AN OBJECT-ORIENTED DATA AUTOMATION SYSTEM FOR MICROSOFT EXCEL FILES

NG LEE YEAN

DISSERTATION SUBMITTED IN FULFILMENT
OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF COMPUTER SCIENCE

FACULTY OF COMPUTER SCIENCE
AND INFORMATION TECHNOLOGY
UNIVERSITY OF MALAYA
KUALA LUMPUR

DECEMBER 2003

ABSTRACT

From our daily business transaction to annual financial reports, Microsoft Excel has been playing a very important role in preparing these reports. Many of the current business activities are documented for future references. Nowadays, Microsoft Excel is widely used for preparing accounts spreadsheets, and recording data in tabular format. The Object-Oriented Data Automation (OODA) System for Microsoft Excel Files is a system that helps Microsoft Excel users to manipulate all the data contained in Excel documents. It is developed using an Object-Oriented programming language, which is Java and running under a Java Servlet Container, Apache Tomcat web server. There are two main features provided in this system. Firstly, the OODA System for Microsoft Excel Files provides an interface for users to segregate an Excel document into several portions according to each pair of starting point and ending point provided. Users could specify words or the Excel cell name as the starting and ending of data segregation. Secondly, this system also provides system automation for combining several Excel documents without starting Microsoft Excel application in order to open each file. Users could browse any Excel documents and specify the cells which they hope to combine with. Furthermore, users could choose to combine the Excel documents horizontally or vertically. An OODA System for Microsoft Excel files is developed for the main purpose of reducing the time taken in manually cut and paste portions of an Excel document. Automation is a critical key in resolving the issue of manipulating large volume Excel documents.

ACKNOWLEDGEMENT

Highest appreciation dedicated to Mr. Chiew Thiam Kian, lecturer from the Faculty of Computer Science and Information Technology, University of Malaya. Mr. Chiew has been giving a lot of guidelines and advices in the whole process of the development of this project. Furthermore, opinions given by Mr. Chiew have improved and corrected many systems bugs and errors.

Besides that, appreciation must also be dedicated to all the system testers. They have contributed their precious time in using this system to segregate or combine their own Microsoft Excel files and filling up the User Acceptance Test forms.

Any party which has directly or indirectly given their support for the completion of this project is highly appreciated as well.

DISCLAIMER

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATION

ICT	Information Communication Technology
OODA	Object-Oriented Data Automation
COM	Component Object Model
JVM	Java Virtual Machine
GUI	Graphical User Interface
API	Application Programming Interface
TCP	Transmission Control Protocol
IP	Internet Protocol
UDP	User Datagram Protocol
JDBC	Java Database Connectivity
JNI	Java Native Interface
CORBA	Common Object Request Broker Architecture
ORB	Object Request Broker
IDL	Interface Definition Language
OLE	Object Linking Embedding
GUID	Globally Unique Identifier
DLL	Dynamic Link Library
JACOB	Java-COM Bridge
UA	Unified Approach
UML	Unified Modelling Language
OMT	Object Modelling Technique
OOBE	Object-Oriented Business Engineering
OOSE	Object-Oriented Software Engineering
OOA	Object-Oriented Analysis
RAM	Random Access Memory
DBMS	Database Management System
SQL	Structured Query Language
RDBMS	Relational Database Management System
J2SDK	Java Software Development Kit Version 2

LIST OF APPENDIXES