بسم الله الرحمن الرحيم

HOSSAM MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HOSSAM MAGHRABY

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

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بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

Minufiya University

Faculty of Computers and Information
Department of Information Systems

An Intelligent Database System To Support Administration Operations

Thesis Submitted to
Minufiya University, in partial fulfillment of the requirements for the degree of
Master of Computers & Information
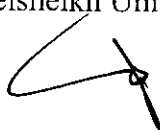
In

[Information Systems]

By

Asmaa Haroun Aly El-Sayed

Department of Information Systems
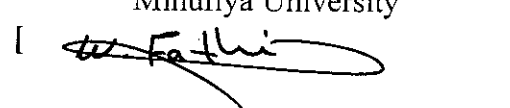Faculty of Computers and Information
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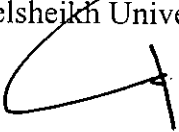
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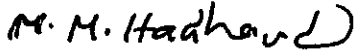Faculty of Computers and Information
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2007

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ACKNOWLEDGMENT

First of all, I thank my God for achieving this work and giving me the ability to finish it in that distinct and satisfactory form. I also thank my God for this efficient and highly qualified examiners committee.

Second, I would like to express my appreciation to my supervisor Prof. Fawzy A. Torkey for his continuous support and encouragement during the research study in this thesis. He really influenced my way of thinking and developing the research ideas adopted in this thesis. I am very grateful for his strong effort with me and his highly useful advice through out the development of this work.

I would like also to express my great and special thanks and gratefulness to my supervisor Prof. Waiel F. Abd El-Wahed for his supportive help and advice starting from the initial ideas of this thesis until finalizing this work in this form. Special acknowledgment is given to him for his continuous support during the steps of this work and his strong concern about all work details, even small ones.

Finally, I would like to give special thanks and gratefulness to my husband for his encouragement, helpness and for his continuous support during the steps of this work. This work is also dedicated to my parents, my brothers and to all my colleges in the Menoufia University because without their love, encouragement, patience and support I would not have been able to finish this work and finalize it in this format.

ABSTRACT

In this thesis an intelligent database system for computer components (IDSCCs) was developed as a powerful way of selecting compatible computer components or supporting managers decide which hardware component to invest in future.

The developed system is built according to the following two branches; the first branch is active database systems (ADBSs) which are automatic monitoring of conditions defined over the database state and the ability to take actions when the state of the underlying database changes. Active databases can recognize specific situations (internal or external) and react to them without immediate, explicit user or application request. The other branch is neural networks which is one of the AI technology branches that simulates intelligence by attempting to reproduce the types of physical connections that occur in human brains. Prediction is one of the learning tasks that apply to the use of neural networks. The integration between those two technologies active database system (ADBSs) and neural networks (prediction techniques) leads to a powerful information system that can support the decision-making process.

In these days, hardware parts, component pricing and building a PC from scratch is no longer the daunting process it once was. Every component necessary to build a PC is available on the shelf at competitive pricing. But, when planning to buy or upgrade a PC or investing in computer hardware components, two important things must be considered. First how all selected components will work together (hardware compatibility), second which computer component will be profitable for future to invest in money. Ensuring hardware compatibility or hardware profitability when building a system is a very complicated problem, which needs a great experience. This information of hardware compatibility and hardware profitability may be used as a database for the suggested intelligent database computer component system. The

planning capabilities of this system is leading to a powerful information system that can support the decision making process for building a compatible PC or choosing the right hardware components for future investments.

The main objective of the developed system is to increase the capabilities of experience that end user needs to supply in order to choose his/her own compatible PC or upgrade it or to make managers decide which hardware component he/she can invest in future to increase his/her profits. Also, it can simultaneously increase the reliability of the resulting PC choices. This can be accomplished by incorporating knowledge about the end user PC specifications and the total cost that he/she can offer for buying or upgrading his/her whole PC or only a piece of his/her PC into the intelligent computer component tool. Perhaps, the best way to enter computer specifications into the computer component tool is by selecting choices from the experienced database using a friendly user interface. Intelligent Computer component tool could function better than any single human expert in making judgment in choosing a compatible PC or helping managers to take difficult decisions in their business investments. This compatible PC is achieved without the need to have an expert person accompaniment when buying or upgrading a PC and ensuring profitable component for managers in hardware business is achieved by using all historical (training or learning) collected data for each hardware component.

The system is implemented by using VB.net and SQL Server for building its knowledge base, and neurosolutions-5 for predicting the future cost of any PC component based on historical data and the friendly user interface to support the administration operations.

Keywords: Computer hardware, system analysis, active database systems, neural networks price prediction