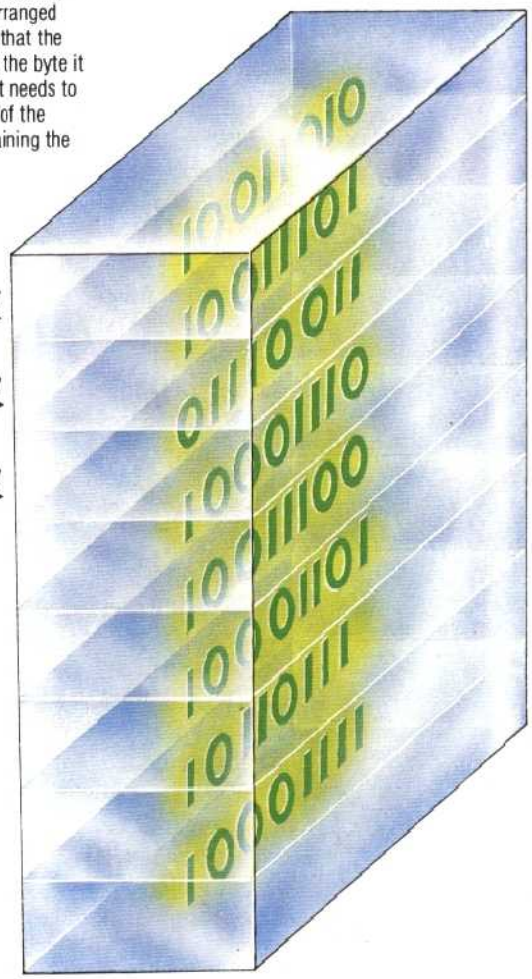
0	00000000	128	10000000
1	00000001	129	10000001
2	00000010	130	10000010
3	00000011	131	10000011
4	00000100	132	10000100
5	00000101	133	10000101
6	00000110	134	10000110
7	00000111	135	10000111
8	00001000	136	10001000
9	00001001	137	10001001
10	00001010	138	10001010
11	00001011	139	10001011
12	00001100	140	10001100
13	00001101	141	10001101
14	00001110	142	10001110
15	00001111	143	10001111
16	00010000	144	10010000
17	00010001	145	10010001
18	00010010	146	10010010
19	00010011	147	10010011
20	00010100	148	10010100
21	00010101	149	10010101
22	00010110	150	10010110
23	00010111	151	10010111
24	00011000	152	10011000
25	00011001	153	10011001
26	00011010	154	10011010
27	00011011	155	10011011
28	00011100	156	10011100
29	00011101	157	10011101
30	00011110	158	10011110
31	00011111	159	10011111
32	00100000	160	10100000
33	00100001	161	10100001
34	00100010	162	10100010
35	00100011	163	10100011
36	00100100	164	10100100
37	00100101	165	10100101
38	00100110	166	10100110
39	00100111	167	10100111
40	00101000	168	10101000
41	00101001	169	10101001
42	00101010	170	10101010
43	00101011	171	10101011
44	00101100	172	10101100
45	00101101	173	10101101
46	00101110	174	10101110
47	00101111	175	10101111
48	00110000	176	10110000
49	00110001	177	10110001
50	00110010	178	10110010
51	00110011	179	10110011
52	00110100	180	10110100
53	00110101	181	10110101
54	00110110	182	10110110
55	00110111	183	10110111
56	00111000	184	10111000
57	00111001	185	10111001
58	00111010	186	10111010
59	00111011	187	10111011
60	00111100	188	10111100
61	00111101	189	10111101
62	00111110	190	10111110
63	00111111	191	10111111
64	01000000	192	11000000
65	01000001	193	11000001
66	01000010	194	11000010
67	01000011	195	11000011
68	01000100	196	11000100
69	01000101	197	11000101
70	01000110	198	11000110
71	01000111	199	11000111
72	01001000	200	11001000
73	01001001	201	11001001
74	01001010	202	11001010
75	01001011	203	11001011
76	01001100	204	11001100
77	01001101	205	11001101
78	01001110	206	11001110
79	01001111	207	11001111
80	01010000	208	11010000
81	01010001	209	11010001
82	01010010	210	11010010
83	01010011	211	11010011
84	01010100	212	11010100
85	01010101	213	11010101
86	01010110	214	11010110
87	01010111	215	11010111
88	01011000	216	11011000
89	01011001	217	11011001
90	01011010	218	11011010
91	01011011	219	11011011
92	01011100	220	11011100
93	01011101	221	11011101
94	01011110	222	11011110
95	01011111	223	11011111
96	01100000	224	11100000
97	01100001	225	11100001
98	01100010	226	11100010
99	01100011	227	11100011
100	01100100	228	11100100
101	01100101	229	11100101
102	01100110	230	11100110
103	01100111	231	11100111
104	01101000	232	11101000
105	01101001	233	11101001
106	01101010	234	11101010
107	01101011	235	11101011
108	01101100	236	11101100
109	01101101	237	11101101
110	01101110	238	11101110
111	01101111	239	11101111
112	01110000	240	11110000
113	01110001	241	11110001
114	01110010	242	11110010
115	01110011	243	11110011
116	01110100	244	11110100
117	01110101	245	11110101
118	01110110	246	11110110
119	01110111	247	11110111
120	01111000	248	11111000
121	01111001	249	11111001
122	01111010	250	11111010
123	01111011	251	11111011
124	01111100	252	11111100
125	01111101	253	11111101
126	01111110	254	11111110
127	01111111	255	11111111

Bytes In Memory

Bytes are groups of eight binary digits (bits). Each byte is used by the computer to store numbers which can range from 0 to 255. Each byte is stored in separate memory 'cells' which are arranged systematically so that the computer can find the byte it needs. To do this it needs to know the location of the memory box containing the byte



TONY LODGE

count, but only from zero to one.

A board with two holes can show four different states, or count from 0 to 3. Both holes can be empty; the right hole can have a peg; the left hole can have a peg or both holes can have pegs. The bottom of the picture shows a board with eight holes. There are 256 possible permutations of pegs and holes and these are shown in the table using ones to represent pegs and zeros to represent holes.

Such a group of eight binary digits (bits) is called a byte. A single byte can therefore represent 256 different states (it can count from 0 to 255).

When we say a computer 'stores' a byte, we mean that a number (ranging from 0 to 255) is kept in the computer's memory, to be used when required. Each byte has its own 'box' and these 'boxes' one arranged in sequence (the picture above shows them stacked one on top of the other). When the computer needs to retrieve a number from a memory box, it simply needs to know in which box the byte is stored.

All the numbers from 0 to 255 can be represented using unique combinations of ones and zeros (table on left). Bits are stored and used by computers in groups of eight. Eight bits together are called a byte