Errata and Updates For Database System Concepts, 6th Edition Silberschatz, Korth, and Sudarshan

Last updated: May 10, 2017

We list below errors, clarifications, and recent updates. NOTE: Some of the errata described here have been corrected in the 2nd and 3rd printing of the US edition of the book; these are tagged as "(1st pr.)". If you own an international edition, note that these editions follow a different correction schedule, so your copy may still have errata that have been fixed in the US edition. Check your copy for the errata noted here, and ignore those that have been fixed in your copy.

Errata for Part 1: Relational Databases, Chapters 1 to 6

CHAPTER 2

1. Page 47. Figure 2.8: Delete the line between *section.time_slot_id* and *time_slot.time_slot_id*. Although there is a referential integrity constraint from *section.time_slot_id* to *time_slot.time_slot_id* it is not a foreign key constraint since *time_slot.time_slot_id* is not a primary key of *time_slot*. The schema diagram notation does not currently allow us to specify referential integrity constraints that are not foreign key constraints.

2. (1st pr.) Page 54, Exercise 2.9: Add the following to the first line: "Assume that branch names and customer names uniquely identify branches and customers, but loans and accounts can be associated with more than one customer."

CHAPTER 3

1. (1st pr.) Page 61, at the end of the 3rd para (just before the bullet for "not null"): add the sentence: "(Some databases such as MySQL require an alternative syntax, of the form "**foreign key** (*dept _name*) **references** *department*(*dept_name*)", where the referenced attributes in the referenced table are explicitly listed.)"
   (Reported by: Cam Hong Tran)

2. (1st pr.) Page 61: " **values** (10211, 'Smith', 'Biology', 66000);"
   $\rightarrow$
   " **values** ('10211', 'Smith', 'Biology', 66000);"
   In general, char/varchar values should be enclosed in single quotes.
   (Reported by: Randall Johnson)

3. (1st pr.) Page 69, Figure 3.6: The department name and salary of all instructors except Einstein are wrong (and have been copied incorrectly from Einstein's values). The correct values can be found in the *instructor* relation shown in Figure 2.1, Page 40, which should be: (Comp. Sci., 65000) for Srinivasan, (Finance, 90000) for Wu, and (Music, 40000) for Mozart; the same value should occur in all rows for that instructor.

Also, the ID of the instructor of FIN-201 has been shown as 10101 in multiple lines in the table, in the column preceding FIN-201; the ID should be 12121.
(Reported by: Celine Kuttler)

4. (1st *pr.*) Page 73, Footnote 3: Replace the current footnote which states "As a consequence, it is not possible to use attribute names containing the original relation names, for instance *instructor.name* or *teaches.course_id*, to refer to attributes in the natural join result; we can, however, use attribute names such as *name* and *course_id*, without the relation names."
→

As a consequence, it may not be possible in some systems to use attribute names containing the original relation names, for instance *instructor.name* or *teaches.course_id*, to refer to attributes in the natural join result. While some systems allow it, others don't, and some allow it for all attributes except the join attributes (that is, those that appear in both relation schemas. We can, however, use attribute names such as *name* and *course_id*, without the relation names.

5. (1st *pr.*) Page 80, paragraph after first query: "... Fall 2010 ..." → "... Spring 2010 ..."

6. Page 81, first line: "... Fall 2010 ..." → "... Spring 2010 ..."
(Reported by: Jameel Al-Aziz)

7. (1st *pr.*) Page 85, para 2: "The average balance is ..." → "The average salary is ...".
(Reported by: Daniel Vieira)

8. (1st *pr.*) Page 85, para 3: "58.000" → "58,000".
(Reported by: Fu Luke)

9. (1st *pr.*) Page 88, Figure 3.17: in the second column header: "*avg(avg_salary)*" → "*avg_salary*"

10. (1st *pr.*) Page 94, top of page: in "**select distinct** *S.ID, S.name*", the use of **distinct** is not required, although it is not incorrect.
(Reported by: Jonghoon Chun)

11. (1st *pr.*) Page 95, In the query at the top of the page:
"**where** $1 <= ($**select count**$(R.course\_id)$ ..."
→
"**where** $1 >= ($**select count**$(R.course\_id)$ ..."
(Reported by: Duc Tran)

12. (1st *pr.*) Page 96, Para 3:
"However, some SQL implementations, notably Oracle, do not support renaming of the result relation in the **from** clause."
→
"Note that some SQL implementations require that each subquery result relation be given a name, even if the name is never referenced; Oracle allows a subquery result relation to be given a name (with the keyword **as** omitted) but does not allow renaming of attributes of the relation."

Oracle does allow renaming of result relations (although it does not require it), but as in other kinds of renaming in Oracle, the keyword **as** should be omitted.

13. Page 99, last para, line 3: "all tuples that fail the test" → "all tuples that pass the test".
(Reported by: Pranav Jain)

14. (1st *pr.*) Page 101, third SQL query:
select *student*
from *student*

→

2

> **select** *ID*
> **from** *student*

15. (1st *pr.*) Page 105, Practice Exercise 3.1, Parts e, f, g: "Autumn" → "Fall"

16. (1st *pr.*) Page 109, Exercise 3.12, Part b: "Autumn" → "Fall"

CHAPTER 4

1. (1st *pr.*) Page 126, Figure 4.7: In the last row of the *department* relation, change 'Painter' to 'Taylor'.

2. (1st *pr.*) Page 130, Section 4.4.3: "...form a candidate key..." → "...form a superkey...", and "However, candidate key attributes..." → "However attributes declared as unique..."
   (Reported by: Cheqing Jin)

3. (1st *pr.*) Page 131, para 5: After the 1st sentence of this paragraph (which begins "By default, in SQL, ..."), add the sentence:

   > For example, the foreign key declaration for the *course* relation can be specified as:
   >
   > **foreign key** (*dept_name*) **references** *department*(*dept_name*)

4. (1st *pr.*) Page 148, Para 1: "*branch_name* of the *branch* relation" → "*dept_name* of the *department* relation"
   (Reported by: Daniel Sadoc Menasche)

5. (1st *pr.*) Page 155, Question 4.11: "Music" → "Taylor". (We need a building name, not a department name here.)

CHAPTER 5

1. (1st *pr.*) Page 163, Para 1 (Java expression):

   > " ' + dept_name + " ', " ' balance + ")"

   →

   > " '" + dept_name + " ', " + salary + ")"

   (Reported by: Daniel Sadoc Menasche)

2. (1st *pr.*) Page 167, Figure 5.4, in the printf statement: "depthname" → "deptname"

3. (1st *pr.*) Page 174, first query of Section 5.2.1: "**from** *instructor*" → "**from** *department*".

4. (1st *pr.*) Page 175, Figure 5.6, Line 1: "*instructors_of*" → " *instructor_of*"

5. (1st *pr.*) Page 184, Figure 5.10: "**update on** *takes*" → "**update of** *takes*"

6. (1st *pr.*) Page 185, Figure 5.11, first line: "amount" → "level".

7. (1st *pr.*) Page 189, Figure 5.13: Change

   > **insert into** *temp*
   >   (**select** *prereq.course_id*
   >   **from** *new_c_prereq, prereq*
   >   **where** *new_c_prereq.course_id = prereq.prereq_id*

$\rightarrow$

$$\textbf{insert into } temp$$
$$(\textbf{select } prereq.prereq\_id$$
$$\textbf{from } new\_c\_prereq,\ prereq$$
$$\textbf{where } new\_c\_prereq.course\_id = prereq.course\_id$$

8. (1st pr.) Page 191 Fig 5.15:
   (a) Change all 5 occurrences of $c\_prereq \rightarrow rec\_prereq$;
   (b) "**select** $prereq.prereq\_id$, $c\_prereq.course\_id$"
   $\rightarrow$
   "**select** $rec\_prereq.course\_id$, $prereq.prereq\_id$"

9. (1st pr.) Page 194, Section 5.5.1: "**select** *ID*, *GPA*)" $\rightarrow$ "**select** *ID*, *GPA*"

10. (1st pr.) Page 200, Figure 5.18, in the cell for "white" "dress": "8" $\rightarrow$ "5"

11. (1st pr.) Page 212, Exercise 5.8:
    "for each owner of the account, check if the owner has any remaining accounts, and if she does not, delete her from the *depositor* relation."
    $\rightarrow$
    "for each depositor of the account, check if the depositor has any remaining accounts, and if she does not, delete her from the *customer* relation."

CHAPTER 6

1. (1st pr.) Page 224, Figure 6.8: All corrections noted for Figure 3.6 (Page 69) above should be applied to Figure 6.8 also.
   (Reported by: David Chiu)

2. (1st pr.) Page 230, para before last para, line 4: (*ID*, *name*, *dept_name*, *salary*, *course_id*) $\rightarrow$ (*ID*, *name*, *dept_name*, *salary*, *course_id*, *sec_id*, *semester*, *year*).
   (Reported by: Matt Cremeens)

3. (1st pr.) Page 235, Section 6.1.4.1: Replace $\div$ by / in two occurrences in this section (this is to avoid confusion with the division operator of relational algebra).

4. Page 239:

$$_{A_1,\ A_2}\mathcal{G}_{\text{sum}(A_3)}(\Pi_{A_1,\ A_2,...,\ A_n}(\sigma_P\,(r_1\ \times\ r_2\ \times\ \cdots\ \times\ r_m)))$$

$\rightarrow$

$$_{A_1,\ A_2}\mathcal{G}_{\text{sum}(A_3)}(\sigma_P\,(r_1\ \times\ r_2\ \times\ \cdots\ \times\ r_m))$$

(Reported by: Eric Gossett)

5. (1st pr.) Page 241, in both tuple relational calculus queries on this page:
   "$s[year] = 2009\}$" $\rightarrow$ "$s[year] = 2009$" and "$t[course\_id])\}$"$\rightarrow$ "$t[course\_id])$"

6. (1st pr.) Page 242, in the tuple relation calculus query at the top of the page:
   "$s[year] = 2009\}$" $\rightarrow$ "$s[year] = 2009$", and
   "$t[course\_id])\}$" $\rightarrow$ "$t[course\_id])$".

7. (1st *pr.*) Page 244, Section 6.2.4, Line 2: "σ, and ρ, ..." $\rightarrow$ "σ, Π, and ρ, ..."
   (Reported by: Ravindra Guravannavar)

8. Page 246:
   $\{< n > \mid \exists\, i, d, s\ (< i, n, d, s > \in\ instructor\ \wedge\ s\ >\ 80000)\}$
   $\rightarrow$
   $\{< i > \mid \exists\, n, d, s\ (< i, n, d, s > \in\ instructor\ \wedge\ s\ >\ 80000)\}$
   (Reported by: Ravindra Guravannavar)

9. (1st *pr.*) Page 246, 3rd bullet:
   $\{< n, c > \mid \exists\ i, a\ (< i, c, a, s, y > \in\ teaches\ ...$
   $\rightarrow$
   $\{< n, c > \mid \exists\ i, a, se, y\ (< i, c, a, se, y > \in\ teaches\ ...$

10. (1st *pr.*) Page 246, 4th bullet:

$$\{< c > \mid \exists\, s\ (< c, a, s, y, b, r, t > \in\ section$$
$$\wedge s\ =\ \text{``Fall''} \wedge y\ =\ \text{``2009''})$$
$$\vee \exists\, u\ (< c, a, s, y, b, r, t > \in\ section$$
$$\wedge s\ =\ \text{``Spring''} \wedge y\ =\ \text{``2010''})\}$$

$\rightarrow$

$$\{< c > \mid \exists\, a, s, y, b, r, t\ (< c, a, s, y, b, r, t > \in\ section$$
$$\wedge s\ =\ \text{``Fall''} \wedge y\ =\ \text{``2009''})$$
$$\vee \exists\, a, s, y, b, r, t\ (< c, a, s, y, b, r, t > \in\ section$$
$$\wedge s\ =\ \text{``Spring''} \wedge y\ =\ \text{``2010''})\}$$

11. (1st *pr.*) Page 246, bottom of page:

$$\{< i > \mid \exists\, n,\ d, t\ (< i, n, d, t > \in\ student)\ \wedge$$
$$\forall\, x, y, z, w\ (< x, y, z, w > \in\ course\ \wedge\qquad z\ =\ \text{``Biology''} \Rightarrow$$
$$\exists\, a, b\ (< a, x, b, r, p, q > \in\ takes\ \wedge\ < c, a > \in\ > depositor))\}$$

$\rightarrow$

$$\{< i > \mid \exists\, n,\ d, tc\ (< i, n, d, tc > \in\ student)\ \wedge$$
$$\forall\, ci, ti, dn, cr\ (< ci, ti, dn, cr > \in\ course\ \wedge\ dn\ =\ \text{``Biology''} \Rightarrow$$
$$\exists\, si, se, y, g\ (< i, ci, si, se, y, g > \in\ takes\ ))\}$$