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Unit Code: FIT9132

Applied Class No: A03

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** |  | T2 wait T1 |  |  |
| **9** | **T2** | **UPDATE A** | T2 wait T3 |  |  |  |

* Does a deadlock exist in this transaction sequence?
  + **Yes, a deadlock exists.**
* Explain why you came to this conclusion.
  + **This is because at Time 7, T3 has to wait for T2’s update of C to be committed (i.e. update began at Time 5). However at Time 9, T2 has to wait for T3’s update of A to be committed (i.e. update began at Time 6) hence a deadlock exists in this transaction sequence**.

(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 | 101 | 103 | UPDATE | PRODUCT | ABC | PROD\_QOH | 1205 | 1206 |
| 103 | 601 | 102 | 104 | UPDATE | PART | A | PART\_QOH | 567 | 566 |
| 104 | 601 | 103 | 105 | UPDATE | PART | B | PART\_QOH | 98 | 97 |
| 105 | 601 | 104 | 106 | UPDATE | PART | C | PART\_QOH | 549 | 548 |
| 106 | 601 | 105 | NULL | COMMIT | \*\*\*\* End of transaction |  |  |  |  |

…. add extra rows as needed