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JUDUL: INTEGRATED INFORMATION SYSTEM FOR AIR-CONDITIONING
COMPANY: SALES AND SERVICES

SESI PENGAJIAN: 2007/2008

Saya NORIZAN BINTI ISMAIL
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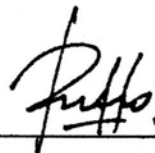
(TANDATANGAN PENULIS)

Alamat tetap:

6190-B, KAMPUNG TELUK MENARA,

21200 KUALA TERENGGANU

Tarikh: 24/06/2008



(TANDATANGAN PENYELIA)

ABDUL RAZAK BIN HUSSAIN

Nama Peyelia

Tarikh: 24-JUN-2008

CATATAN: * Tesis dimaksudkan sebagai Laporan Akhir Projek Sarjana Muda (PSM)
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**INTEGRATED INFORMATION SYSTEM FOR AIR-CONDITIONING
COMPANY: SALES AND SERVICE**

NORIZAN BINTI ISMAIL

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

**INTEGRATED INFORMATION SYSTEM FOR AIR-CONDITIONING
COMPANY: SALES AND SERVICES**

NORIZAN BINTI ISMAIL

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

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2008**

DECLARATION

I hereby declare that this project report entitled

**INTEGRATED INFORMATION SYSTEM FOR AIR-CONDITIONING
COMPANY: SALES AND SERVICES**

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

STUDENT


:



(NORIZAN BINTI ISMAIL)Date: 24/06/2008

SUPERVISOR

:



(ABDUL RAZAK BIN HUSSAIN)Date: 24-JUN-2008

DEDICATION

To my beloved parents, your love and support are my greatest inspiration.

To My friends, it is for your sacrifices, encouragement, and support.

To my lecturer, for being receptive and critical, and challenging me to be a better student.

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Last but no least, to all might have involved directly or indirectly in developing this system is much appreciated and a note of thanks from me.

ABSTRACT

Integrated Information System for Air-Conditioning Company : Sales and Services (IISAC) has been developed for K.Leong Air Cond Sdn. Bhd. (SKAC) which is located in Jalan Bukit Kecil, Kuala Terengganu. This system which can only be used by SKAC. Briefly, SKAC does not only sells air-conditioners and their accessories but also provides maintenance and the installation services to their customers. Otherwise, SKAC is also involved in numerous tenders or contracts that involve installation of air-conditioner. IISAC has been developed for SKAC in order to solve the problems that they have which is data lost because of the manual system has been used to manage the data for the company. Normally, the manual system of managing file or data is by saving them into the file cabinet which is the probability of the file or data is missing is very high. Therefore, IISAC has been developed in order to solve the problem that has been mentioned above. The approach of how to develop a system has been chosen which is the approach is *Object Oriented Analysis and Design (OOAD)*. Base approach, an analysis has been created in order to know the requirements and the problems statements of the system. The interface of IISAC has been developed based on the requirements from SKAC and has been designed using VB.Net and the Oracle 9i. Through IISAC, all the transaction such as customers, vendors, products, projects, booking and services information will be recorded and save into the system. The main focus of IISAC is the selling and services. Using IISAC, the customers that make a transaction will be saved in the system by the staff. From the staff, customers will have know the products that on sale in the company easily. The process of searching the information or data is faster and the data security is more efficient compared to previous situation. This system has been tested in a simulation environment and have showed improvement of current operation. Further the development of this system is to be able to solve the recurring problems.

ABSTRAK

Intergrated Information System for Air-Conditioning : Sales and Services (IISAC) telah dibangunkan khasnya untuk Syarikat K.Leong Air Cond Sdn.Bhd.(SKAC) yang terletak di Jalan Bukit Kecil, Kuala Terengganu. Sistem ini hanya digunakan di syarikat tersebut sahaja. Secara ringkasnya, syarikat ini bukan sahaja menjalankan aktiviti penjualan alat dan aksesari, malah menyediakan perkhidmatan penyelenggaraan serta pemasangan pendingin udara. Disamping itu, syarikat ini juga terlibat dengan projek melalui tender. IISAC diwujudkan bagi mengatasi masalah kehilangan dan pencerobohan data yang mana sebelum ini, SKAC hanya menggunakan sistem fail manual. Lazimnya melalui sistem fail, fail akan ditempatkan dalam kabinet atau rak-rak yang tertentu. Kebarangkalian untuk hilang atau di cerobohi amat tinggi. Oleh itu, IISAC dibangunkan bagi menggantikan sistem yang sedia ada. *Object Oriented Analysis and Design (OOAD)* telah dipilih sebagai metodologi untuk IISAC. Satu analisa telah dijalankan terhadap sistem semasa untuk mengenalpasti keperluan dan pernyataan masalahnya. Antaramuka bagi IISAC telah direka berdasarkan keperluan SKAC dan telah dilakarkan ke dalam VB.Net serta menggunakan pangkalan data Oracle 9i. Melalui IISAC, semua data pelanggan, pembekal, produk, projek, tempahan dan jualan serta perkhidmatan akan direkodkan ke dalam sistem. Di samping itu, fokus utama IISAC ini adalah dalam jualan dan perkhidmatan. Melalui IISAC, para pelanggan yang membeli atau memerlukan perkhidmatan akan direkodkan oleh kakitangan yang bertugas. Melalui kakitangan yang bertugas, para pelanggan dapat mengetahui produk@jenis pendingin udara yang terdapat dalam syarikat terbabit dengan mudah. Disamping itu, proses pencarian maklumat adalah lebih cepat dan keselamatan data serta maklumat adalah terjamin berbanding sebelum IISAC dibangunkan. Sejajar dengan itu, sistem ini telah diuji di persekitaran simulasi dan ia telah menunjukkan peningkatan berbanding operasi sekarang. Sistem ini diharap dapat membantu dan menyokong dalam meningkatkan prestasi sistem semasa dan mengatasi masalah yang wujud pada masa kini.

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LIST OF ABBREVIATIONS

IISAC	-	Integrated Information System for Air-Conditioning Company
SKAC	-	K.Leong Air-Cond Sdn. Bhd.
OOAD	-	Object Oriented Analysis And Design
CADE	-	Computer-Aided System Engineering
OO	-	Object Oriented
DBLC	-	Database Development Life Cycle
PSM	-	Projek Sarjana Muda
DBMS	-	Database Management System
SQL	-	Structured Query Language

CHAPTER I

INTRODUCTION

The preamble is essential for the comprehension of the entire project. Thus, this chapter discusses the project background, problem statements, objective, scope, project significance, expected output and the conclusion. This project is entitled 'Integrated Information System for Air-Conditioning Company: Sales and Services' (IISAC) that uses K.Leong Air Cond Sdn. Bhd. in Kuala Terengganu as the reference point.

The project background briefly introduces K.Leong Air Cond Sdn. Bhd., the air-conditioning customer and projects. The subsequent section problem statements, depicts the problems encountered by the company. Since the objectives correspond to the problem statements, resolutions for the predicaments are solved within the scope of the objectives listed. On the other hand, synchronized with the problem statements and objective for the system the scope plays an imperative role for the both sections as to evade any possible deviation from the foremost aspect, in addition with the related section of the expected output the character and outline of the system can be predicated excessively. For the finale of this chapter, a brief summary of the sub-chapters and the hints next activities are written.

1.1 Project Background

This system is as simulation for K.Leong Air Cond Sdn. Bhd. the company is located in Bukit Kecil, Kuala Terengganu. It was opened in year 2000 and offers a variety of services including sales, repair and installation of air-conditioner. Normally there are a few suppliers that supply the air-conditioner to the company such as LG, YORK, CARRIER, TCL, FUJI ELECTRIC and ACSON. The air-conditioner will be bought by two types of customer which are normal customer and permanent customer. This company is also actively involved with tender that is offered by public and private organizations. The current system is managed by a clerk or cashier and a manager.

1.2 Problem Statements

K.Leong Air Cond Sdn. Bhd. is currently using manual files system since 2000 information about the customers, suppliers, stocks, tenders/projects, and service account are stored in files. As undoubtedly storing data in the cabinet file can be effortlessly obtained, this has given rise to the issues of unsecured data.

Moreover with the disadvantages from the conventional method it is not an unusual case of duplicated data might be revealed from the manual written form. As with lack or none of the enforcement from primary key of the database, tedious work to be written out again for the next forms with the same information might be filled for the next forms. Thus data inconsistency is indeed occurred by using such outdated manual systems. Unlike from computerized systems, the data is stored orderly in the server with the advance database management system. While still practicing the usages of the cabinets, personnel from the various job classifications may just store the paper anywhere as they like even thought the cabinets are labeled accordingly to the subjects of the title. Subsequently, unsystematic system like this is expectedly discarded from the IISAC.

Even so without the problem by manual searching, it is logically a waste of time and unnecessary end error to look onto the details one by one from the file in the cabinets. Hard in searching is a nuisance when acquiring large quantity amount of data in an in adequate time. As for the bulky records using immense papers holding the data, it is a norm to allocate large quantity of space to consign cabinets to the area that has limited capabilities. Hence, the data might be discarded easily as the bundle of papers can be separated without difficulty from the files. Table 1.1 highlights the problem statements encountered.

Table 1.1: Problem Statements

Reasons/Problems	Description
Unsecured data	Storing the data in the file in the cabinets can be easily obtained.
Data inconsistency	Duplicate of data might be written in the manual form
Unsystematic system	Using manual system, the workers store the paper anywhere as the like.
Hard in searching	Searching manually is a waste of time as to look one by one in the files.
Bulky records	Using file cabinets to store data and hence lots of spaces needed to be allocated in the rooms.
No data keeping	The data might be discarded easily as the papers easily separated from the files
Generate Report	Difficult and take longer time to generate report.

1.3 Objectives

The objectives of developing this system are:

- a) To solve unsecured data, encryption will be implemented and login will be the additional abstract security to the system.
- b) To solve data redundancy, the software application and database application possessed the ability to eliminate data recurrence into the database.
- c) To prevent unsystematic system, the database management system (DBMS) determines the storage system file methodically.
- d) To find specific data, the index searching from the database will formulate the searching the searches more potent and swift.
- e) To prevent bulky records of files, the database does not require lots of papers to be stored in the files.
- f) To prevent any data lost (no data keeping), data recovery and data backup is significantly easier from the database application.
- g) To generate report, easy to generate report using the system.

1.4 Scope

The development of this system will cover these areas mentioned in the Table 1.2 as follows:

Table 1.2: Scope Categories

Scope Categories
Database Element Modules
IISAC Modules
Scope of the system users
Scope of tools used

1.4.1 Database Element Modules

The database element modules for the 'Integrated Information System for Air-Conditioning Company' are listed in the Table 1.3 as follows:

Table 1.3: Database Element Modules and the Brief Description

Modules	Description
Implementing complex query	Complex query increase better results of retrieving complex information from the database.
Backup and recovery	Any data from the database can be saved by backup and recovery.
Database Encryption	Database encryption prevents any data thievery from the database.

1.4.2 IISAC Modules

This is the main modules for the 'Integrated Information System for Air-Conditioning Company' apart from the database elements modules as the support to these system modules. Hence, the system modules for the IISAC are listed in the Table 1.4 as follows:

Table 1.4: System Modules and Brief Description.

Modules	Brief description
Login	Login a necessity as the abstract security to form the security system barrier tough to be breached.
Customers	Can be search, store, add, delete and update data in the table customer details. Also can make a backup.
Suppliers	Can be search, store, add, delete and update data in the table supplier details. Also can make a backup.
Product	Can be search, store, add, delete and update data in the table product details. Also can make a backup.
Tenders/projects	Can be search, store, add, delete and update data in the table tenders/projects details. Also can make a backup.
Services	Can be store, add, delete and update data in the table customer details. Also can make a backup.
Order	Can be store, add, delete and update data in the table order. Also can make a backup.

1.4.3 Scope Of The System Users

Table 1.5: Scope of the System Users and the Brief Description.

User	Brief description
Administrator	The administrator has full privileges and access to the IISAC as to maintain the system functionality.