CUSTOM BASED ONLINE LOGISTIC MANAGEMENT SYSTEM

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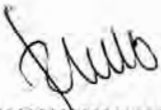
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ABSTRACT

The development of Online Logistic System is an application that uses web technologies. This system is design to managed logistic unit for small scale local production industries with functionality such as stock in, stock out, stock control, administration and reports. The main highlight for this system is its customizability which can be set based on user preference for module selection. The system is applicable to user without having to install it on a local hard drive, so it is portable and controllable, yet could be implemented anywhere. For the hardware part, barcode scanner is used to perform stock in and stock out transaction. In the field of business, this project allows user obtain detailed real-time and accurate information. The use of the barcode scanner reduces the probability of making errors and allows users to work effectively. On key aspects of the business, it enables decisions to be made much more quickly.

ABSTRAK

Perkembangan Sistem Online Logistik adalah sebuah aplikasi yang menggunakan teknologi web. Sistem in direka untuk mengelola logistik untuk pengeluaran industri kecil denga fungsi seperti stok masukan, stok keluaran, kawalan stok, administrasi dan laporan. Salah satu kelebihan utama untuk sistem ini ialah ia dapat diubah suai mengikut keperluan pengguna berdasarkan pemilihan modul. Sistem dapat dilaksanakan oleh pengguna tanpa perlu memprogram pada pemacu cekera komputer, oleh itu, sistem ini sangat mudah alih dan dapat dilaksanakan di mana saja. Untuk bahagian hardware, barcode scanner akan digunakan untuk melakukan stok dan saham di luar transaksi. Dalam bidang bisnes, projek ini memungkinkan pengguna untuk memperoleh maklumat secara real-time dan tepat. Penggunaan barcode scanner mengurangi kemungkinan membuat kesalahan dan memungkinkan pengguna untuk bekerja secara efektif.

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LIST OF ABBREVIATIONS

ADIC	-Auto ID Data Capture
ANSI	-American National Standard Institute
ASP	-Active Server Pages
BAL	- Business Application Language
BPE	- Business Process Engineering
CCD	-Charge Couple Devices
CSS	-Cascading Style Sheet
DOM	-Document Object Model
DTD	-Document Type Definitions
FTP	-File Transfer Protocol
HTML	-Hypertext Markup Language
HTTP	-Hypertext Transfer Protocol
IIS	-Internet Information Services
ISO	-International Organization for Standardization
MIME	-Multipurpose Internet Mail Extensions
NNTP	-network News Transfer Protocol
OS	-Operating System
SQL	-Structured Query Language
UOM	-Unit of Measurement

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CHAPTER 1

INTRODUCTION

Custom-based Online Logistic Management System is enterprise business application software which is specifically designed and developed for small local production industries. As the name implies, the system is suitable for all types of productions industries as the system is highly customizable. The system consists of typical production business administration such as business deals, deliveries, inventory status, and stock ordering among others. The system is user-controlled since most of the functions are flexible and easily altered without having to modify the coding. Since the data and the information are varied and not fixed, the system will operate using the data entered by the user. The system will also produce reports based on the inputs, helping user keep track of all the business deal and stock necessities.

1.1 Problem Statement

Some system still use a standalone program which need to be installed to its client workstation so that it can be use. This kind of settings is not versatile and can increase cost for software licenses per station also maintenances for the station. By using web based solution, cost per station can be reduce and an increase of productivity can be achieved as client can connect through web browser from their pc and maintenance only done to the server that hosts the system.

Not all workstation can view or check the status of an item whether it's in stock or not. Users or engineer from other department will have to call to the logistic department in order to know the status of their stock/order and this can be a hassle to the logistic department as they have to answer multiple calls periodically. So, web based solutions will eliminate this needs as they can check through their workstation.

1.2   Objectives

i.   Design and develop a web based application for logistic management system.

ii.   System will be develop using ASP server side scripting language together with SQL 2000 for the database management

iii.   To develop a system that can operate with functionality such as stock movement, stock reports, customer info and stock info.

1.3   Project Scope

The development of this project will be focus on ASP server side scripting language and SQL server 2000 as its database. All these will be done on Microsoft IIS platform. Also note that this application is intended to be use for a small scale company for logistic management.

1.4   Chapter Layout

Chapter 1 is the introduction of the system. This chapter describes the purpose and objective of the system being created. It covers the objectives, problem statement, and project scope of the system. Chapter 2 which is the Literature Reviews describes the information and knowledge related to this project. It will state

the relevancy of the project based on research regarding the project title and present an unbiased and comprehensive point of view. After that, chapter 3 describes the methodology of the system development which include all the theories, concepts and idea which are being used for this project. The content is divided into parts where each has its own preference and points. Then, Chapter 4 is the Result and Discussion. This chapter show and describe the result of the project and also discussion regarding the roadblock encountered during full system integration. Finally, chapter 5 is the conclusion of the project. This chapter describes the whole conclusion for this project with matters that relevant to the system and its possible environment.

CHAPTER II

LITERATURE REVIEW

This chapter will discuss information and knowledge related to this project. It will state the relevancy of the project based on research regarding the project title and present an unbiased and comprehensive point of view.

2.1   Business Application

Business application is an application which is commonly used for administration. Generally, it is a software application designed to manage, coordinate and also help business to increase productivity or measure productivity. Business application can be split into three categories:-

2.1.1   Small

Generally consists of home accounting software and office suites such as Microsoft Office and OpenOffice.org.

2.1.2 Medium

Has broader range of software applications, from accounting, groupware, customer relationship management, human resources software, outsourcing relationship management, loan origination software, shopping cart software, field service software, inventory management and other productivity enhancing applications.

2.1.3 Large

Include enterprise level software applications, such as those in the fields of enterprise resource planning, enterprise content management (ECM), business process management and product lifecycle management. These applications are extensive in scope, and often come with modules that either add native functions, or incorporate the functionality of third-party software programs.

Companies are continually looking for solutions to minimize their application downtime, increase employee efficiency and increase the ability of real time performance while spending less on application purchases. In order to fulfill the requirement of these companies, Web-based business application was developed.

Web-based business application is available to user anywhere, as internet has the ability to link people and places all around the world with a single click of the mouse and it can provide real-time information. It does not need any installation that will hog computer's resources and thus we do not need a high capability computer in order to maximize the performance of the application, indirectly it reduces cost.

Web-based business application often experience poor performance across the corporate network due to WAN latency, heavily loaded servers, and congested low-bandwidth connections. Thus, a high capability server is required to ensure the Web application achieve maximum performance as all the execution is performed in the server instead of clients' computer.

2.2 Market Reviews

Based on the research done, there are many type of application designed for business use. Such application such as Cimpack, Finish Goods System (FGS) and Honeywell Business Application are vital to businesses, giving employees in offices around the world access to business-critical information.

Most of these business applications are developed in software-based environment or in other words client application is needed in order to run, for example Cimpack was developed using Paradox and SQL, Finish Goods System developed using Visual Basic and Microsoft Access; and Honeywell Business Application developed using Business Application Language (BAL).

Table 2.1 System requirement and features of Cimpack and FGS.

Aspect	Cimpack	FGS
Installation	Required	Not Required
System Requirement	- Minimum 240MB Hardisk space. - Minimum 256MB RAM. - Supported in windows 98 and above. - Has been tested on Windows Vista.	- Minimum 50MB hardisk space - Minimum 128MB RAM. - Supported in windows 98 and above
Cross-Platform Compatibility	Only applicable in windows OS	
Application availability	Only applicable to those computer which installed the program	
Input device	Computer with keyboard and mouse	

Since these applications needed a client program installed in each machine being used, the cost for licenses per machines is very high thus increases the operation cost. Since the project is done by utilizing the web technologies, the operation cost can be reduce significantly as no client program needed for every machine and only a single computer is use as a server to host the application.

2.3 Web Application

Web application (Webapp) is an application that is accessed via Web over a network such as internet or intranet which is a private computer network that uses internet protocols, network connectivity to share part of an organization's information securely. Web applications are popular due to the ubiquity of a client. The ability to update and maintain Web applications without distributing and installing software on potentially thousands of clients' computers is a key reason for their popularity.

Web applications dynamically generate a series of Web documents in a standard format supported by common browsers such as HTML. Client-side scripting in a standard language such as JavaScript is commonly included to add dynamic elements to the user interface. Generally, each individual Web page is delivered to the client as a static document, but the sequence of pages can provide an interactive experience, as user input is returned through Web form elements embedded in the page markup. During the session, the Web browser interprets and displays the pages, and acts as the universal client for any Web application.

2.4 Web Content Technologies

There are a few types of Web content technology can be used to develop a Web application such as ASP, PHP, HTML and so on. ASP is chosen to be used in this project as it is sufficient to achieve the objective of this project even it is not the best among the entire technologies in terms of speed and cost. Due to the time

constraint, ASP is the best selection as the programming is simple and easy to be adopted by a beginner. In terms of security, ASP is more superior as ASP code can not be viewed from the browser.

2.5 Active Server Pages (ASP)

ASP is Microsoft's server-side script engine for dynamically-generated Web pages. ASP runs inside IIS (Internet Information Services) which comes as a free component with Windows NT 4.0 or later OS installer. Programming ASP Websites is made easier by various built-in objects. Each object corresponds to a group of frequently-used functionality useful for creating dynamic Web pages. There are 6 built-in objects such as application, ASPError, Request, Response, Server, and Session. Session, for example, is a cookie-based session object that maintains variables from page to page.

Most ASP pages are written in VBScript, but any other Active Scripting engine can be selected instead by using the @Language directive or the <script language="language" runat="server"> syntax. JavaScript is the other language that is usually available. PerlScript and others are available as third-party installable Active Scripting engines.

By using ASP as the Web content technology, a powerful server is needed instead of powerful client's computers as scripts are executed on the server. When a browser of client's computer requests an ASP file, IIS passes the request to the ASP engine. The ASP engine reads the ASP file, line by line, and executes the scripts in the file. Finally, the ASP file is returned to the browser of client's computer as plain HTML. Thus, the browser that displays the ASP file does not need to support scripting at all.

2.6 Microsoft SQL Server and Internet Information Services (IIS)

Microsoft SQL Server is a relational database management system (RDBMS) produced by Microsoft. Its primary query language is Transact-SQL, an implementation of the ANSI/ISO standard SQL used by both Microsoft and Sybase.

IIS is a set of Internet-based services for servers using Microsoft Windows. Basically, IIS is a complete Web server that makes it possible to quickly and easily deploy powerful Web sites and applications. It provide highly reliable, manageable, and scalable Web application infrastructure for Windows Server. IIS helps organizations increase Web site and application availability, improved management capabilities while lowering system administration costs.

2.7 HTML Scripting

HTML stands for Hypertext Markup Language where Hypertext is ordinary text that has been dressed up with extra features, such as formatting, images, multimedia, and links to other documents. Markup is the process of taking ordinary text and adding extra symbols. Each of the symbols used for markup in HTML is a command that tells a browser how to display the text.HTML is the predominant markup language for the creation of Web pages. It provides a means to describe the structure of text-based information in a document by denoting certain text as headings, paragraphs, lists, and so on and to supplement that text with interactive forms, embedded images, and other objects.

HTML is written in the form of labels (known as tags), within the less-than (<) and greater-than signs (>). HTML can also describe, to some degree, the appearance and semantics of a document, and can include embedded scripting language code which can affect the behavior of Web browsers and other HTML processors.HTML is also often used to refer to content of the MIME type text/html or even more broadly as a generic term for HTML whether in its XML-descended