



**Lock Based Concurrency Control and Deadlock  
Detection In  
Distributed Database System**

**Dissertation**

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**By**

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**Kirtipur, Nepal**



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**LETTER OF RECOMMENDATION**

**Mr. Kamal Raj Sharma** has carried out this thesis work entitle “**Lock Based Concurrency Control and Deadlock Detection in Distributed Database System**” under my supervision and guidance. In my best knowledge this thesis successfully completed which fulfills the requirements for the aware of the Degree of Master’s in Computer Science and Information Technology, therefore I recommended for further evaluation.

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We certify that we have read this dissertation work and in our opinion it is satisfactory in the scope and quality as a dissertation as the partial fulfillment of the requirement of Master of Computer Science and Information Technology from Tribhuvan University, Nepal.

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# **Abstract**

This study examines Lock based Concurrency algorithms for distributed database system. This study includes basic Lock Manager, Strict Two-Phase Locking and Centralized Two-Phase Locking algorithms and implementation of CLPL in distributed database system where Lock Manager is centralized and Transaction Manager is distributed. Numbers of experiments are performed to evaluate the locking algorithm on the behaviors of transaction. This study also includes a distributed deadlock detection algorithm and its implementation.

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## ABBREVIATIONS

DBMS	Database Management System
2PL	Two-Phase Locking
S2PL	Strict Two-Phase Locking
C2PL	Centralized two-Phase Locking
LM	Lock Manager
TM	Transaction Manager
RM	Recovery Manager

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