INFT2101 – Assignment #2

- Required/Applicable Software:
  - Microsoft Word
  - Assignment #2 Template File

- Submissions:
  - ***COMPLETE & SUBMIT INDIVIDUALLY – This is NOT a group assignment. For this assignment everyone must determine the solution themselves.***

What You Need to Do:

Suppose you are a manufacturer of product ABC, which is composed of parts A, B, and C. Each time a new product is created, it must be added to the product inventory, using the PROD_QOH in a table named PRODUCT. And each time the product ABC 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. The sample database contents are shown in Table 1 below.

Table 1 – Products & Parts Table

Table name: **PRODUCT**

PROD_CODE	PROD_QOH
ABC	1,205

Table name: **PART**

PART_CODE	PART_QOH
A	567
B	98
C	549

Given that information, answer the following questions.

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

2. Using SQL, write the complete set of transactions you identified in Q1.

3. Write the transaction log, using Table 2 as your template and the scenario described below.

Scenario: We assume that product 'ABC' has a PROD_QOH = 23 at the start of the transaction and that the transaction is representing the addition of 1 new product. We also assume that PART components "A", "B" and "C" have a PROD_QOH equal to 56, 12, and 45 respectively.

Table 2

TRL ID	TRX NUM	PREV PTR	NEXT PTR	OPERATION	TABLE	ROW ID	ATTRIBUTE	BEFORE VALUE	AFTER VALUE
1	1A3	NULL	2						
2	1A3	1	3						
3	1A3	2	4						
4	1A3	3	5						
5	1A3	4	6						
6	1A3	5	NULL						

4. Using the transaction log you created in Step d, trace its use in database recovery.

Begin with the last trl_id (trl_id 6) for the transaction (trx_num 1A3) and work backward using the prev_ptr to identify the next step to undo moving from the end of the transaction back to the beginning.

Trl_ID 6:
Trl_ID 5:
Trl_ID 4:
Trl_ID 3:
Trl_ID 2:
Trl_ID 1:

Grading Scheme (36):

Question 1 (4 marks):

- A correct answer.

Question 2 (18 marks):

- 2 marks for correct use of BEGIN & COMMIT.
- 2 marks per effectively updated field.

Question 3 (12 marks):

- 2 marks per correctly completed row.

Question 4 (12 marks):

- 2 marks per correctly described transaction to roll back.