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بسم الله الرحمن الرحيم

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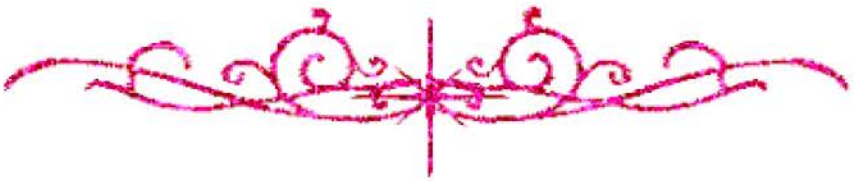
شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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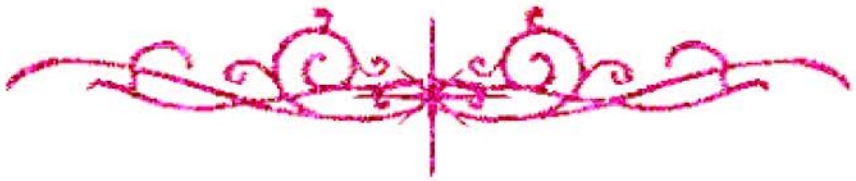
بعض الوثائق الأصلية تالفة



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بالرسالة صفحات

لم ترد بالأصل

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A NEW TYPE-SPECIFIC CONCURRENCY CONTROL ALGORITHM

FACULTY OF ENGINEERING

ALEXANDRIA UNIVERSITY

A NEW TYPE-SPECIFIC CONCURRENCY CONTROL ALGORITHM

A thesis submitted to the

Department of Computer Science and Automatic Control
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

By :

Mohamed Abd El-Hafiz Mahfouz

supervised by

Prof. Dr . Salah Selim

Dr . Alaa El-Din Mukhtar

Dr . Nagwa El-Meky

Alexandria ,Sept. 1995

We certify that we have read this thesis and that in our opinion it is fully adequate ,in scope and quality ,as a dissertation for the degree of Master of Science

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I take advantage of this occasion to recognize and acknowledge the constant support accorded to me by the staff of my department, throughout my undergraduate and graduate years.

Dedicated to my parents , my wife , my sister Mona

and my lovely son kareem

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CHAPTER III -THE MEAN VALUE MODEL FOR THE PERFORMANCE ANALYSIS OF THE STUDIED TYPE- SPECIFIC CONCURRENCY CONTROL ALGORITHMS

CHAPTER IV - SIMULATION STUDY

ABSTRACT

The work of this thesis has been mainly motivated by the advantages of using the serial dependency as a conflict relation which is weaker than the commutativity relation.. We propose a new type-specific concurrency control algorithm which uses serial dependency as a conflict relation. Unlike the pessimistic concurrency control algorithms in literature,which use a symmetric serial dependency relation, the proposed algorithm uses an asymmetric serial dependency relation. It distinguishes symmetric and asymmetric conflicts and uses this information to improve the level of concurrency .

Performance analysis of algorithms that use the serial dependency relation are not presented in the literature. Consequently , one of the objectives of this study ,was to propose an approximate analytical model to obtain bounds for the performance of the proposed algorithm relative to the related algorithms proposed in literature.

An analytical model was formulated to obtain bounds for the performance of the studied algorithms. The proposed analytical model is based on the mean value approach.

A simulation model was constructed, verified and validated. Then,the approximations of the proposed analytical model were validated by comparing the results obtained from the analytical solution to those obtained from the corresponding simulation runs .

Finally,several parametric studies were conducted using the validated analytical model to compare the performance of the proposed algorithm to the related type-specific algorithms

CHAPTER I

INTRODUCTION