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JUDUL: INTERNET SHARING ACCESS BILLING SYSTEM

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INTERNET SHARING ACCESS BILLING SYSTEM

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This report is submitted in partial fulfillment of the requirements for the
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DECLARATION

I hereby declare that this project report entitled

INTERNET SHARING ACCESS BILLING SYSTEM

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT: _____ Date : 1. DEC. 2005

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DEDICATION

To my beloved parents, Hj Abd Rasid B Mamud and Rosni Bt Hj Hassim

To my supervisor, Hj Muhammad Suhaizan B Sulong

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ABSTRACT

This project is called Internet Sharing Access Billing System developed for all individually or organization to create a billing system. It is easy to use. The module of this system can be extensible in the future following the time changes.

This system is web base application that used almost open source application. Open source application is the most expending application while web base application is the easiest approaches to ease cost in business management. The combination of these two approaches makes this system very compatible nowadays.

ABSTRAK

Projek ini dinamakan Internet *Sharing Access Billing System* dibangunkan untuk individu atau organisasi bagi membuat sistem bil mereka. Ia senang digunakan. Setiap modul di dalam sistem boleh dikembangkan mengikut keadaan dari semasa ke semasa.

Sistem ini adalah aplikasi system berasaskan internet yang menggunakan sebahagian besar sumber terbuka. Sebagaimana yang sedia maklum, aplikasi sumber terbuka adalah teknologi yang paling pesat berkembang sekarang ini. Selain daripada itu, aplikasi berasaskan internet juga adalah pendekatan yang paling murah dan fleksibel dalam usaha mengurangkan kos perniagaan. Gabungan dua pendekatan ini menghasilkan suatu sistem yang sangat sesuai unutk digunakan dalam dunia perniagaan hari ini.

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LIST OF ACRONYMS

ACRONYMS	FULL TERMS
KUTKM	Kolej Universiti Teknikal Kebangsaan Malaysia
OOAD	Object-Oriented Analysis and Design
RUP	Rational Unified Process
UML	Unified Modeling Language
ICT	Information and Communication Technology
MAC	Media Access Control
IP	Internet Protocol

CHAPTER I

INTRODUCTION

This chapter will discuss about the whole project in brief. They include discussions on project background, problem statement, objective, scope and project significant.

1.1 Project Background

In this project, a system called Internet Sharing Access Billing System is developed to calculate the charges of the internet sharing usage and to register al user activity on internet (for this project just login and logout activity). Hopefully, at the end of this project, the developed system can be applied to the entire products that have using charging concepts. By using this system, the billing of internet sharing access can be done in more systematic and efficient way.

The charges are calculated based on the bandwidth required by the internet user. In order to use this system, a user must register to access the internet. After the registration is completed, the user can choose the packages that provided by administrator. How about the offered packages? It is depend on the administrator to create it. Principally, this project is like prepaid phone. The user can make call if the credits balance is still available. The user will be blocked, if the balances insufficient. System will gives permission only when the users have balance in accounts. Another concept is like payment for streamyx services. The user can

choose the package based on the bandwidth. This means, the charges will be the same for every month.

Internet Sharing Access Billing System is suitable to be used at university or university college. For big company, it better in housing area by using wireless methods. The figure below is the example of Internet Sharing Access Billing System deployment and it will give more details about the system.

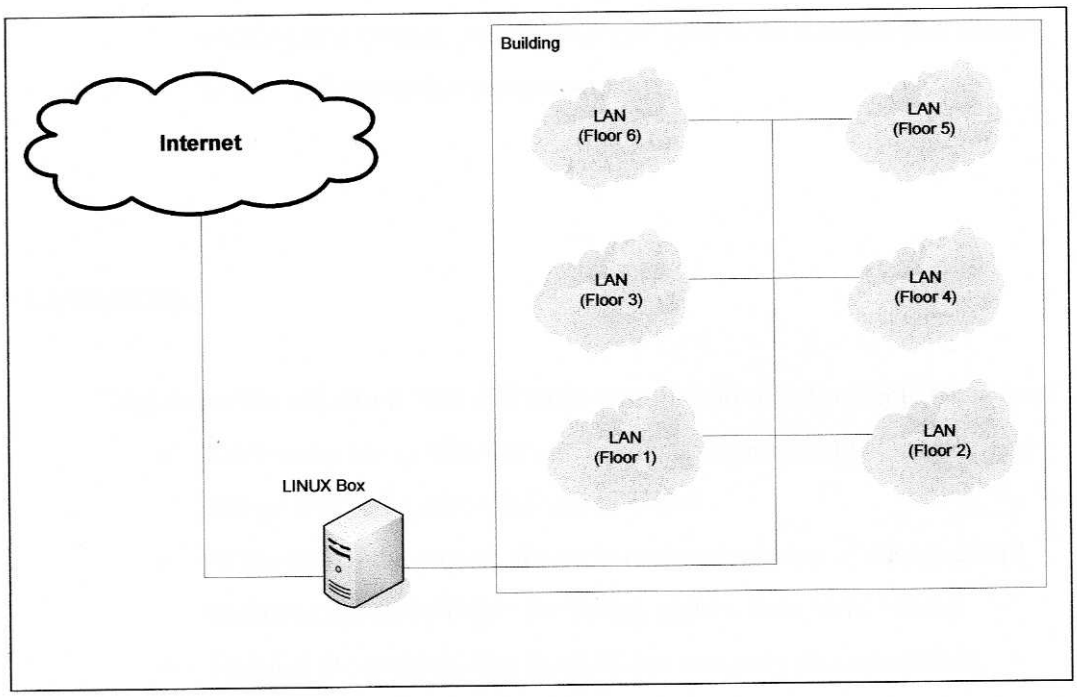

Figure 1. 1 : Example of project deployment

1.2 Problem Statements

Currently, system for calculating internet usage charges is still unavailable in the market. The idea to build the system comes when the below problem arise from the conventional procedure. The problems are :

- Charging for all users are same, either they have using higher bandwidth or lower. As a result, some users can monopoly the

bandwidth. It happened in some company providing internet services to one building.

- In the ordinary process, server will give IP to computer by automatically using DHCP server. This method is giving chance to expert user to steal the network line to access internet.
- In development process, the programmer usually faced the same concept each time doing a development. In examples, if the company has three projects that involve the calculation, so the programmer must do three time the same things for the calculation code. By creating this system, programmer just selects the function that wants to use. It happened at some company.

1.3 Objective

Below are the objectives that will archive at the end of the project. There are :

- To develop the system that can calculate internet usage charges. The charge will be based on individual client.
- At the end of the project, the code to do calculation of charging will become extensible library for billing system and can be reused.
- To solve the problem that faced by the company as a mentioned before.
- To try developing one system by using freeware application. This objective involved in system development process. For the documentation process, illegal software will be used.

1.4 Scopes

To understand more about the system, the project scope will be divided into small parts. The covered parts indicate the boundaries of the project. Actually, the systems already have several targeted user in current ICT market. Among the main for interested institutions are university and university college provide an internet services for their in campus students.

1.4.1 Project Functionality

Generally, the system contains five modules which are authentication, user registration, checking status, report and rules determination. These five modules can be categorized in to two parts; user parts (2 modules) and admin part (3 modules). The user modules are for authentication and checking status. While, the module in admin parts are user registration, report and rules setting.

- **Authentication**
  Before user can be allowed to access internet, user will be requested to sign in first. Under this module, the system will inspect the packet either the packet has been marked or not. For marking stage, system will perform by using MARK target in iptable. In this project, this concept just as a stimulation. We assume that user can access the internet after login success.

- **Checking Status**
  This module is for checking user status in term of viewing account balance, previous bill, and user profile.

- **User Registration**
  This module demands admin intervention in order to register users. The end user will be given a form to be filled pertaining to personal information. After that, admin will key in the data to the system.

- **Report**

  This module will provide report on the usage of internet among user and billing status. The report can be divided into summary by monthly report and the user usage report.

- **Rules Setting**

  This module is for administrator to set the rate for internet accessing. In this module the calculation of the internet charges will be performed. The admin will be given an option to choose related to type of calculation whether packet transfer or time based. From that module, the code will be extensible to become a library in the future. As an early step, this project will be as a platform for implementing it. In this rule also, admin can make announcement (news) to user.

1.4.2 Project Approach and Solution

The approaches that will be used in this project is Object Oriented Analysis and Design (OOAD). An Object Oriented approach involves identifying the objects in the problem domain and classifying them in terms of data and behavior. An object is something that exists within the problem domain that can be identified by data and/or behavior. An example of an object is a Clock. The data of a clock could be the hours, minutes and seconds. The behavior of the clock would be to set the time, display the time and advance the data with time.

1.5 Project Significance

This project will be beneficial for who wants to develop ICT business based. The client can provide the most suitable services to and users in term of rate and performance to access internet. In end user side, they will get high bandwidth internet access. Although the bandwidth may be between 100kbps to 150kbps, but it

is better than using dial-up connection. However, this system is more suitable for collages and universities hostel usage. The administrator of the higher education institute can provide internet services to all interested students. By doing that, the cost to use internet services with high bandwidth can be reduced.

This system is providing the facilities to handle the things related with billing process. The admin will setup the 'mould' for clients. The clients just choose the 'mould' up to them. This system is giving more functions to admin. It is because, the admin will controlling the internet usages.

1.6 Conclusion

In the conclusion, Internet Sharing Access Billing System is very useful to ICT company. It also useful for user who wants to enjoy high bandwidth connection with fair prices. In the future, this system can be extensible for more usage in the world.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

Literature study is important for ensuring the project that will be developing is meaningful and reliable. This is because the sentences, phrase, and writing in the report based on the real situation. Literature review is needed in order to improve current system by making some improvement especially to the system robustness. Normally, the literature review is obtained by searching, collecting, analyzing and drawing conclusion from all debates and issues raised in relevant body of literature.

2.2 Fact and Finding

The project that will be developed is a combination of two concepts that already being used in current technology. This section will describe the concepts that will be use. The aim of this discussion is not for giving comments to current system or system constraints, but to give the overview of the concepts that will be used in this project.