Real World Algorithms: A Beginners Guide
Errata to the Second Printing

Last updated 17 February 2018

This document lists the changes that should be made to *Real World Algorithms* to correct mistakes that made their way to printing, to improve infelicities that the author spotted too late, or update the material with something that the author did not know at the time of writing the book.

There are three different kinds of changes noted here. In all of them the date that they became known to the author is given at the first line of each item. The name of the person who suggested the change is also given at the end of each change.

▶ **Page 1**, line 1 ──────────────────────────────── 1 Jan 1

These are technical or typographical errors.

Page 1, line 1 ──────────────────────────────── 1 Jan 1

These as changes that improve the book, even if they do not correct an error. They include small rewordings, or material that became known to the author after the book was published.

Page 1, line 1 ──────────────────────────────── 1 Jan 1

These are minor fixes that although they do not make a big difference they do hurt the author. Some of them might strain the reader's eye to see where the improvement is exactly.

▶ **Page 20**, line −1 ─────────────────────────────── 14 Feb 2018

we cannot execute line 7 more than n times. ⤳ we cannot execute line 7 more than $n - 1$ times; note that the last day is pushed, but not popped. (K. Marinakos)

▶ **Page 32**, line −2 ─────────────────────────────── 16 Feb 2018

2.5×10^{25}, or 7 septillion ⤳ 2.5×10^{19}, or 25 quintillion (K. Marinakos)

▶ **Page 32**, line 8 ─────────────────────────────── 16 Feb 2018
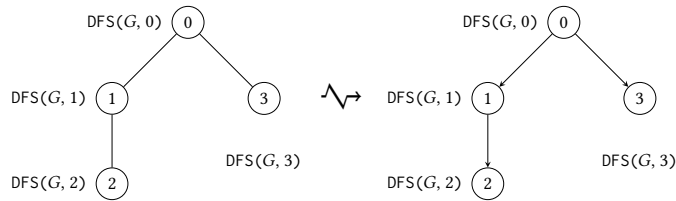
In an adjacency matrix, vertices are represented by row and column indices, and vertices are represented by the contents of the matrix. ⤳ In an adjacency matrix, the vertices are represented by row and column indices, and the edges are represented by the contents of the matrix. (K. Marinakos)

▶ **Page 39**, line −5 ─────────────────────────────── 16 Feb 2018

Similarly, if $|E|$ is the number of edges in the graph, ⤳ Similarly, if $|E|$ is the number of edges in the graph, counting undirected edges twice, (K. Marinakos)

▶ **Page 44**, figure 2.21 ─────────────────────────────── 17 Feb 2018

Add arrows so that the graph is directed:

(K. Marinakos)

▶ **Page 49**, algorithm 2.3, line 7 ─────────────────────────────── 16 Feb 2018

$c \leftarrow \mathsf{Pop}(s)$ ⤳ $c \leftarrow \mathsf{Pop}(S)$ (K. Marinakos)

▶ **Page 50**, lines 2–4 ─────────────────────────────── 16 Feb 2018

Line 2 is executed $|V|$ times, once per each vertex. Then $\mathsf{DFS}(G, node)$ is called exactly once per edge, in line 4, that is, $|E|$ times. ⤳ Line 4 is executed $|V|$ times, once per each vertex. The condition in line 3 is called exactly once for each edge of every adjacency list, that is, $|E|$ times.

▶ **Page 54**, line 5 ─────────────────────────────── 16 Feb 2018

we only node ⤳ we only note (K. Marinakos)

▶ **Page 49**, line 4 ———————————————————————— 17 Feb 2018

the same as algorithm 2.4 ⤳ the same as algorithm 2.3 (K. Marinakos)

▶ **Page 55**, figure 2.28a ———————————————————— 17 Feb 2018

rename nodes 7 and 8 to 6 and 7 respectively (K. Marinakos)

▶ **Page 61**, line 7 ———————————————————————— 26 Feb 2018

with number in different number systems ⤳ with numbers in different number systems (K. Marinakos)

▶ **Page 61**, lines 17–18 ———————————————————— 26 Feb 2018

The binary number 1010 has value 14 ⤳ The binary number 1110 has value 14 (K. Marinakos)

▶ **Page 69**, line −13 ———————————————————————— 26 Feb 2018

Each element of the priority tree ⤳ Each element of the priority queue (K. Marinakos)

▶ **Page 72**, line −2 ———————————————————————— 26 Feb 2018

larger than its parent ⤳ lighter than its parent (K. Marinakos)

▶ **Page 73**, line −1 ———————————————————————— 26 Feb 2018

larger than its children ⤳ smaller than its children (K. Marinakos)