EZY MATERIAL REQUIREMENT PLANNING SYSTEM

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This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Database Management)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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DECLARATION

I hereby declare that this project report entitled

EZY MATERIAL REQUIREMENT PLANNING SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date: _____

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(PN UMMI RABA'AH)

DEDICATION

To my beloved parents, my friends, and respected supervisor who provide help and encouragement throughout the project.

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I would like to thank Pn. Ummi Raba'ah for accepting me under supervision and provided a lot of help and earnest suggestion throughout PSM I and PSM II.

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Lastly, I would like to thank everyone who has co operated and contributed to my final year project.

ABSTRACT

Ezy Material Requirement Planning System is a system which aimed to mainly industry oriented that is it is mainly for industry use for manufacturing more product than ordinary shop. The organizations that will be using it are those involved in factory field.

The system is designated for 2 group of user: admin and staff. Different group of user has different view and level of access. The administrator is able to access to all functionalities while staff can only access to limited module.

ABSTRAK

Ezy Material Requirement Planning System merupakan satu system yang bertujuan untuk kegunaan industri seperti kilang dan industri pembuatan daripada kedai yang biasa.

Sistem ini terlibat kepada dua jenis kumpulan pengguna iaitu: Admin dan staff biasa. Kumpulan yang berlainan mempunyai akses ke kelas masing-masing. Admin dapat akses ke semua kelas manakala staff biasa hanya boleh akses ke kelas tertentu.

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FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

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CHAPTER I

INTRODUCTION

1.1 Project Background:

Currently, a small furniture factory needs a system that can manage their raw material requirement to make the work flow of the regarding factory simpler and more convenient in handling all their sales order.

The regarding factory claims that the current method they are using are lacking of effective management. They are unable to store and retrieve data effectively. The security of data is also fragile.

The proposed system is mainly industry oriented that is it is mainly for industry use for manufacturing more product than ordinary shop. The organizations that will be using it are those involved in factory field.

As for database system module, database security backup and recovering when database is corrupted, access control, role and privileges will be provided to maintain the database.

1.2 Problem Statement:

- Time consuming in handling huge amount of data

  It is time consuming in handling records that are store manually. Searching and updating the data may cause a lot of cumbersome.

- Lack of security measures and access control

  The company important information such as customer information is not kept safely. Unauthorized person may have access to the records.

- Lack of information for maintenance and services in management

  The company does not keep track of the management of produce shirt. Beside that, the management are less efficient and require improvement.

1.3 Objective:

- To automate all the management task

  This system computerizes all the management task of the information. Hence, it makes the management task more easy and convenient.

- To provide accuracy information

  System will provide accuracy information for orders or payment compare using manual file or paper work. This can avoid data lose or redundancy data occur.

- To reduces cost or budget

  Staff will not make repeating orders for stock if they can search exist of the data from the system.

- To save time and human energy

  When staffs needed to check the stock of product or material, there are no need for them to check inside the store room. They just need to key in the

material or product ID and can quickly get the result. This can lend to save human energy and save time.

- To ensure the database more secure

  Security measure such as backup, recovery, access control to maintain database confidentiality, integrity, availability.

1.4 Scope:

The scope for Ezy Material Requirement Planning System consists of front end of the system which is the interaction with user and also the background process which are the management of the database level.

1.4.1 Modules

- Login Module

  This module is to prevent unauthorized user from viewing or modifying the data in the system. It provide access to the authorize user to log in.

- Event Organizing Module

  These modules allow the staff to inserting or modifying without data loss like performs using manual ways.

- Material Requirement Plan Module

  This module manages inventory control, bill of material processing and elementary scheduling. With this, bulk purchasing can be done and raw materials can be bought in lower price.

- Database Administrator Module

  As for database system level, user will be created with specific roles and privileges so that only certain user is allowed to perform certain operation in the database.

- Backup and Recovery Module

  This module enable the system to backup the database automatically physically and logically. This is for database recovery if there is any database failure happens. Therefore, data is protected from being damage or data loss.

1.4.2 Target User

- Admin

  This system will let the admin to manage the information such as managing the service of the system and staffs information and manage the customer details and arrange the flow of the work orders according to the customer requirements. Admin will also have the rights to do backup and recovery of the database

- Staff

  This system will allow the staff to manage the work order, materials as well as the product.

1.5 Project Significance

With computerized system replacing the manual transaction process, the management process becomes much efficient. All the records are kept and store systematically without requiring many human power to manage it. Therefore, huge amount of transaction can be done in a shorter time.

Through the Ezy Material Requirement Planning System, all the record access are restricted and monitored automatically. Each user can have specific levels of access to various data types. Unauthorized record accesses and manipulation can be prevented. All the records are also kept up to date and confidential.

1.6 Expected Output

This system develops to improve the existing system in manual way which cause a lot of human resource and time require. The system makes the management task more effective since the entire managing task is computerized. The system developed should provide user friendly interface and proper guidance in system functionality. Interface plays an important role in communicating the users and the system. User friendly interface helps the user to get familiar with the system in a shorter time.

Besides that this system provides backup system that able to do backup the database. Any corruption of the files in the database can be recovered by using the latest backup database.

1.7 Conclusion

In a nutshell, this chapter stated out the problems, objectives and scope of Ezy Material Requirement Planning System. In the following chapter, we will look at the systems' methodology and findings. These two item will be discussed based on the facts in chapter one. Project schedule and milestone is developed so that the project is completed on time and other system maintenance features will be implemented to the system according to the system requirement.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In this chapter, literature review about the Ezy Material Requirement Planning System is done to research for the existing system. To do this research, a lot of work have been done like library research, logical arrangement of information, and professional writing. In addition, providing understanding about this topic, literature review also helps ensuring the intellectual context of the system and situates it within the project.

Methodology is a set of rules, method and principle for developing and operating this system. Database Life Cycle is been using in this project methodology. Therefore it is useful in the process of developing systematic and error free system.

2.2 Facts and Finding

Facts and findings are the analyst about information collected through the interview, websites, journals and other materials. In this part, the domain of the project, current existing system in the market and the technique used will be discussed.

2.2.1 Domain

The domain of the project is the Ezy Material Requirement Planning. This is due to the major features of the system covers the Ezy Material Requirement Planning process. With the computerized Ezy Material Requirement Planning system replacing the manual transaction process, the management process becomes much efficient. Besides that, the system also implements features that restrict and control user access levels, backup, recovery and etc.

2.2.2 Existing System

There are different types of company management system in the market. ShampooMe Sdn Bhd had been chosen to make comparison.

2.2.2.1 FunitureMe Sdn Bhd

FunitureMe Sdn Bhd uses an Excel-Based MRP that manages the transaction Material Requirement Plan of furniture producing. The company claims that they do not have an MRP system, or having generated scheduled dates within Excel, they are unable to upload them to their MRP system. The system acts as a repository for demand and inventory data, and will perform Material Requirements Planning (MRP) calculations. ShampooMe Sdn Bhd. System is developed for internal use. Everyone in the company with the Excel file can read the Excel sheet.

- *Bill Of Material*

Bill of Material

This is a typical structure of a single level bill of materials describing the relationship between products and components

Product	Component	Qty	Component Description
AB100	BS01	4.800	Base Shampoo
AB100	BT100	48.000	Bottle 100ml
AB100	CAPF	48.000	Flip cap
AB100	CARS	1.000	Carton small
AB100	ESA	0.048	Apple essence
AB100	LAB10	50.000	Label Apple Blossom 100ml
AB250	BS01	12.000	Base Shampoo
AB250	BT250	48.000	Bottle 250ml
AB250	CAPF	48.000	Flip cap
AB250	CARL	1.000	Carton large
AB250	ESA	0.120	Apple essence
AB250	LAB25	50.000	Label Apple Blossom 250ml
AB500	BS01	12.000	Base Shampoo
AB500	BT500	24.000	Bottle 500ml
AB500	CAPS	24.000	Screw cap

This is the Excel Sheet for the Purchase Order of Shampoo Sdn Bhd .

- Purchase Orders

Purchase Orders

This table lists the components that are on order from the suppliers, and the date they are due to be delivered.

Code	Description	Supplier	Supplier Name	Qty	Due in
BS01	Base Shampoo	AC01	Ace Chemicals	100,000	18-Mar-00
BS01	Base Shampoo	AC01	Ace Chemicals	100,000	30-Mar-00
BT100	Bottle 100ml	BP01	Best Plastics	40,000	14-Apr-00
BT250	Bottle 250ml	BP01	Best Plastics	90,000	18-Mar-00
BT250	Bottle 250ml	BP01	Best Plastics	40,000	01-Apr-00
BT250	Bottle 250ml	BP01	Best Plastics	50,000	22-Apr-00
BT500	Bottle 500ml	BP01	Best Plastics	100,000	16-Mar-00
BT500	Bottle 500ml	BP01	Best Plastics	50,000	01-Apr-00
BT500	Bottle 500ml	BP01	Best Plastics	50,000	15-Apr-00
CAPF	Flip cap	BP01	Best Plastics	200,000	16-Mar-00
CAPF	Flip cap	BP01	Best Plastics	300,000	07-Apr-00
CAPS	Screw cap	BP01	Best Plastics	100,000	17-Mar-00
CAPS	Screw cap	BP01	Best Plastics	100,000	02-Apr-00
CARL	Carton large	EC01	Eduardo Corrugates	8,000	14-Mar-00
CARL	Carton large	EC01	Eduardo Corrugates	5,000	04-Apr-00
CARS	Carton small	EC01	Eduardo Corrugates	1,000	18-Mar-00
CARS	Carton small	EC01	Eduardo Corrugates	1,000	26-Apr-00
ESA	Apple essence	CE01	Chang Essences	60	23-Mar-00
ESA	Apple essence	CE01	Chang Essences	100	06-Apr-00
ESL	Lemon essence	CE01	Chang Essences	350	03-Apr-00
LAB10	Label Apple Blossom 100ml	DP01	Dave's Printing	50,000	07-Apr-00

Microsoft Excel has automatic calculate function.

This is the Excel sheet for MRP Report that will be sent to the Purchasing Department for purchasing purpose.

- MRP Report

Components that will be required after inventory has been exhausted are listed here and compared with components on order.
Columns A to F are a PivotTable of the Allocate Inventory worksheet, and G contains a formula to calculate projected inventory of each component. Negative projected inventory indicates that orders need to be chased or placed to support scheduled production.

Get In	(All)					
				Data		Balance
Supplier Nar	Descripti	Start Dat	Product/Run	Get In	On order	
Ace Chemicals	Base Shampoo	##########	AB500/2	12,812		-12,812
		##########	FL250/1	23,520		-36,332
		18/03/2000	AB250/1	28,596		-64,928
					100,000	35,072
		##########	AB100/1	7,723		27,349
		##########	FL500/2	30,456		-3,107
		##########	AB500/3	14,808		-17,915
		##########	FL100/1	1,459		-19,374
		##########	FL250/2	23,520		-42,894
		30/03/2000	AB250/2	27,852		-70,746
					100,000	29,254
		##########	AB100/2	7,723		21,530
		##########	FL500/3	30,456		-8,926
	Base Shampoo Total			208,926	200,000	
	Bottle 100	##########	AB100/2	46,584		-46,584
		##########			40,000	-6,584

Fact-finding is an important activity in system investigation. Various kinds of techniques are used and the most popular among them are interviews, questionnaires, record reviews, case tools and also the personal observations and etc. There are several techniques been applied to the project to ease the research of the topics.

- Interview

  Interview session is conducted with the authorized person Mr. Chong Guan Long. The interview session helps a lot in gathering the user requirements, problem faces, SWOT of the manual system and etc.

- Documentation review

  Journals, professional writings, and seniors PSM (Project Sarjana Muda) were gathered from library, magazines, internet and other resources. Document review is done to get comprehensive and historical information of the project. Besides that, it also acts as a guideline to the project.

2.3 Project Methodology

A project methodology refers to the framework that is used to structure, plan, and control the whole system development process. Different project may implements different methodology due to various kinds of technical, organizational, project and team considerations. In this project, the Database Life Cycle (DBLC) is chosen to be the project methodology.

The database life cycle (DBLC) defines the stages involved in getting any type of database up and running. In fact, the DBLC never ends because database monitoring, modification, and maintenance are part of the life cycle. The Database Life Cycle (DBLC) contains six phases which are database initial study, database design, implementation and loading, testing and evaluation, operation, and maintenance and evolution.

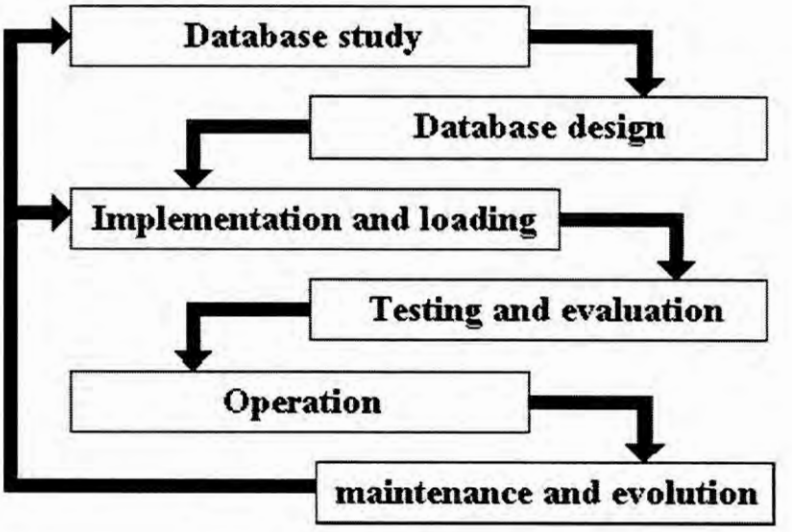

Figure: DBLC life cycle

2.3.1. Database Initial study

This is the first stage in database life cycle (DBLC). In this stage, analysis about the current system is done in detail. Usually the analyses of the database system are in two forms:

- Business Analysis

  This analysis includes business process analysis, planning, requirements gathering, conducting surveys, user interaction, and presentation. Business