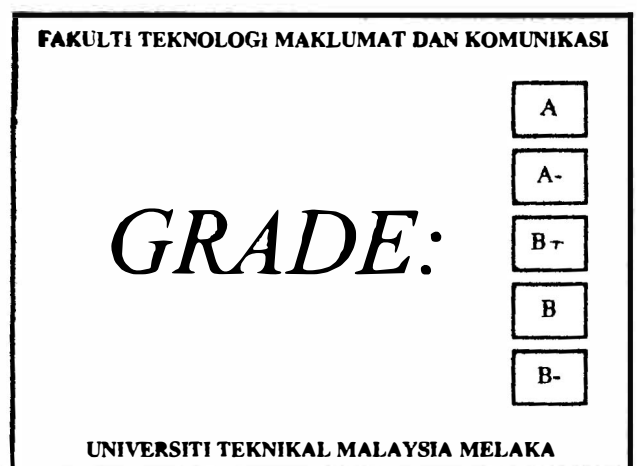


**DATA MANAGEMENT AND DATA VISUALIZATION SYSTEM
AT JABATAN ALAM SEKITAR MELAKA ON PETRONAS PENAPISAN STACK
EMMISION**

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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JUDUL: DATA MANAGEMENT AND DATA VISUALIZATION SYSTEM
AT JABATAN ALAM SEKITAR MELAKA ON PETRONAS PENAPISAN
STACK EMMISION

SESI PENGAJIAN: 2009/2010

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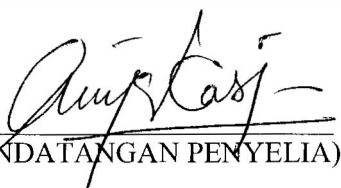
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DATA MANAGEMENT AND DATA VISUALIZATION SYSTEM
AT JABATAN ALAM SEKITAR MELAKA ON PETRONAS PENAPISAN
STACK EMMISION

NURUL ASHIKIN BINTI YUSOP

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
2010


DECLARATION

I hereby declare that this project report entitled

**DATA MANAGEMENT AND DATA VISUALIZATION SYSTEM
AT JABATAN ALAM SEKITAR MELAKA ON PETRONAS PENAPISAN STACK
EMMISION**

is written by me and is my own effort and that no part has been plagiarized
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(NURUL ASHIKIN BINTI YUSOP)

SUPERVISOR:  _____ Date: 29/06/2010 .
(EN AMIR SYARIFUDDIN BIN KASIM)

DEDICATION

A special dedication goes

To my parents Mrs Maimon binti Ibrahim because giving support to me . Without her patients, understanding and most of all love, the completion of this final year project would not have been possible.

To my lecturers, who have encourage, guided and inspired me throughout my journey of education.

To my friends, who always by my side during my hard time.

Thank you for all your support.

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Finally, I would like to show my gratefulness to all my friends for the idea and support to me toward the idea in knowing the real world of building the system.

ABSTRACT

Data Visualization and Management System are use in monitoring the PETRONAS Stack in produce gas for air quality. PETRONAS Penapisan (Melaka) Sdn. Bhd. has commissioned Alam Sekitar Malaysia Sdn. Bhd.(ASMA) to undertake a stack emission test for stack located within its premises in Sungai Udang, Melaka. ASMA will send the report to Jabatan Alam Sekitar (JAS) for determines the situation of air pollution in the study areas. Generally, this system will concentrated on the management data stack into the digital format for JAS in manage the data in efficient way. There is many type of gas that have been produce by PETRONAS Stack which is Nitrogen Dioxide, Carbon Monoxide, Sulfur Dioxide, Hidrogen Sulphide, Sulfur Trioxide and Dark Smoke. All this gas will determine the air quality in the Sg Udang Area. The methodology that is used to develop this project is System Development Life Cycle (SDLC) and Database Development Life Cycle (DBLC). The study has been made during developing the system and among of the study are by searching on the internet about existing system and based on the requirement of Jabatan Alam Sekitar . The output from this project will be a computerized system that can help Jabatan Alam Sekitar Melaka in monitoring air quality.

ABSTRAK

Data Visualization and Management System merupakan sebuah system yang dibangunkan bertujuan untuk memantau pengeluaran gas untuk kualiti udara. PETRONAS Penapisan (Melaka) Sdn. Bhd. telah melantik Alam Sekitar Malaysia Sdn. Bhd.(ASMA) untuk menjalankan ujian kualiti gas yang dikeluarkan oleh cerobong pihak PETRONAS di Sungai Udang, Melaka. Pihak ASMA akan menghantar laporan kepada Jabatan Alam Sekitar (JAS) bagi tujuan pemantauan. Secara kasarnya sistem ini lebih memfokuskan kepada pengurusan data ke dalam bentuk digital. Ini akan dapat memudahkan dalam pengurusan data. Terdapat beberapa gas yang dikeluarkan oleh cerobong PETRONAS iaitu : Nitrogen Dioxide, Carbon Monoxide, Sulfur Dioxide, Hidrogen Sulphide, Sulfur Trioxide and Dark Smoke. Gas-gas ini akan menentukan kadar kualiti udara sesuatu kawasan. Metodologi yang digunakan dalam pembangunan sistem ini ialah System Development Life Cycle (SDLC) and Database Development Life Cycle (DBLC). Sistem ini dibangunkan berdasarkan kehendak Jabatan Alam Sekitar Melaka dan berdasarkan sistem-sistem yang sedia ada. Maklumat juga diperolehi melalui internet. Sistem ini diharap dapat membantu pihak Jabatan Alam Sekitar dalam memantau tahap kualiti udara di Sungai Udang, Melaka.

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CHAPTER 1

INTRODUCTION

1.1 Project Background

Human beings are exposed to great number of potentially harmful pollutants in ambient air. Pollutants in the atmosphere arise from two major sources: natural and anthropogenic. It may be surprising to learn that globally, the largest sources of many air pollutants are natural. Natural events such as volcanoes, dust storms and forest fires produce huge quantities of air pollutants each day. Thus in sheer quantity, natural pollutants often outweighs the product of human activities, the anthropogenic pollutants. Combustion from motor vehicles and industrial processes by far the major producer of air pollutants. Stationary and non stationary emission, if not properly manage and control, may cause serious air pollution episode like haze and smog phenomena, acid rains, greenhouse effect. PETRONAS Penapisan (Melaka) Sdn. Bhd. has commissioned Alam Sekitar Malaysia Sdn. Bhd.(ASMA) to undertake a stack emission test for stack located within its premises in Sungai Udang, Melaka. ASMA will send the report to Jabatan Alam Sekitar (JAS) for determines the situation of air pollution in the study areas. Generally, this system will concentrated on the management data stack into the digital format for JAS in manage the data in efficient way.

The **Data Management and Data Visualization System** will develop function in recording all the information about PERTONAS stack. This system will be conducted base on data that have been collected by ASMA for JAS. The system are build for the changing the data (report) into digital document. The methodology that has been used for this system is System Development Life Cycle (SDLC).

1.2 Problem statement

Before this, system that have been use by JAS is using manually. All the data that have been collected from ASMA will saves into files record. This will make the data is not stored in efficient way. Beside that the management department has to manually inform every staff regarding of the arivals of new report or data every month.

Secondly if user want to request the old document, they have to open old files. This will course a lot of time. It is difficult to track the data.

1.3 Objective

- 1.) The objetive of this project is to buid and implement a system that can manage the data that will help JAS in monitoring the gas that have been produce from PETRONAS stack.
- 2.) To manage, secure the data in efficient way.

1.4 Scope

Data Management and Data Visualization System was developed for the Jabatan Alam Sekutu Melaka. This system will help JAS staff in managing the data from ASMA into the format that can be used in a long term (digital format). These system will help the JAS sdn bhd to facilitate the decision making for monitoring the air quality. This data will be references to JAS for the future information.

1.5 Project significance

These new system will help the JAS staff in handling the their operation in managing the document. The system enables the process like update, edit, and add new data to be easier and more faster. Instead the record data in paper, pressing the update button is much easier and can reduce careless mistake by human.

Moreover the user can access the system using any computer at any place. The data can be request via internet. Beside the system also can check the history data of stack for monitoring updating. The last benefit of this system will produce a report that are more useful and understand by the user.

1.6 Expected Output

This system will give an interactive and efficient way to the user to manage the data in monitoring the air quality. The decision making will also can be more accurate. Then these

system will also give a complete report about the gas parameter and the quality of air that are more user friendly and understood.

1.7 Conclusion

Data Management and Data Visualization System was presented based on **document management system** (DMS) control that will give the ability to manage the data in efficient way. This system also give the security of the data. The implementation of this system is simple and inexpensive.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter consist literature reviews relates to system that is developed. Literature reviews conducted are for guiding concept of research objective, and argumentative thesis. The researchers are done to convey knowledge and ideas that have been established on a topic identify the strengths and weaknesses. Researchers are based on articles, journals, white papers, and existing system related to project.

Research on project methodology, will be guidelines on approaches utilized to develop project. Based on the articles and other internet sources, suitable approach for developing project be adopted to complete this project. Project methodology span many disciplines, including project management, analysis, specification, design, and coding, testing, and quality assurance. In spite of that, SDLC is selected to be used in the project.

2.2 Fact and finding

For fact and finding, many articles such white papers, websites and system had been reviewed. Related knowledge and ideas from sources gathered are taken as guideline for project development. Knowledge and idea from different author are compared to identify their strengths and weaknesses. From the comparison made, ideas and knowledge that is relevant and suitable to the project are applied in the Data Visualization and Management System. Case study of articles and existing system reviewed are assign Section

2.2.1 Domain

A case was carried out at Jabatan Alam Sekitar Melaka trying to address the issues of digital document management specifically at its Management Department. This new system computerizes the work of document management and help to address the problem of document management, specifically document from external source.

2.2.2 Existing system

2.2.2.1 Case Study 1: Document Management System (DMS) and Simple Document Management System (SDMS)

According to the definition of Wikipedia, the online free encyclopedia, a document management system (DMS) is a computer system (or set of computer programs) used to track and store electronic documents and/or images of paper documents. The term has some overlap with the concepts of content management systems. It is often viewed as a component of

enterprise content management (ECM) systems and related to digital asset management, document imaging, workflow systems and records management systems.

Simple Document Management System (SDMS)

SDMS is an open-source system that allows user to store any document in a database via a bunch of webpages.

That was the short description, now comes the long one. SDMS uses PHP to provide user with a pretty interface to a MySQL server that allows user to store and retrieve documents and to share those documents between users.

In addition, the system uses ACL (Access Control Lists) to grant access rights to documents on a per user basis. Its allowed to distribute project documentation on a need-to-know basis, whilst keeping a central repository of documents that is accessible to all team members and easy to manage.

2.2.2.2 Case Study 2: RM Plus Report Management System

RM Plus is an on-line electronic report management system and report repository. This electronic report management tool provides robust report distribution and document distribution for quick, easy access and document sharing. Reduce printing costs, stop printing reports and distribute them via our electronic report management system. End users can view their reports online instead.

RM Plus Report Management Benefits

- Eliminates the cost of printing, report distribution and storing enterprise reports. No more report distribution costs, printer maintenance, toner costs, binders, file cabinets consuming floor space or courier expenses
- Instant Access is provided to report-hungry users. Users have rapid document delivery that is secure and instant access to their reports and documents from anywhere on the web via the document and report management system.

- Increase Security and Compliance by controlling access to cabinets, folder, files and pages. Eliminates unauthorized viewing of customer data and provides a detailed, time stamped audit trail of all document delivery and end user activity.
- Improves Customer Service by accessing documents from the report management system in seconds eliminating the manual retrieval of documents. Automating document delivery to knowledge workers increases their productivity and the company's bottom line.

2.2.2.3 Case Study 3: Enterprise Report Management System

Enterprise report management system is a print virtualization solution that allows user to significantly cut back on costly and time-consuming printed paper reports and quickly, efficiently and securely deliver information to employees throughout organization, as well as to customers, partners and vendors.

Enterprise report management solution provides an easy-to-use systems administration feature that allows user to add/change/delete specific reports and users through simple point-and-click operations. Reports are easily identified and organized through user-definable report names and categories and arranged in easy-to-navigate folders where each report generation is individually listed. Global and individual report retention parameters can be set for automatic purge or archival to disk, tape, CD-ROM or optical drives.

2.2.3 Technique

2.3 Project Methodology