LockManager API

LockManager()
The LockManager internally stores all locks as part of a hash table on the pgIds. The data value of this hash table is implemented as a linked list on the transactionIds (as well as the type of lock) with a lock on the hash value pgId.

int msg <- lock(pgId[], transactionId, exclusivity flag)
int msg <- lock(relationId, transactionId, exclusivity flag)
The two functions are identical except for their input; the relationId is converted internally into a pgId[]. They return a message that contains the status of the lock request, once it is processed. This function will block until the request is processed. The exclusivity flag specifies whether the page(s) require an exclusive lock to signify write operations on the page(s) are desired by the current transactionId.

int msg <- unlock(transactionId)
Returns a message that contains the status of the unlock request, once it is processed. When the transaction enters the shrinking phase, locks can only be released, and no new locks can be acquired. The shrinking phase is usually one of the last things to happen in a transaction. Because of this, we can pass in just the transactionId of a transaction, and unlock all of its locks at once.

~LockManager()