

*Fundamentals of Discrete Structures*  
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Errata: 2012 Edition

Corrections as of April 27, 2018

- 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 occurrence 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 Manny 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 318: Anna’s birthday should be “05/19/1989”.
- page 322, index entry for Cartesian product: add page 322.