Task Change List

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Task 1

BasicBufferMgr.java :

- Refactored chooseUnpinnedBuffer method was to implement the gClock replacement algorithm
- Implemented incrementClockIndex() method, which is used to safely increment the clock index.
- Refactored constructor to accept an int to be used for the number of rotations

Startup.java:

- Refactored startup() method to attempt to parse an int from the command line. If it could not parse an int, our program uses 5 as the i value.

SimpleDB.java:
- Refactored the init() and initFileLogAndBufferMgr() method to use gclock int that was passed in from the command line.

BufferMgr.java:

- Refactored constructor to accept an int to be used for the number of rotations

Buffer.java:

- Got a reference count attribute that is set to 5 when the buffer is pinned, and is decremented when the BasicBufferMgr's clock index goes over it.

Task 2

BasicBufferMgr.java:

- Added instance variable bufferPoolMap

- Added int variable numBuffers
- Changed default constructor to initialize/instantiate new variables
- Refactored flush(), pin(), unpin(), pinNew(), methods to use map instead of array.
- Refactored chooseUnpinnedBuffer() to use map along with array
- Refactored findExistingBuffer() by returning the Buffer based on the Block and removing the need to incremental search through an array of buffers.
- Implemented the printBufferPoolDetails() method

Task 3

Buffer.java:

- Added saveBlock() to copy the contents of the buffer to a file of blocks(save.log)
- Added restoreBlock() to copy the contents of the saved blocks(save.log) to the buffer

UpdateLogRecord.java:

- Class newly created
- writeToLog(): Shows contents in the log
- undo(): undoes the transaction

LogRecord.java:

- Added constant for UPDATE

LogRecordIterator.java:

- Added case classes to handle updateLogRecord cases.

RecoveryMgr.java:

- Updated setString: now returns the updateLogRecord()
- Updated setInt: now returns the updateLogRecord()
- Added writeUpdate: calls buffer.saveblock to save contents of the buffer to recovery file 'save.log'