Binary Baubles

Do computers actually speak English? Do they store information as sentences that we could understand? Does it understand English? Spanish? No. Deep down, a computer is translating every piece of information that it gets into its own simply processed language called binary.

Computers transmit and store information by encoding it into combinations of digits with only two choices per spot. Most people think of those choices as zeros and ones (like in the movie "The Matrix"). In reality, information can be encoded many ways. Hard Disk Drives use a combination of magnetic positives and magnetic negatives. CDs and DVDs use laser light that either reflects or does not reflect back. Other storage devices may use other options, but the method is still binary. Now that the need for binary is clear, it's time to practice encoding simple data, like letters.

Character	Binary Code	Character	Binary Code	Character	Binary Code	Character	Binary Code	Character	Binary Code
A	01000001	Q	01010001	g	01100111	w	01110111	-	00101101
B	01000010	R	01010010	h	01101000	x	01111000	.	00101110
C	01000011	S	01010011	i	01101001	y	01111001	/	00101111
D	01000100	T	01010100	j	01101010	z	01111010	0	00110000
E	01000101	U	01010101	k	01101011	!	00100001	1	00110001
F	01000110	V	01010110	l	01101100	"	00100010	2	00110010
G	01000111	W	01010111	m	01101101	#	00100011	3	00110011
H	01001000	X	01011000	n	01101110	$	00100100	4	00110100
I	01001001	Y	01011001	o	01101111	%	00100101	5	00110101
J	01001010	Z	01011010	p	01110000	&	00100110	6	00110110
K	01001011	a	01100001	q	01110001	'	00100111	7	00110111
L	01001100	b	01100010	r	01110010	(	00101000	8	00111000
M	01001101	c	01100011	s	01110011	)	00101001	9	00111001
N	01001110	d	01100100	t	01110100	*	00101010	?	00111111
O	01001111	e	01100101	u	01110101	+	00101011	@	01000000
P	01010000	f	01100110	v	01110110	,	00101100	_	01011111

Use the included Binary Coding worksheet to spell out your name. Choose three colors of beads. One color represents 0, the second color represents 1. The third color is used to separate the letters. In computer science, the special separating markers are called delimiters. Each character is always exactly the same size—8 bits.

String the beads representing each letter of your name on a cord or elastic to make a necklace or bracelet. Now you can show off your name in binary code.