	00101101	45	2D	55	Minus sign; dash; hyphen
.	00101110	46	2E	56	Period; full stop; dot; point; radix point
/	00101111	47	2F	57	Forward slash; virgule; solidus; stroke; shilling
0	00110000	48	30	60	Digit Zero
1	00110001	49	31	61	Digit One
2	00110010	50	32	62	Digit Two
3	00110011	51	33	63	Digit Three
4	00110100	52	34	64	Digit Four
5	00110101	53	35	65	Digit Five
6	00110110	54	36	66	Digit Six
7	00110111	55	37	67	Digit Seven
8	00111000	56	38	70	Digit Eight
9	00111001	57	39	71	Digit Nine

nicht druckbare Zeichen, die zur Steuerung des Druckers dienen

Zeichen	Dual- zahl	Dezimal- zahl	Hexadezimal- zahl	Oktal- zahl	Name
:	00111010	58	3A	72	Colon; ratio
;	00111011	59	3B	73	Semicolon
<	00111100	60	3C	74	Less than sign; left angle bracket
=	00111101	61	3D	75	Equal sign; identical to
>	00111110	62	3E	76	Greater than sign; right angle bracket
?	00111111	63	3F	77	Question mark; interrobang
@	01000000	64	40	100	At sign; commercial at
A	01000001	65	41	101	Latin capital letter A
B	01000010	66	42	102	Latin capital letter B
C	01000011	67	43	103	Latin capital letter C
D	01000100	68	44	104	Latin capital letter D
E	01000101	69	45	105	Latin capital letter E
F	01000110	70	46	106	Latin capital letter F
G	01000111	71	47	107	Latin capital letter G
H	01001000	72	48	110	Latin capital letter H
I	01001001	73	49	111	Latin capital letter I
J	01001010	74	4A	112	Latin capital letter J
K	01001011	75	4B	113	Latin capital letter K
L	01001100	76	4C	114	Latin capital letter L
M	01001101	77	4D	115	Latin capital letter M
N	01001110	78	4E	116	Latin capital letter N
O	01001111	79	4F	117	Latin capital letter O
P	01010000	80	50	120	Latin capital letter P
Q	01010001	81	51	121	Latin capital letter Q
R	01010010	82	52	122	Latin capital letter R
S	01010011	83	53	123	Latin capital letter S
T	01010100	84	54	124	Latin capital letter T
U	01010101	85	55	125	Latin capital letter U
V	01010110	86	56	126	Latin capital letter V
W	01010111	87	57	127	Latin capital letter W
X	01011000	88	58	130	Latin capital letter X
Y	01011001	89	59	131	Latin capital letter Y
Z	01011010	90	5A	132	Latin capital letter Z
[	01011011	91	5B	133	Left square bracket; opening square bracket
\	01011100	92	5C	134	Backslash; reverse solidus; back-slant
]	01011101	93	5D	135	Right square bracket; closing square bracket
^	01011110	94	5E	136	Circumflex accent; caret; up arrowhead
_	01011111	95	5F	137	Underscore; horizontal bar; low line; under-bar
`	01100000	96	60	140	Grave accent; acute accent; left single quote; back- quote; reversed prime
a	01100001	97	61	141	Latin small letter A
b	01100010	98	62	142	Latin small letter B
c	01100011	99	63	143	Latin small letter C
d	01100100	100	64	144	Latin small letter D
e	01100101	101	65	145	Latin small letter E
f	01100110	102	66	146	Latin small letter F
g	01100111	103	67	147	Latin small letter G
h	01101000	104	68	150	Latin small letter H
i	01101001	105	69	151	Latin small letter I
j	01101010	106	6A	152	Latin small letter J
k	01101011	107	6B	153	Latin small letter K
l	01101100	108	6C	154	Latin small letter L
m	01101101	109	6D	155	Latin small letter M
n	01101110	110	6E	156	Latin small letter N
o	01101111	111	6F	157	Latin small letter O
p	01110000	112	70	160	Latin small letter P
q	01110001	113	71	161	Latin small letter Q
r	01110010	114	72	162	Latin small letter R
s	01110011	115	73	163	Latin small letter S
t	01110100	116	74	164	Latin small letter T
u	01110101	117	75	165	Latin small letter U
v	01110110	118	76	166	Latin small letter V
w	01110111	119	77	167	Latin small letter W
x	01111000	120	78	170	Latin small letter X
y	01111001	121	79	171	Latin small letter Y
z	01111010	122	7A	172	Latin small letter Z

Zeichen	Dual-zahl	Dezimal-zahl	Hexadezimal-zahl	Oktal-zahl	Name
{	01111011	123	7B	173	Left curly brace; left curly bracket; opening curly bracket
|	01111100	124	7C	174	Vertical bar; OR symbol; vertical line; pipe
}	01111101	125	7D	175	Right curly brace; right curly bracket; closing curly bracket
~	01111110	126	7E	176	Tilde; approximate
	01111111	127	7F	177	Delete
€	10000000	128	80	200	€ Euro currency symbol
□	10000001	129	81	201	Not used by ANSI Codepage 1250
,	10000010	130	82	202	BPH - Baseline single quote (Break Permitted Here)
f	10000011	131	83	203	NBH - Latin small hooked f; florin (No Break Here)
”	10000100	132	84	204	IND - Baseline double quote (Index)
...	10000101	133	85	205	NEL - Ellipsis (Next Line)
†	10000110	134	86	206	SSA - Single dagger (Start of Selected Area)
‡	10000111	135	87	207	ESA - Double dagger (End of Selected Area)
^	10001000	136	88	210	HTS - Accent circumflex; caret; Euro symbol in Codepage 1251 (Set Character Tabulation)
‰	10001001	137	89	211	HTJ - Per mille (Set Justified Character Tabulation)
Š	10001010	138	8A	212	VTS - Latin capital S with caron; hacek (Set Line Tabulation)
‹	10001011	139	8B	213	PLD - Single left angle quote; single Guillemet (Partial Line Down)
Œ	10001100	140	8C	214	PLU - Latin capital OE ligature (Partial Line Up)
□	10001101	141	8D	215	RI - Not used by ANSI Codepage 1250 (Reverse Linefeed)
Ž	10001110	142	8E	216	SS2 - Not used by ANSI Codepage 1250 (Single Shift Two)
□	10001111	143	8F	217	SS3 - Not used by ANSI Codepage 1250 (Single Shift Three)
□	10010000	144	90	220	DCS - Not used by ANSI Codepage 1250 (Device Control String)
‘	10010001	145	91	221	PU1 - Opening single quote (Private Use One)
’	10010010	146	92	222	PU2 - Closing single quote (Private Use Two)
“	10010011	147	93	223	STS - Opening double quote (Set Transmit State)
”	10010100	148	94	224	CCH - Closing double quote (Cancel Character)
•	10010101	149	95	225	MW - Bullet (Message Waiting)
–	10010110	150	96	226	SPA - En-dash (Start of Guarded Area)
—	10010111	151	97	227	EPA - Em-dash (End of Guarded Area)
~	10011000	152	98	230	SOS - Tilde (Start of String)
™	10011001	153	99	231	Trademark
š	10011010	154	9A	232	SCI - Latin small S with caron; hacek (Single Character Introducer)
›	10011011	155	9B	233	CSI - Single right angle quote; single Guillemet (Control Sequence Introducer)
œ	10011100	156	9C	234	ST - Latin small OE ligature (String Terminator)
□	10011101	157	9D	235	OSC - Not used by ANSI Codepage 1250 (Operating System Command)
ž	10011110	158	9E	236	PM - Not used by ANSI Codepage 1250 (Privacy Message)
ÿ	10011111	159	9F	237	APC - Latin capital Y, diæresis/umlaut (Application Program Command)
	10100000	160	A0	240	NBSP - Non-breaking space
¡	10100001	161	A1	241	Inverted exclamation mark
¢	10100010	162	A2	242	Cent symbol; cent sign
£	10100011	163	A3	243	Pound Sterling; pound sign
¤	10100100	164	A4	244	International currency; currency sign
¥	10100101	165	A5	245	Japanese Yen; Yen sign
¦	10100110	166	A6	246	Split | (vertical bar); broken bar
§	10100111	167	A7	247	Section sign; paragraph sign
¨	10101000	168	A8	250	Umlaut; diæresis
©	10101001	169	A9	251	Copyright sign
ª	10101010	170	AA	252	Feminine ordinal indicator
«	10101011	171	AB	253	Left Guillemet; chevron; left angle quote
¬	10101100	172	AC	254	Not sign; angled dash
-	10101101	173	AD	255	Soft hyphen; discretionary hyphen
®	10101110	174	AE	256	Registered trademark; registered sign
ˆ	10101111	175	AF	257	Macron; ‾ over-score; vinculum
°	10110000	176	B0	260	Degree sign
±	10110001	177	B1	261	Plus-Minus sign
²	10110010	178	B2	262	Two Superscript; squared
³	10110011	179	B3	263	Three Superscript; cubed

Zeichen	Dual- zahl	Dezimal- zahl	Hexadezimal- zahl	Oktal- zahl	Name
´	10110100	180	B4	264	Acute accent
µ	10110101	181	B5	265	Micro sign; small mu
¶	10110110	182	B6	266	Paragraph; Pilcrow sign
·	10110111	183	B7	267	Middle dot; Georgian comma; midpoint
¸	10111000	184	B8	270	Cedilla
¹	10111001	185	B9	271	Superscript One
º	10111010	186	BA	272	Masculine ordinal indicator
»	10111011	187	BB	273	Right Guillemet; chevron, right angle quote
¼	10111100	188	BC	274	One-fourth
½	10111101	189	BD	275	One-half
¾	10111110	190	BE	276	Three-fourths
¿	10111111	191	BF	277	Inverted question mark
À	11000000	192	C0	300	Latin capital A, grave accent
Á	11000001	193	C1	301	Latin capital A, acute
Â	11000010	194	C2	302	Latin capital A, circumflex
Ã	11000011	195	C3	303	Latin capital A, tilde
Ä	11000100	196	C4	304	Latin capital A, diæresis/umlaut
Å	11000101	197	C5	305	Latin capital A, ring
Æ	11000110	198	C6	306	Latin capital AE ligature
Ç	11000111	199	C7	307	Latin capital C, cedilla
È	11001000	200	C8	310	Latin capital E, grave accent
É	11001001	201	C9	311	Latin capital E, acute accent
Ê	11001010	202	CA	312	Latin capital E, circumflex
Ë	11001011	203	CB	313	Latin capital E, diæresis/umlaut
Ì	11001100	204	CC	314	Latin capital I, grave accent
Í	11001101	205	CD	315	Latin capital I, acute accent
Î	11001110	206	CE	316	Latin capital I, circumflex
Ï	11001111	207	CF	317	Latin capital I, diæresis/umlaut
Ð	11010000	208	D0	320	Latin capital Eth, Icelandic
Ñ	11010001	209	D1	321	Latin capital N, tilde
Ò	11010010	210	D2	322	Latin capital O, grave accent
Ó	11010011	211	D3	323	Latin capital O, acute accent
Ô	11010100	212	D4	324	Latin capital O, circumflex
Õ	11010101	213	D5	325	Latin capital O, tilde
Ö	11010110	214	D6	326	Latin capital O, diæresis/umlaut
×	11010111	215	D7	327	Multiplication sign
Ø	11011000	216	D8	330	Latin capital O, slash
Ù	11011001	217	D9	331	Latin capital U, grave accent
Ú	11011010	218	DA	332	Latin capital U, acute accent
Û	11011011	219	DB	333	Latin capital U, circumflex
Ü	11011100	220	DC	334	Latin capital U, diæresis/umlaut
Ý	11011101	221	DD	335	Latin capital Y, acute accent
Þ	11011110	222	DE	336	Latin capital Thorn, Icelandic
ß	11011111	223	DF	337	Latin small sharp s, German sz
à	11100000	224	E0	340	Latin small A, grave accent
á	11100001	225	E1	341	Latin small A, acute accent
â	11100010	226	E2	342	Latin small A, circumflex
ã	11100011	227	E3	343	Latin small A, tilde
ä	11100100	228	E4	344	Latin small A, diæresis/umlaut
å	11100101	229	E5	345	Latin small A, ring
æ	11100110	230	E6	346	Latin small AE ligature
ç	11100111	231	E7	347	Latin small C, cedilla
è	11101000	232	E8	350	Latin small E, grave accent
é	11101001	233	E9	351	Latin small E, acute accent
ê	11101010	234	EA	352	Latin small E, circumflex
ë	11101011	235	EB	353	Latin small E, diæresis/umlaut
ì	11101100	236	EC	354	Latin small I, grave accent
í	11101101	237	ED	355	Latin small I, acute accent
î	11101110	238	EE	356	Latin small I, circumflex
ï	11101111	239	EF	357	Latin small I, diæresis/umlaut
ð	11110000	240	F0	360	Latin small Eth, Icelandic
ñ	11110001	241	F1	361	Latin small N, tilde
ò	11110010	242	F2	362	Latin small O, grave accent
ó	11110011	243	F3	363	Latin small O, acute accent
ô	11110100	244	F4	364	Latin small O, circumflex
õ	11110101	245	F5	365	Latin small O, tilde
ö	11110110	246	F6	366	Latin small O, diæresis/umlaut
÷	11110111	247	F7	367	Division sign
ø	11111000	248	F8	370	Latin small O, slash
ù	11111001	249	F9	371	Latin small U, grave accent
ú	11111010	250	FA	372	Latin small U, acute accent
û	11111011	251	FB	373	Latin small U, circumflex
ü	11111100	252	FC	374	Latin small U, diæresis/umlaut
ý	11111101	253	FD	375	Latin small Y, acute accent
þ	11111110	254	FE	376	Latin small Thorn, Icelandic
ÿ	11111111	255	FF	377	Latin small Y, diæresis/umlaut