Homework #4
(100 points)

Due Date: November 9th, 2017, at the beginning of class

Directions: Write complete, legible answers to each of the following questions. A problem identified as “M.N(x,y)” references parts x and y of exercise N from chapter M of the Connolly/Begg text, 6th edition. Show your work, when appropriate, for possible partial credit. This is not a group project; do your own work. We will post our solutions 24 hours after the due date (remember, you can use one late day on homeworks, so we can’t give solutions on the due date).

On the due date, by the start of class, hand-in a printout of your solutions and submit your electronically-formatted PDF version of your solutions (the turnin folder is cs460h4). If you need to submit your solutions within the 24-hour late window, place your printout in one of our mailboxes in CS 713 as soon as you are able to do so. Solutions submitted more than 24 hours after the due date and time will not be accepted.

1. (5 points) 5.12 (d) (just Relational Algebra)
2. (5 points) 5.26 (again, just R.A.)
3. (5 points) 5.28 (again again, just R.A.)
4. (5 points) 6.4
5. (5 points) 6.10
6. (5 points) 6.14
7. (5 points) 6.20
8. (5 points) 6.25
9. (5 points) 7.7
10. (10 points) 7.11 (b,d,f) Only create Room and Booking.
11. (5 points) 7.14
12. (5 points) 8.5
13. (5 points) 8.7 Just discuss BEFORE and AFTER.
14. (5 points) 8.8
15. (5 points) 14.4
16. (5 points) 14.6

Non-book questions:

17. (5 points) Consider this schema: R(A, B, C, D, E, F, G). Also consider the FDs B → ACDE and E → FG. Compute both B+ and G+.

18. (10 points) Given the set of FDs F = {A → D, AC → B, C → D, A → BC}, find a minimal cover of F.