Two-Phase Commit
February 27, 2017

Variables

transactionID -> unique identifier for a given transaction
serviceID -> unique identifier for a given service

List of services:
- > FileManager
- > BufferManager
- > QueryProcessor
- > LockManager

Types

messageType
{
    ABORT
    COMMIT
    NO
    PREPARE
    READY
    START
}

Provides an enumeration of possible message types that can be logged by the transaction manager and the log managers of each service.

Methods

status <- commitTransaction(transactionID)

Commits a transaction, given the transactionID, following the two-phase commit protocol:

- > Phase 1
  - > Adds the record <prepare T> to log
  - > Sends message to all services
  - > Services must abort or commit T

- > Phase 2
  - > If all services reply ‘READY’, COMMIT on all services
  - > else, ABORT on all services
message <- queryStatus(transactionID)

Returns a message based on the status of a transaction, given the transactionID.

status <- message(serviceID, messageType)

Sends a message to a service, given the serviceID and messageType. This message is also logged.