Database Questions and Answers – ARIES

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This set of Database Multiple Choice Questions & Answers (MCQs) focuses on “ARIES”.

1. ARIES uses a _____ to identify log records, and stores it in database pages.
a) Log sequence number
b) Log number
c) Lock number
d) Sequence

View Answer

Answer: b
Explanation: LSN is used to identify which operations have been applied to a database page.

2. ARIES supports _____ operations, which are physical in that the affected page is physically identified, but can be logical within the page.
a) Physiological redo
b) Physiological undo
c) Logical redo
d) Logical undo

View Answer

Answer: a
Explanation: The deletion of a record from a page may result in many other records in the page being shifted, if a slotted page structure is used.

3. _____ is used to minimize unnecessary redos during recovery.
a) Dirty page table
b) Page table
c) Dirty redo
d) All of the mentioned

View Answer

Answer: a
Explanation: Dirty pages are those that have been updated in memory, and the disk version is not up-to-date.

4. _____ scheme that records only information about dirty pages and associated information and does not even require of writing dirty pages to disk.
a) Fuzzy logic
b) Checkpoints
c) Fuzzy-checkpoint
d) Logical checkpoint

View Answer

Answer: c
Explanation: It flushes dirty pages in the background, continuously, instead of writing them during checkpoints.

5. Whenever an update operation occurs on a page, the operation stores the LSN of its log record in the _____ field of the page.
a) LSN
b) ReadLSN
c) PageLSN
d) RedoLSN

View Answer

Answer: c
Explanation: Each page maintains an identifier called the PageLSN.

6. There are special redo-only log records generated during transaction rollback, called _____ in ARIES.
a) Compensation log records
b) Read log records
c) Page log records
d) Redo log records

View Answer

Answer: a
Explanation: These serve the same purpose as the redo-only log records in our earlier recovery

scheme.

7. The _____ contains a list of pages that have been updated in the database buffer.
a) Dirty page table
b) Page table
c) Dirty redo
d) All of the mentioned

View Answer

Answer: a
Explanation: Dirty pages are those that have been updated in memory, and the disk version is not up-to-date.

8. _____ determines which transactions to undo, which pages were dirty at the time of the crash, and the LSN from which the redo pass should start.
a) Analysis pass
b) Redo pass
c) Undo pass
d) None of the mentioned

View Answer

Answer: a
Explanation: The analysis pass finds the last complete checkpoint log record, and reads in the DirtyPageTable from this record.

9. _____ starts from a position determined during analysis, and performs a redo, repeating history, to bring the database to a state it was in before the crash.
a) Analysis pass
b) Redo pass
c) Undo pass
d) None of the mentioned

View Answer

Answer: b
Explanation: The redo pass repeats history by replaying every action that is not already reflected in the page on disk.

10. _____ rolls back all transactions that were incomplete at the time of crash.
a) Analysis pass
b) Redo pass
c) Undo pass
d) None of the mentioned

View Answer

Answer: c
Explanation: It performs a single backward scan of the log, undoing all transactions in undo-list.

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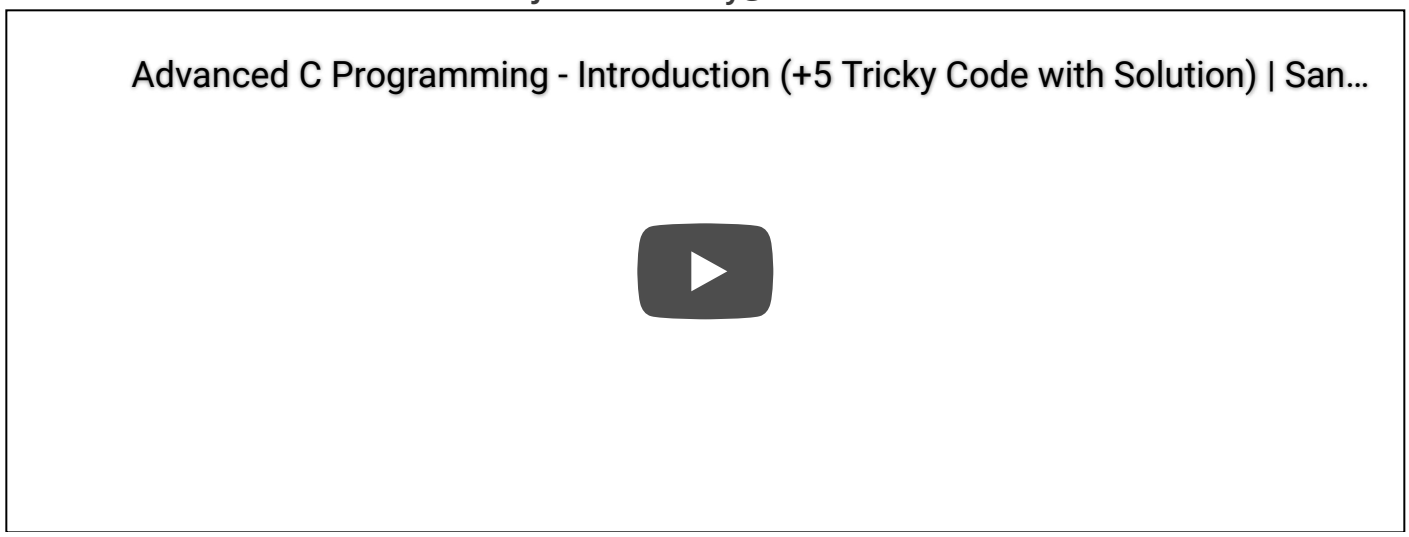

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