ERRORS IN HACKER'S DELIGHT
Second Edition, Second and Third Printings

P. 1, 5th line up from bottom: the two formulas $x = y = -2^{31}$ and $x + y = -2^{32}$ should have light-face type (as I show here).

—Mike Collins

P. 45 line 5: Add a few words so that it reads "if y is the maximum negative number and x is not."

—Lawrence Ryan

P. 47 line 12: "... 11 instructions and six cycles" should be "... 11 instructions and five cycles" (i.e., change "six" to "five").

—Lawrence Ryan

P. 50, 7th line up from the bottom: This long formula needs more parentheses. It should be:

$$f(x) = (((x \ll (31-n_1)) \overset{s}{\gg} 31)\&(a-b)) + (((x \ll (31-n_2)) \overset{s}{\gg} 31)\&(c-a)) + b$$

—Lawrence Ryan

P. 62 line 19: "loops forever for $x \geq 2^{31}$" should be "... $x > 2^{31}$."

—Lawrence Ryan

P. 74 line 3: "first two inequalities" should be "first three inequalities".

—Lawrence Ryan

P. 74 line 19: "valid and it reduces" should be "valid and it may reduce".

—Lawrence Ryan

P. 75 lines 5 and 8 of the paragraph that starts "Now let us consider": The expressions $c \mid d$ should both be $b \mid d$.

—Lawrence Ryan

P. 88, add to the end of the first paragraph: "The third executable line must be changed to `x = (x & 0x0F0F0F0F) + ((x >> 4) & 0x0F0F0F0F);` and the `3F` in the last line must be changed to `7F`."

Note to A-W compositor: If this correction cannot be squeezed into page 88, then just let it go. But if it helps, the sentence "(In fact, three words can be combined in this way.)" can be deleted. If it still won't fit, you can delete, from the begin-

ning of the paragraph, the parenthetical expression, "(if your computer does not have the *population count* instruction)".

—Lawrence Ryan

P. 88, second line of last paragraph, change "larger population count" to "larger (or same) population count".

—Lawrence Ryan

P. 100, line 6: The ")" near the end of the line should be a "}".

—Lawrence Ryan

P. 101, first line of second paragraph: The "5 + ..." should be "6 + ..."
And third line of fourth paragraph, "... takes 11" should be "... takes 12".

—Lawrence Ryan

P. 106, last line: The "... $- 2^{30} + 1$ ..." should be "... $- 2^{30} - 1$ ..." (change + to −).

—Lawrence Ryan

P. 115 line 7: $\log_2(\Lambda) + 1$, should be $\lfloor \log_2(\Lambda) \rfloor + 1$, .

—Lawrence Ryan

P. 141 line 2: Replace the period at the end of this sentence with "of 2^n bits for odd n, and the bit reversal of the outer perfect shuffle for even n."

—Lawrence Ryan

P. 142 line 3: Change "2" to "16", so that it reads "... size 16×3 bytes.". Also on this page, in Figure 7-5, change $m = 2$ to $m = 16$.

—Lawrence Ryan

P. 145 lines 1 and 2: "`char A[8]`" should be "`char* A`" and "`char B[8]`" should be "`char* B`".

—Lawrence Ryan

P. 149 line 14: "0..8" should be "8..15".

—Lawrence Ryan

P. 155 lines 4 and 5: "m1" should be "mv0" and "m4" should be "mv4".

—Lawrence Ryan

P. 156 last line should be "`x = ((x ^ t) & mv) ^ x;`".

—Lawrence Ryan

P. 186, Figure 9-1, 5th line from the end of the program, change "n" to "n-1". Between the 3rd and 4th lines from the end of the program, insert the line

```
    r[n-1] = un[n-1] >> s;
```

The last seven lines should then be:

```
  if (r != NULL) {
     for (i = 0; i < n-1; i++)
        r[i] = (un[i] >> s) | (un[i+1] << (16-s));
     r[n-1] = un[n-1] >> s;
  }
  return 0;
}
```

—HSW

P. 220, first of the three equations in the middle of the page: the "3" should have an exponent of 2, so that it reads "$2^{15} + 1 = 3^2 \cdot 11 \cdot 331$".

—Jasper Neumann

P. 224 line 7, the number 715,827,833 should be 715,827,883.

—Colin Bartlett

P. 228, penultimate line, change "of three" to "of two".

—Paolo Bonzini

P. 233, Figure 10-2: This program has a bug in that it gives an incorrect result for $d = 0x80000001$ (only). To fix it, change line 6 ("   int p;") to

```
   int p, gt = 0;
```

Insert after line 17 ("p = p + 1;"), the line

```
if (q1 >= 0x80000000) gt = 1;  // Means q1 > delta.
```

preceded by six spaces. Change the 6th line from the bottom ("   } while (p < 64 &&") to

```
   } while (gt == 0 &&
```

—Colin Bartlett

P. 240, Figure 10-4: Replace line 2 of this program ("nbits = ...") with the following two lines:

```
   nc = ((nmax + 1)//d)*d - 1
   nbits = len(bin(nmax)) - 2
```

—Colin Bartlett

P. 329, first line below Figure 14-7, "see exercise 1" should be "see exercise 2".

—Lawrence Ryan

P. 342, middle, in the assignment to `p0`, change the "`^`" symbol to "`&`" (so that it is similar to the following line).

—Paolo Bonzini

P. 407, Answer no. 2, line 9: Change x to n, so that it reads "... depends upon whether or not $n = 0$, ...".

—Lawrence Ryan

P. 411, answer to question 11, 2nd line: $c(n)$ should be c_n.

—Lawrence Ryan

P. 416, line 6: Change "it is an odd multiple of 2." to "it is a multiple of 10 and an odd multiple of 2."

Same page, line 9: This line should be:

  "`if (r > 5 || (r == 5 && (y & 2) != 0))`"

Same page, line 14 should be:

  "`if (r == 0 && (y & 2) != 0)`"

—Lawrence Ryan

P. 417, line 11, "`nlz(c & d)`" should be "`nlz(b & d)`".

Same page, line 19: "The maximum value is $c \mid d$" should be "... $b \mid d$".

—Lawrence Ryan

P. 477, entry for [Reiser], append the following:

An earlier source of this technique, described in considerable detail, is Crocker, Steve. "A Note on Padding." In *Network Working Group Request for Comments* (RFC) #70, 15 October 1970, UCLA. Available on the web.

—Neil Viberg

Non-substantive errors (typographical etc.)

P. 17, Table 2-1: The vertical line between the first and second columns should be lighter (like most of the others), and that between the second and third columns should be heavier.

—Jasper Neumann

P. 113, last paragraph: "The sum of the rows are" should be "The sums ...".

—Lawrence Ryan

P. 387 formula at line 6: The limits a and b are too close to the integral sign.

—Norman Koch

P. 409, line 9: "instuctions" should be "instructions".

—Lawrence Ryan