# ABSTRACT (English)

**ABSTRACT**

Petri Net Modelling of Concurrency Control in Distributed Database System

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The life time of transaction is divided into two stages: executing stage and committing stage. At the executing stage, transaction access data through a concurrency control, while at the committing stage, a commit protocol is executed to ensure failure atomicity. A transaction that requests a lock can be blocked by a committing transaction for a long time due to a long delay in completing the committing procedure. The potential long delay in transaction commitment makes concurrency control wait until transaction finish the committing stage. This study will modify concurrency control, the modified of concurrency control allows give the locks that are still on hold by another transaction in their completion of committing stage. In modeling the concurrency control, Petri Net is used. The simulation has show increase the commit throughput of transaction, but the issue of abort transaction has significant impact to modified concurrency control, the simulation has show increase the abort throughput of transaction.

Keywords: Distributed Database Systems, Concurrency Control, Commit Protocol, Petri Net, GSPN.