

New York University
Computer Science Department
Courant Institute of Mathematical Sciences

Course Title: Database Systems
Instructor: Jean-Claude Franchitti

Course Number: csci-ga.2433-001
Session: 10

Assignment #10 – Optional (Extra Credit)

I. Due

Thursday December 22, 2022 by Midnight ET.

II. Objectives

1. Learn Data Distribution and Distributed Transaction Management.

III. References

1. Slides and handouts posted on the course Web site

IV. Software Required

1. Microsoft Word.
2. Win Zip as necessary.

V. Assignment

1. Question 1: Work out an example of distributed query processing.
2. Question 2: Discuss and contrast the following locking approaches: primary site 2PL, primary copy 2PL, and distributed 2PL.
3. Question 3: What is meant by eventual consistency and BASE transactions?
4. Question 4: What is meant by multi-version concurrency control?
5. Question 5: What is quorum-based consistency? Illustrate with an example.
6. Question 6: Discuss the most important architectural variants of distributed databases.
7. Save the file as a Word document.
8. Name the file “**firstname_lastname_hw_10.docx**” (e.g., “john_doe_hw_10.docx”).

9. Submit your assignment solution via Brightspace by the due date. You may submit an electronic copy as well via email

Use the following naming convention in the subject line of the eMail:

“DB - firstname lastname - homework 10”

(e.g.: "DB – John Doe - homework 10").

In the case source code is submitted, include your name as a comment at the top of each file

(Note: all files submitted should include your name).

VI. Deliverables

1. Electronic:

Your assignment file must be submitted via Brightspace. The file must be created and sent by the beginning of class. After the class period, the homework is late. The email clock is the official clock.

2. Cover page and other formatting requirements:

The cover page supplied on the next page must be the first page of your assignment file.

Fill in the blank area for each field.

NOTE:

The sequence of the electronic submission is:

- 1. Cover sheet**
- 2. Assignment Answer Sheet(s)**

VII. Sample Cover Sheet:

Name _____ Date: _____
(last name, first name)

NYU ID: _____

Course Section #: _____

Assignment 10

Assignment Layout (25%)

- o Assignment is neatly assembled on 8 1/2 by 11 layout.
- o Cover page with your name (last name first followed by a comma then first name), date and NYU ID with a signed statement of independent effort is included.
- o Answers to questions 1-6 in part V above are correct.
- o File name is correct.

Answers to Individual Questions:

(100 points total, all questions weighted equally)

- o Assumptions provided when required.

Total in points (100 points total): _____

Professor's Comments: