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Unit Code: FIT3171

Applied Class No: A01

Comments for your marker:

(a)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **TIME** | **TRANS** | **ACTION** | **A** | **B** | **C** | **D** |
| **0** | **T1** | **UPDATE A** | X(T1) |  |  |  |
| **1** | **T1** | **UPDATE B** |  | X(T1) |  |  |
| **2** | **T2** | **READ C** |  |  | S(T2) |  |
| **3** | **T2** | **READ D** |  |  |  | S(T2) |
| **4** | **T3** | **UPDATE A** | T3 wait T1 |  |  |  |
| **5** | **T2** | **UPDATE C** |  |  | X(T2) |  |
| **6** | **T1** | **ROLLBACK** | X(T3) |  |  |  |
| **7** | **T3** | **UPDATE C** |  |  | T3 wait T2 |  |
| **8** | **T2** | **UPDATE B** |  | X(T2) |  |  |
| **9** | **T2** | **UPDATE A** | T2 wait T3 |  |  |  |

* Does a deadlock exist in this transaction sequence?

Yes, a deadlock exists in this transaction sequence.

* Explain why you came to this conclusion.

A picture containing diagram, line, text, screenshot

Description automatically generated

At time 7, we could observe that T3 is waiting for T2. At time 9, we could also observe that T2 is waiting for T3. When there are two transactions waiting for each other, this occurrence is known as a deadlock. Hence, from the transaction sequence above, there exists a deadlock.

(b)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TRL ID** | **TRX NUM** | **PREV PTR** | **NEXT PTR** | **OPERATION** | **TABLE** | **ROW ID** | **ATTRIBUTE** | **BEFORE VALUE** | **AFTER VALUE** |
| 101 | 601 | Null | 102 | START | \*\*\*\* Start Transaction |  |  |  |  |
| 102 | 601 | 102 | 103 | UPDATE | PRODUCT | ABC | PROD\_QOH | 1205 | 1206 |
| 103 | 601 | 103 | 104 | UPDATE | PART | A | PART\_QOH | 567 | 566 |
| 104 | 601 | 104 | 105 | UPDATE | PART | B | PART\_QOH | 98 | 97 |
| 105 | 601 | 105 | 106 | UPDATE | PART | C | PART\_QOH | 549 | 548 |
| 106 | 601 | 106 | Null | COMMIT | \*\*\*\* End of Transaction |  |  |  |  |

…. add extra rows as needed