Lab 1

Joshua Evans | CS 276 | Due 2024-04-14

# Part 1 - Textbook Questions:

The SQL file used to answer the following questions can be found here:

<https://github.com/TheJoshuaEvans/LCC-CS276/blob/main/coursework/queries/module_03/Lab2Pt1.sql>

*Suppose that you are a manufacturer of product ABC, which is composed of parts A, B, and C. Each time a new product ABC is created, it must be added to the product inventory using the PROD\_QOH in a table named PRODUCT, Also, each time the product is created, the parts inventory, using PART\_QOH in a table named PART, must be reduced by one each of parts A, B, and C*

## Section A

*How many database requests can you identify for an inventory update for both PRODUCT and PART?*

**2.** One for the update of PROD\_QOH, and one more for the PART\_QOH of each part. This is assuming there is no validation that there are enough parts since it is not noted in the prompt. Of course, these two requests will do many things behind the scenes…

## Section B

*Using SQL, write each database request you identified in Problem 1a.*

UPDATE Product SET PROD\_QOH = PROD\_QOH + 1 WHERE PROD\_CODE = 'ABC';

UPDATE Part SET PART\_QOH = PART\_QOH - 1 WHERE PART\_CODE IN ('A', 'B', 'C');

## Section C

*Write the complete transaction(s).*

BEGIN TRANSACTION;

UPDATE Product SET PROD\_QOH = PROD\_QOH + 1

WHERE PROD\_CODE = 'ABC';

UPDATE Part SET PART\_QOH = PART\_QOH - 1

WHERE PART\_CODE IN ('A', 'B', 'C');

COMMIT TRANSACTION;

## Section D

*Write the transaction log, using Table 10.1 as your template.*



## Section E

*Using the transaction log you created in Problem 1d, trace its use in database recovery.*

Since there are no checkpoints in the transaction, the recovery process is pretty simple. After recovering from a crash, the system will identify that at least TRL ID 1353, The COMMIT operation, is missing (indicating that the transaction failed to complete before the unexpected shutdown), then work backwards and set all the attributes back to their “BEFORE VALUE”. The process ends once TRL 1337 is hit – the START operation.

# Part 2 – Create and Modify a Database

The SQL script file associated with the following screenshots can be found here:

<https://github.com/TheJoshuaEvans/LCC-CS276/blob/main/coursework/queries/module_03/Lab2Pt2.sql>

## Section 1

A screenshot of a computer program

Description automatically generated

## Section 2

A screenshot of a computer

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## Section 3

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## Section 4

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## Section 5

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