2433 Database Systems
Status: Please Read

2018-05-01

Contents

Introduction

The days on which the class meets are listed below, as specified in the NYU's academic calendar.

Unless stated otherwise, the references are to the units and the slides. Each slide is numbered at the bottom right in the format Unit/SlideNumber.

Please read and make sure that you understand all the material that has been listed as you being responsible for. Please make sure that you understand the material covered before the following class.

Additional minor tasks could be assigned in this document too.

1 January 24

Planned: Unit 0, Unit 1 (possibly all), Unit 2 (possibly started)

We covered

- Unit 0. You are responsible for all.
- Unit 1. You are not formally responsible for anything. But you should know at least what the 3-tier and 4-tier architectures are.
- Unit 2: 1–16. You are responsible for all.

2 January 31

Planned: Continue with Unit 2.

We covered

- Unit 2: 17–131. You are responsible for all.

3 February 7

Planned: Finish Unit 2 and start (and make good progress in) Unit 3.

We covered:

- Unit 2: 131–160. You are responsible for all.
- Unit 3: 1–60, 62–63.
- SQL Power Architect, overview and some examples. More examples posted. You need to know how to use it.

Elaboration on *partial functions*. Informally speaking, we are given two sets X and Y. A partial function f assigns an element in Y to each $x \in X'$ where $X' \subseteq X$. If $X' = X$ then the partial function f is *total*.

The term *composite primary key*. This is a primary key that contains more than one attribute. (Thanks to the student who brought it up.)

Slides 66 and 68 in Unit 2 were fixed. (Thanks to the student who pointed out the mistake in slide 66.)

Definition 1 (You may ignore this formal definition)**.** Let X and Y be sets. We know that a relation R is a subset of the cartesian product $X \times Y$. Relation R is a *partial function* (from X into Y) if and only if the following holds

Whenever (x_1, y_1) and (x_2, y_2) are in R and $x_1 = x_2$ then $y_1 = y_2$.

If for every $x \in X$ there is a $y \in Y$ such that $(x, y) \in R$ then R is *total*.

4 February 14

Planned: Finish Unit 3 and start Unit 4.

Generally, it is important to first understand the small simple examples before delving into a big case study. This was true for Unit 2 and is true for Unit 3.

We covered:

- Unit 3: 64–138, 149–151. You are responsible for all.
- Unit 3: 168–174. This is important, but you are not responsible for this now. We will go over this concept again when we talk about SQL DDL in Unit 6.
- Unit 3: 139–147, 158–167, 174. I advise you to go over these as they include additional clarifications.
- Unit 4: 1–38. You are responsible for all.

ExtrasForUnit04 has been uploaded (to Extras in Resources).

5 February 21

Planned: Finish Unit 4 and start Unit 5.

- Unit 4: 39–60. You are responsible for all
- Unit 5: 1–32. We did not go through all the slides but you are supposed to know them, other than just to know about UNION, MINUS, INTERSECT (without worrying about duplicates)
- Unit 5: 73–142. You are responsible for all.

I have uploaded slightly modified versions of Units 4 and 5:

- Unit 4: a slide was inserted showing the query for (grandparent, grandchild)
- Unit 5: slides 13 and 79 changed

6 February 28

Planned: Finish Unit 5 and start Unit 6.

Unit 5: 35–50, 143–155, 157–179. You are responsible for the homework and the exams.

Unit 5: 180–217. Homework only.

Unit 5: 233-243. You are not responsible for this but I highly recommend that you go over and understand this.

7 March 7

Start and maybe finish Unit 6. Maybe start Unit 7.

NYU closed. No class.

8 March 21

Start and maybe finish Unit 6. Maybe start Unit 7.

NYU closed. No class.

9 March 28

Midterm

10 April 4

Start and maybe finish Unit 6. Maybe start Unit 7.

Handed back the midterm. Please return the midterm. You may keep your cheat sheat.

Unit 6: 17–39, 49–98. Unit 7: 1–36.

11 April 11

Maybe (unlikely) finish Unit 7. Maybe (unlikely) start Unit 8

Unit 7: 37, 38 (assume for now that there are no NULLs), 39–95, 96–98 (you are not responsible for this, but it is worth knowing), 99–127, 133–135.

12 April 18

Finish Unit 7. Start Unit 8

Unit 7: 128–132. Go over this overview first. 136–202.

Unit 8: 1–14. (Nothing in the final.)

13 April 25

Finish Unit 7. Material after Unit 7 will not be on the final. Finish Unit 8 (only a part will be covered). Perhaps cover a part of Unit 9.

Unit 7: 128–132, Unit 8: 15–22, 24–44, 46, 61–74, 87–99, 102–104. (Nothing for the final.)

Unit 9: 1–20, 28–57 (Nothing for the final.)

14 May 2

Unit 8: Some additional observations. Unit 9: some part. Unit 10: some part.

15 May 9

Final