Fundamentals of Discrete Structures
Lyons, Papadakis-Kanaris, Weiss and Werschulz

Errata: 2012 Edition

Corrections as of May 13, 2019

- page xix: first line of Acknowledgements: "as well was" should be "as well as".

- page 7, second line of Remark: change "as compared that that of" to "as compared to that of".

- page 31, before sentence "We can, therefore, use ..." insert "Note that F is the union of these disjoint sets. Also, change "We can, therefore" to "Therefore, we can use...".

- page 37, 1.6.11: Change "$|X| = 0$" to "the cardinality of a set".

- page 39, 1.6.16(e): Delete the second occurence of "the" in this exercise. Also, change "the same?" to "the same as in part (d)?"

- page 40, Problem 1.6.20: Change "4 stated they had neither hamsters or guinea pigs" to "and 4 stated they had neither hamsters nor guinea pigs".

- page 42, last line: Change "$|L \cup P \cap C|$" to "$|(L \cup P) \cap C|$".

- page 51, line 9: Change "would quite complicated" to "would be quite complicated".

- page 58, second line of Solution: Change $i + 2$ to $i + 3$.

- page 62, last line: Omit "we".

- page 66, first line after (2.11): Change "Looking the equation" to "Looking at the equation".

- page 69: replace "form" with "branch" twice in the Basis Step and twice in the Induction Step.

- page 94: In the truth table at the bottom of the page, the entries in the column for $p \vee q$ should be T T T F T T T F.

- page 97: The proof that $(A \cap B)' = A' \cup B'$ should read as follows:

$$\begin{aligned} x \in (A \cap B)' &\iff x \notin A \cap B \iff (x \in A \cap B)' \\ &\iff (x \in A \wedge x \in B)' \iff (x \in A)' \vee (x \in B)' \\ &\iff x \notin A \vee x \notin B \iff x \in A' \vee x \in B' \\ &\iff x \in A' \cup B', \end{aligned}$$

- page 100, Example 3.11: The first display line should be

- page 102, line -8: Change to read "(Remember that $p^2 = 2q^2$.)"

- page 104, proof of Example 3.19: (2) should read "$c \Rightarrow d'$." The remainder of the proof should read as follows:

  From (1) and (3), along with the transitive law, we have $b \Rightarrow d$. Applying the contrapositive law to (2), we know that $(d')' \Rightarrow c$; since the double negation law tells us that $(d')' \equiv d$, we may rewrite $(d')' \Rightarrow c$ as $d \Rightarrow c$. Since $b \Rightarrow d$ and $d \Rightarrow c'$, the transitive law tells us that $b \Rightarrow c'$.

- page 129: Anna's birthday should be "05/19/1989".

- page 142, line 3 of Section 4.3: Change "RDMS" to "RDBMS".

- page 144, line 3: Change "25" to "26".

- page 144, Example 4.33: In line 4, change c_i to cl_i, and in the last line of the example, change c_j to cl_j.

- page 145, insert the following at the end of Example 4.34:

    Note that this solution actually gives too many friend suggestions:
    - Since Stan is a friend of Kyle and Kyle is a friend of Stan, it will add a row (Stan, Stan) to the *FriendSuggestions* table.
    - Since Manny is a friend of Grace and Grace is a friend of Chrissy, it will add a row (Manny, Chrissy) to the *FriendSuggestions* table, even though Many and Chrissy are already friends.

    Given the choice between a fairly simple query that gives slightly inaccurate results, and a more complicated that gives the exact answer, we chose the former.

- page 146, Exercise 4.4.8(b): Change "-3 " to 3, so that "$\{(2,2),(1,-3),(-3,-3),(1,1),(-3,1)\}$" now reads "$\{(2,2),(1,3),(3,3),(1,1),(3,1)\}$".

- page 151, line 1: Change "certain" to "special".

- page 154, bottom table: Change "$d^*(z)$" to "$d^{**}(z)$".

- page 155, first sentence after Example 5.2: Change "can" to "can be represented".

- page 156, last sentence: Change to "What distinguishes functions from relations?".

- page 191, Problem 5.9.2: "range" should be "codomain".

- page 160, line 3: Change "4 and 5" to "(d) and (e)".

- page 160, bullet list: Change "part 4" to "part (d)" and "part 5" to "part (e)".

- page 162, line 5: Change "In Section 5.3" to "In Section 5.2".

- page 162, line 6: Change "reflexivity" to "transitivity".

- page 165, Example 5.11: Change "8,175,133" to "1,601,948".

- page 167, second paragraph in Example 5.12: Change "$h(x) = y^2 + 3y$" to "$h(x) = y^2 + 32y$".

- page 169, sixth displayed equation: Change "$g(4) = 4 + 5$" to "$g(4) = 4 + 1 = 5$".

- page 173, last sentence in Warning: Change "Be careful to pay attention the..." to "Be careful to pay attention to the...".

- page 189, line 3: Change "$g \circ h \circ f$" to "$h \circ g \circ f$".

- page 250, Exercise 7.2.14: The parts to this problem should be done in the following order: (d), (a), (c), (b), (e). This will make the problem easier to solve.

- page 306, towards middle of page: change

$$M^{[\ell]} = \overbrace{M \wedge M \wedge \cdots \wedge M}^{\ell \text{ times}}$$

    to

$$M^{[\ell]} = \overbrace{M * M * \cdots * M}^{\ell \text{ times}}$$

- page 318: Anna's birthday should be "05/19/1989".

- page 322, index entry for Cartesian product: add page 322.