The University of New South Wales
COMP9315 DBMS Implementation
21T1 Final Exam

[Instructions] [PostgreSQL] [C]
[Q1] [Q2] [Q3] [Q4] [Q5] [Q6] [Q7] **[Q8]**

Question 8 (6 marks)

Consider the following four transactions and their read/write sets:

Tx	Read Set	Write Set
T_1	{A,B}	{A,C}
T_2	{B}	{D}
T_3	{B}	{D,E}
T_4	{A,D}	{A,C}

Consider now the following partial schedule for these transactions implemented under an *optimistic concurrency control* scheme:

```
    +    +    +    +    +    +    +    +    +    +    +    +    +    +

T₁:     S              V                        F
T₂:          S    V              F
T₃:                    S              V              F
T₄:                             S              V         F

    +    +    +    +    +    +    +    +    +    +    +    +    +
```

Note that the schedule only displays the steps that are critical to optimistic concurrency control:

- S = start of transaction
- V = validation check for transaction
- F = end of transaction

Using the above schedule describe what happens during the validation for each transaction, and what is the outcome of the validation check. Note that some of the read/write operations in the schedule may not actually occur if the corresponding transaction is rolled back at the validation check.

Show all working.

Instructions:

- Type your answer to this question into the file called `q8.txt`
- Submit via: **give cs9315 exam_q8 q8.txt**
  or via: Webcms3 > exams > Final Exam > Q8 submission > Make Submission

End of Question