UNIVERSITI PUTRA MALAYSIA

DISTRIBUTED NEWSPAPER DELIVERY SYSTEM

NAEL HASSAN ALI SHEHADEH

FSKTM 2002 13
DISTRIBUTED NEWSPAPER DELIVERY SYSTEM

NAEL HASSAN ALI SHEHADEH

MASTER OF COMPUTER SCIENCE
UNIVERSITY PUTRA MALAYSIA
November 2002
DISTRIBUTED NEWSPAPER DELIVERY SYSTEM

By

NAEL HASSAN ALI SHEHADEH

MASTER OF SCIENCE
UNIVERSITI PUTRA MALAYSIA
November 2002

Thesis submitted in fulfillment of the requirements for the degree of master science in the faculty of computer science and information technology
Declaration

I hereby declare that the thesis is based on my original work except for quotations and citations, which have been duly acknowledge. I also declare that it is has not been previously or concurrently submitted for any other degree at UPM or any other institutions.

NAEL HASSAN ALI SHEHADEH
Date:
Abstract of thesis presented to the Senate of University Putra Malaysia in fulfillment of
the requirement for the degree of Master Science

DISTRIBUTED NEWSPAPER DELIVERY SYSTEM

By

NAEL HASSAN ALI SHEHADEH

FEBRUARY 2003

Chairwoman : Pn. Sazlinah Hasan
Faculty : Faculty of Computer Science and Information Technology

Abstract

This project aims to use distributed client/server environment instead of the
traditional manual registration newspaper delivery system. This system will be developed
using Microsoft Visual Basic Version 6.0 (VB6.0) and the database by SQL server
(2000) as the development platform. The output of the project will be two executable
files (the client and the server), which will use Windows 2000 operating system as a
delivery platform. The specific advantage of this system is that it has specific calculation
such as billing which saves time for the users. The proposed project will try to make the
graphical user interface (GUI) as easy and understandable possible to the users (User
Friendly).
DISTRIBUTED NEWSPAPER DELIVERY SYSTEM

Oleh

NAEL HASSAN ALI SHEHADEH

FEbruari 2003

Pengerusi : Pn. Sazlinah Hasan
Fakulti : Fakulti Sains Komputer dan Teknologi Maklumat

Abstrak

didapati dari sistem ini ialah untuk kemudahan pembayaran di mana ia mempunyai pengiraan khusus seperti dapat menjimatkan masa kepada pengguna-pengguna. Projek yang dicadangkan ini akan cuba untuk menjadikan pengantara pengguna grafik lebih mudah dan dapat difahami dengan baik oleh pengguna (Setiakawan Pengguna).
Approval Sheet

This thesis submitted to the faculty of computer science and information technology of University Putra Malaysia has been accepted as fulfillment of the requirements for the degree of master of computer science.

__________________________

Pn. Sazlinah Hasan

Lecturer

Faculty of Computer Science and Information Technology

University Putra Malaysia

Date:
Dedication

First of all I would like to dedicate my work to my parents, whom helped me through out my study and completing my project. To my brothers Ali, his wife Samar, their Children (Precious Muna, Precious Rasha, Faris, Firas, Ahmad, Majid, Abd alrhman), Mohammed, his wife Najiah, their children (Loai, Precious Rana), Hussein, the new brides (Moua, Samar), Maher, and to my beloved sisters Tahani, her husband Raheif their children (Mohammed, Precious Nuha), My sister Hanadi, her husband Wajdi, their children (Omar, Precious Bayan), My sister Amani, and her husband Samir.

I also would like to dedicate my work to my aunt in Jordan, Aisha, her husband, and their children (Mahmoud, Raheif, Ahmad, Zakaria, Yunus, Maha).

I also would like to dedicate my work to my aunt in Jordan, Faizah, her husband, and their children (Mahmoud, Sana, Hana, Raja, Tahani, Feda).

To my grandmother, grandfather, my uncles, and there families in Palestine.

Finally I dedicate my work to my devoted, committed, precious love, which stood By me all my study period, Palestine.
Acknowledgments

First of all I will thank my creator Allah S.W.T. who without him I will not be here and I will not be able to do my project.

I would like to thank my supervisor Pn. Sazlinah Hasan whom helped me a lot to finish this project, through her advices, recommendations, and valuable directions.

I would also like to thank my parents, brothers, and sisters, and my beloved precious.

I would also like to thank all Doctors in Zarqa Private University, especially Dr. Najim Badran, Dr. Emad Abu-ALrub and Dr. Mohammed Al-Haj.

I would also like to thank my friends, Sami Badran in the U.S.A., Rami Jumaa, Mohammed Deeb, Zahi Al-Ashqar, Eiyad Al-Safarini, Mohammad Al-raei, Mohammed abu-alsamen, Hassan abu-esbau, and all my friends in Jordan. Mansour and Usama in Norway, my cousin Ayub, and his wife in Britain.

I would also like to thank my friends in Malaysia Aymen Al-Adhami, Ala Al-Balooti, Amjad Qtaish, Eslam Badran, Mohammad (Wan Zamri), Arash mousafi, Ashrah
Khamas, Abu abdullah, Ziyad Abdul-Mehdi, Maen Qaddoura, Moaiad Al-Saifi, Faraj abu Elaiwa, Mohammed Kanan, Raed Alkhsawneh, Mohammed El-bashir, Bilal Zgaiba, Ahmad Zgaiba, Redwan, Sanfoor (Abdul-Nasir), Nibras, Hamarsheh, Ashraf, Raed El-soqour, Omar El-kori, Mohammed Hasan, Tariq ahmad, Ali Salih, and Ahmad Tanash and all my friends in Malaysia, especially Dr. Mohammed Salih, and all staff members in U.P.M.

I would also like to thank all my friends in Malaysia and any other country.
Table of Contents

Declaration .......................................................... ii
Abstract ..................................................................... iii
Abstrak .................................................................. iv
Approval Sheet .................................................... vi
Dedication ............................................................... vii
Acknowledgments ................................................... viii
Table of Contents ..................................................... x
References .............................................................. xi
List of Figures .......................................................... xlii
List of Tables ........................................................... xvi
List of Abbreviations ................................................ xvi
Chapter One ............................................................. 1
  Introduction.................................................................. 1
    1.1 Overview ......................................................... 1
    1.2 Problem Statement ............................................. 2
    1.3 Objectives ......................................................... 3
    1.4 Scope .................................................................. 4
    1.5 Time Frame ........................................................ 4
    1.6 Structure of thesis .............................................. 5
    1.7 Conclusion ......................................................... 6

Chapter Two ............................................................. 8
  Literature Review ..................................................... 8
    2.1 Introduction ........................................................ 8
      2.1.1 Timeline of events .......................................... 9
    2.2 Survey Findings ................................................... 17
      2.2.1 Mock-up of survey questions ............................ 17
      2.2.2 Owners Survey .............................................. 24
        2.2.2.1 Accurate ............................................... 24
        2.2.2.2 Ease of use and Productivity ...................... 25
    2.3 Programming Language ....................................... 26
      2.3.1 Visual Basic Characteristics .............................. 26
      2.3.2 SQL Server ................................................... 28
        2.3.2.1 Types of SQL Server ................................. 29
        2.3.2.2 Operating System ................................... 34
        2.3.2.3 Database Administration ............................ 36
Chapter Three
Methodology

3.1 Introduction
3.2 System Development Life Cycle (SDLC)
  3.2.1 Planning
  3.2.2 Definition
  3.2.3 Analysis
  3.2.4 Design
  3.2.5 Build
  3.2.6 Transition (testing)
  3.2.7 Warehouse

3.3 Requirements Analysis
3.4 Specifications Analysis
3.5 Conclusion

Chapter Four
System Design and Architecture

4.1 Introduction
  4.1.1 Login
  4.1.2 Add New Customer
  4.1.3 Delete Customer
  4.1.4 Modified Customer
  4.1.5 Search Customer
  4.1.6 Add new newspaper
  4.1.7 Modified newspaper
  4.1.8 Delete newspaper
  4.1.9 Add Worker
  4.1.10 Modified Worker
  4.1.11 Delete Worker

4.2 System Architecture
  4.2.1 Client/Server architectures
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1: Importance of Computerized Newspaper System</td>
<td>17</td>
</tr>
<tr>
<td>Figure 2.2: Time Saving</td>
<td>18</td>
</tr>
<tr>
<td>Figure 2.3: Debited</td>
<td>19</td>
</tr>
<tr>
<td>Figure 2.4: Amount of Newspaper is bye permonth and peryear</td>
<td>20</td>
</tr>
<tr>
<td>Figure 2.5: Security</td>
<td>21</td>
</tr>
<tr>
<td>Figure 2.6: Usability</td>
<td>22</td>
</tr>
<tr>
<td>Figure 2.7: Difficulties or Problems</td>
<td>23</td>
</tr>
<tr>
<td>Figure 2.8: Accuracy</td>
<td>24</td>
</tr>
<tr>
<td>Figure 2.9: Ease of use and Productivity</td>
<td>25</td>
</tr>
<tr>
<td>Figure 2.10: IP Address Structure</td>
<td>41</td>
</tr>
<tr>
<td>Figure 3.1: systematic process</td>
<td>47</td>
</tr>
<tr>
<td>Figure 3.2: Prototype Model</td>
<td>49</td>
</tr>
<tr>
<td>Figure 3.3: SDLC Model</td>
<td>50</td>
</tr>
<tr>
<td>Figure 4.1: Manual system</td>
<td>58</td>
</tr>
<tr>
<td>Figure 4.2: Flowchart of Login</td>
<td>59</td>
</tr>
<tr>
<td>Figure 4.3: Flowchart of Add new customer</td>
<td>60</td>
</tr>
<tr>
<td>Figure 4.4: Flowchart of Delete customer</td>
<td>61</td>
</tr>
<tr>
<td>Figure 4.5: Flowchart of Modified customer</td>
<td>62</td>
</tr>
</tbody>
</table>
Figure 4.6: Flowchart of Search customer

Figure 4.7: Flowchart of Add new newspaper

Figure 4.8: Flowchart of Modified newspaper

Figure 4.9: Flowchart of Delete newspaper

Figure 4.10: Flowchart of Add Worker

Figure 4.11: Flowchart of Modified Worker

Figure 4.12: Flowchart of Delete Worker

Figure 4.13: Client Server architecture

Figure 4.14: Database

Figure 4.15: Table of Customer Information

Figure 4.16: Table design of Customer Information

Figure 4.17: Table of Customers News

Figure 4.18: Table design of Customers News

Figure 4.19: Table of Deliver

Figure 4.20: Table design of Deliver

Figure 4.21: Table of Newspapers

Figure 4.22: Table design of Newspapers

Figure 4.23: Table of Operation for all Information (Report)

Figure 4.24: Table design of Operation for all Information (Report)

Figure 4.25: Table of Operation2 for the Customers and Workers

Figure 4.26: Table design of Operation2 for the Customers and Workers
Figure 4.27: Table Administrator for the Customer

Figure 4.28: Table Design of Administrator for the Customer

Figure 4.29: Table Administrator for the Worker

Figure 4.30: Table Design of Administrator for the Worker

Figure 4.31: Login

Figure 4.32: Main Menu
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1.1: Project Scheduled</td>
<td>5</td>
</tr>
<tr>
<td>Table 2.1: Timeline of Events</td>
<td>16</td>
</tr>
</tbody>
</table>
## List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNDS</td>
<td>Distributed Newspaper Delivery System</td>
</tr>
<tr>
<td>VB6.0</td>
<td>Visual Basic version 6.0</td>
</tr>
<tr>
<td>OOP</td>
<td>Object Oriented Programming</td>
</tr>
<tr>
<td>RAD</td>
<td>Rapid Applications Development</td>
</tr>
<tr>
<td>GUI</td>
<td>Graphical User Interface</td>
</tr>
<tr>
<td>OO</td>
<td>Object Oriented</td>
</tr>
<tr>
<td>DLL</td>
<td>Dynamic Link Library</td>
</tr>
<tr>
<td>SQL</td>
<td>Sequent Query Language</td>
</tr>
<tr>
<td>VDI</td>
<td>Virtual Device Interface</td>
</tr>
<tr>
<td>ACID</td>
<td>Atomic, Consistency, Isolation and Durability</td>
</tr>
<tr>
<td>SMP</td>
<td>Symmetric Multiprocessing</td>
</tr>
</tbody>
</table>
Windows NT  Windows Next Technology

DBAs  Database Administrators

TCP/IP  Transmission Control Protocol/Internet Protocol

IP  Internet Protocol

NIC  Network Information Center

ARB  Address Resolution Protocol

SDLC  System Development Life Cycle

SSN  Social Security Number

DB  Database

C/S  Client/Server

SRs  Service Requests

FTP  File Transfer Protocol

HTML  Hyper Text Markup Language
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDE</td>
<td>Dynamic Data Exchange</td>
</tr>
<tr>
<td>DBMS</td>
<td>Database Management System</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>ACLs</td>
<td>Access Control Lists</td>
</tr>
<tr>
<td>SIDs</td>
<td>Security Identifiers</td>
</tr>
<tr>
<td>RID</td>
<td>Relative Identifier</td>
</tr>
<tr>
<td>CORBA</td>
<td>Common Object Request Broker Architecture</td>
</tr>
<tr>
<td>DCOM</td>
<td>Distributed Component Object Model</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
</tbody>
</table>
Chapter One

Introduction

1.1 Overview

Distributed Newspaper Delivery System (DNDS) databases can be accessed by using several different types of delivery systems. The majority of databases are accessed by using online retrieval systems. Online information retrieval is a means whereby a searcher at a remote terminal can access and interrogate databases containing news or other data. The searcher accesses the database using a telecommunications link (Prytherch, 1995). The searcher’s goal is to use this information retrieval system to locate records in the database(s) that are helpful to him/her. The uses of these systems have increased drastically over the last two decades. Connect hours have increased from 1978 with 780,000 hours to 1994 with nearly 8.5 million hours. Revenues to online vendors have increased from $40 million to $1.2 billion over the same period [1].

Another way to access electronic databases is by using Local Area Network (LAN) 23% of databases are accessed by Local Area Network (LAN) [1].
Traditionally, the administration of Distributed Newspaper Delivery System is very simple and easy. A typical Distributed Newspaper Delivery System management looks like this: The customer only has to write or register their name in a book to enable them to use the facilities in the Distributed Newspaper Delivery System. The owner splay the time in and the agents only pay the services based on how long they use the facilities. The owner then records the payment in a book and only uses simple ways to calculate the business billing and their income.

The need to automate billing system in Distributed Newspaper Delivery System due to expanded agent base and as to improve efficiency has resulted in demands for computerized systems. Before this many Distributed Newspaper Delivery System operators used only manual systems as their method managing a Distributed Newspaper Delivery System. However, since their operations have becoming more complex, the need for software to handle their daily tasks becomes compelling.

1.2 Problem Statement

It is not so easy nowadays for the operator to track the customers’ ins and outs, their payment billing and also the newspaper delivery management.

In the traditional way, for the newspaper delivery the user must write his name and
the newspaper to delivery on a paper based form, and when the user finish, he or she must go back to the operator who keep the forms and again tell the operator that he delivered the newspaper. The use of paper will cause a problem cause human errors are happened.

1.3 Objectives

The main objective of this project is to build a client-server based application—using path, which newspaper delivery system manages to all the users their payment and less time.

Other objectives comes as follows:

- The product can help in managing the operations of the newspaper delivery and made the administration of this business is as easy as before.
- This product is aimed to help making the business more efficient and to provide a total newspaper management for daily newspaper operation.
- The timing and billing based on the rate specified by the operator can be made easy and accurate.
1.4 Scope

The system will cover the area of client-server architecture, underlying networking fundamentals and application design methodology. It will deal with many tables and all agents that sell the newspaper can use this system.

1.5 Time Frame

First this project made a primary study for four weeks, then in the fifth week until eightieth week gathered some data and in the same time the code writing process started. In the ninth until twelfth week, this project analyzed the data collection and started to write out the documentation and at the same time did the programming. The eleventh week until the seventeenth week from project life cycle designed the interface and program it. Finally from the week seventeenth during interface design until week twentieth the end life cycle project were finished the coding and tested the system also applied it on three personal computer two as clients and one as a server.

The time required completing this project scheduled as in the following (using Gantt Chart):