

CYBERCAFE SYSTEM USING CLIENT- SERVER APPLICATION

FARHANA BINTI ABDUL SAMAD

**A thesis is submitted in fulfillment of the requirements for the
award of the Bachelor in Computer Science (Computer System
& Networking)**

**Faculty of Computer Systems & Software Engineering
University Malaysia Pahang**

May, 2011

PERPUSTAKAAN UNIVERSITI MALAYSIA PAHANG	
No. Perolehan 068695	No. Panggilan QA 76.9 .C55 F37 2011 rs Bc.
Tarikh 30 NOV 2012	

ABSTRACT

Cybercafé System is software for operating Internet Café, Cybercafé, Game Centre, Gaming Café and PC rental Café shop. It has been designed for make ease to the management, accounting, billing even it can be used for intranet PC controlling. There are six chapters altogether inside the report. The first chapter is the introduction. This chapter will discuss about the preface of the system and it briefly explains about the objectives of the system, problem statement that occurred to build the system and the system's scopes. Chapter two and three are the literature review and research and methodology respectively. Chapter two and three will be elaborating on the sources from the research, deciding and discussing the method that will be used in developing the system and the best tools that will be used to build the system. Next, chapter four will be the implementation. This chapter will be discussing on the documentation of the processes during the development of the system, including any modification that been planned and made. Chapter five will be the results and discussion. This chapter will explain about the results that have been collected from the analysis and testing of the system along with the constraints and suggestions to enhance the system's performance in the future. The last chapter will be the conclusion. This chapter will give the summary of the system, data, methodology, implementation and the suggestions of the system.

ABSTRAK

Sistem CyberCafe adalah sebuah perisian untuk mengendalikan sesebuah Kafe Internet, Kafe Siber, Pusat Permainan Video, dan Pusat Penyewaan PC. Tesis ini mengandungi enam bahagian kesemuanya. Bahagian pertama ialah bahagian pendahuluan. Bahagian pendahuluan ini akan membincangkan mengenai latar belakang system, tujuan sistem ini dibangunkan, pernyataan masalah yang timbul sehingga membawa kepada pembangunan system ini, dan lingkungan skop bagi pembangunan system ini. Bahagian kedua dan ketiga ialah masing-masing pemerhatian kepada idea dan penulisan penulis lain terhadap sistem yang seumpama dengan yang hendak dibangunkan dan juga kajian terhadap kaedah dan teknik yang hendak digunakan.

Bahagian yang seterusnya iaitu yang keempat ialah bahagian implimentasi sistem yang hendak dibangunkan. Bahagian ini sebenarnya akan menceritakan dengan lebih terperinci lagi akan dokumentasi sistem termasuklah pengubahsuaian sistem yang ingin dilakukan. Bahagian yang kelima ialah keputusan yang diperolehi selepas pembangunan siap sistem ini dan perbincangan yang dibuat terhadap keputusan yang diperolehi.

Bahagian yang terakhir ialah bahagian kesimpulan yang mana bahagian ini akan memberikan ringkasan mudah mengenai sistem, data yang diperolehi, kebaikan dan kelemahan sistem ini serta cadangan atau idea untuk memajukan lagi sistem ini pada masa akan datang.

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CHAPTER 1

INTRODUCTION

1.1 PROJECT BACKGROUND

An internet cafe or cybercafe is a place where one can use a computer with Internet access, most for a fee, usually per hour or minute; sometimes one can have unmetered access with a pass for a day or month. It may serve as a regular cafe as well, with food and drinks being served. The online cafe phenomenon was started in July 1991 by Wayne Gregori in San Francisco when he began SFnet Coffeehouse Network. Gregori designed, built and installed 25 coin operated computer terminals in coffeehouses throughout the San Francisco Bay Area. The cafe terminals dialed into a 32 line Bulletin Board System that offered an array of electronic services including

FIDOnet mail and, in 1992, Internet mail. The concept of a cafe with full internet access (and the name *Cybercafe*) was invented in early 1994 by Ivan Pope. Commissioned to develop an Internet event for an arts weekend at the Institute of Contemporary Arts (ICA) in London, and inspired by the SFnet terminal based cafes, Pope wrote a proposal outlining the concept of a cafe with Internet access from the tables. The event was run over the weekend of 12–13 March 1994 during the 'Towards the Aesthetics of the Future' event.

Client-Server is an architecture in which the user's PC (the client) is the requesting machine and the server is the supplying machine, both of which are connected via a local area network (LAN) or wide area network (WAN). Throughout the late 1980s and early 1990s, client/server was the hot buzzword as applications were migrated from centralized minicomputers and mainframes to networks of desktop computers. The term client/server describes one possible relationship between two software applications in which the client makes a service request from the server. The client/server relationship can apply to two programs running on a single computer or two programs running over a network. In the case of a network, the client/server model provides a convenient way to interconnect programs that are distributed efficiently across different locations. Computer transactions using the client/server model are very common. The client/server model has become one of the central ideas of network computing. Most business applications being written today use the client/server model. So this had called me to study more about the client-server application and to be apply it in the cybercafe defeat the manual management.

This project involves building a client-server application in cybercafé system. The server will be loaded on the administrative computer which will be able to control all the other computers which will act as clients.

1.2 OBJECTIVES

The project is carried out as to achieve the following objectives :

- a) To develop a client-server application in a cybercafé system.
- b) To enable admin handle the time and payment efficiently besides controlling the clients' PC.

1.3 PROBLEM STATEMENT

- i/ Admin having problems in manage and control all the users' PC at a time in terms of managing the time deployed by the users and payment. In order to resolve this problem, the client-server application is applied to the system whereby the admin can monitor and manage all the users' PC totally or individually by directly access the PCs' from the admin site (server).

1.4 PROJECT SCOPE

In order to achieve the project's objectives above, the scope of the client-server application is stated as below:

- a) Admin - the owner of the cybercafé and the server will be loaded on admin's PC which enable to control all the other PCs' which act as clients
- b) Client – the users of the cybercafé which controlled by the admin

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Even though Internet connectivity has been enhanced by mobile phone network operators in Nigeria through the use of GPRS (General Packet Radio Service) connectivity, cybercafés have become so popular that there are at least two privately-owned and operated cybercafés [2]. Cybercafes, which are places where Internet access is provided for a fee, provide the opportunity for people without access to the Internet or who are traveling to access web mail and instant messages, read newspapers and explore other resources of the Net (Adomi, 2005; Adomi, 2007; Adomi, Okiy, and Ruteyan, 2003; Adomi, Omodeko, and Otolu, 2004) [1]. As noted by Stewart (2000) the explosion in the use and profile of the Internet and personal use of new information and communications technology, multimedia has made cybercafes to become part of contemporary culture, established among the public places of modern cities, towns and villages around the world.

The cybercafe also known as internet cafe or PC cafe is a place where internet public access services are provided by entrepreneurs for a fee (Adomi, Okiy and

Ruteyan, 2003; Calson Analytical, 2004). While in the USA and Western Europe, the term cybercafe refers often to true cafes offering both internet access and beverages, in Nigeria and other parts of Africa, cybercafes can refer to places offering public internet access in places like restaurants or hostels, or they are locations that are wholly set aside for public access internet services (Adomi, Okiy and Ruteyan, 2003; Adomi, Omodeko and Otolu, 2004) [3]. According to Sairosse and Mutula, (2004) cybercafes are currently becoming the preferred internet access points since most of them are open for long hours, charge reasonably, provide assistance to users, have diverse services and are generally convenient and flexible places for searching the internet.

Looking at the advantage and facilities given on the cybercafé, this project will be doing on the cybercafé which implements the client server application. As before this, at olden time, cybercafé is not applying this client server concept, but manually. Later on, this concept has been applied in the cybercafé. There are lots of cybercafé nowadays using this client server application by using many softwares available in market. Each of it has differences, the advantages and disadvantages whereby this project will come with the prototype of the client server application.

2.2 CYBERCAFE

In the contemporary era, it is very difficult to think of an urban area that is not connected with the Internet especially for people who use the medium for routine communication, transactions. A cybercafes facilities access to the Internet through computers in a relaxed atmosphere for people belonging to different age groups and having diverse socio-economic backgrounds. Cybercafes are often not selective about the clientele and satisfying users' varying needs for example, besides providing Internet, consultation and publishing some serve food and liquor. In some areas, cybercafes have become a preferred gathering place for the people of different ages, income and level of computer knowledge and skills (Rathore and Alhabshi, 2005).

It should be noted that cybercafe is not a transitory phenomenon but the evolution an extension of an old and traditional institution, the café. Cybercafe may service and reflect the communication and information needs of people living in a global society, but they place this in a local context through provision of a social space and a convenient and hospitable location for technology access (Stewart, 2000).

Though cybercafes have been used as places for facilitating, e-communication and socialization in different parts of the world, they like other Internet based organizations experience “local” security problems and can be used as avenues to caused / launch security breaches / attacks to others (individuals and organizations) that are connected to the Internet. Whenever computers are connected to the Internet, they are exposed to attacks from intruders (Liverpool John Mores University, 2007). This is because the technology user group had changed from one consisting mainly of researchers and academics which have resulted in a shift from the desired results of improving economics to increase in the risk of using information technology as well (Rudasill and Moyer, 2004). Cybercafes can experience systems / network security breaches such as cracking, hacking, virus, worms etc. Security breaches can cause computers and network malfunction and even breakdown of the systems and network of an affected cybercafe. Security is a key factor for organizations when adopting web services in their mission critical business transactions. Without taking cares of security, enterprises like cybercafes could not use web services in the insecure Internet environment (Rosado, Gutierrez, Fernandez-Medina and Piattini, 2006). The Internet has become increasingly complex, leaving many organizations vulnerable to malicious attacks. Organizations are therefore faced with trying to protect their infrastructure against network security attacks, as well as attacks that are specific to the security layer (F5 Networks Inc, 2004).

Cybercafes are set up in order for the entrepreneurs to make money and to enable their clients to access the Net. When security breaches occur in the cafes, this could lead to dissatisfaction of clients which eventually may affect income especially if measures are not taken to correct such breaches quickly. It would even be better for cybercafes to put security measure in place to prevent occurrence of breaches. Installation of antivirus

software, firewall etc. could assist cybercafes to prevent occurrence of network attacks. Knowledge of network security would also enhance cybercafe security as it has been found that few café personnel know little about hacking / Internet security (ApiAP, 2005).

Software which is the detailed instrument that controls the operation of the computer system (Laudon and Laudon, 2001) is very crucial to the smooth and successful operations of computers that are connected to the Internet. Software is a necessary requirement in a cybecafe. As noted by Ajewole in his book, it is essential to install necessary software in a café because the demands of the typical cybercafé user are numerous, that besides the basic software usually bundled with operating systems, there are other software required to make customers visit to a café a successful one. A cybercafe operator needs to install software that should ensure the smooth operation and management of the systems, network, and enhance client satisfaction. Therefore, this project will develop such system that satisfied both client and admin after make research and study about the existing client server application applied in the cybercafé.

2.3 INTERNET

The Internet was the result of some visionary thinking by people in the early 1960s who saw great potential value in allowing computers to share information on research and development in scientific and military fields. [10] What is now known as the 'Internet' began around 1973 when the United States Defence Advanced Research Projects Agency (DARPA) conducted a research to investigate mechanisms that could interlink packet networks of various kinds, thereby developing communication protocols which would allow networked computers to communicate transparently across multiple and linked packet networks (Abdel Kader, 2009). By 1986, the U.S. National Science Foundation (NSF) began the development of the NSFNET which still continues to serve as a major backbone of communication service for the Internet. Abdel Kader (2009) further states that public domain and commercial implementations of the roughly 100 protocols of Transmission Control Protocol (TCP) and internet protocol (IP), protocol suite became available in the 1980's, and by the end of 1991, the Internet has grown to include some 5,000 networks in over three dozen countries, serving over 700,000 host computers used by over 4,000,000 people. According to Internetworldstatistic (2009), there are about 1.8 billion internet users in the world today, with Africa accounting for just about 4%. Usually referred to as the network of networks, the Internet was originally used to send messages and documents electronically; for acting as information host; for online group discussions; and for accessing remote computers. Ojedokun (2007) observed that the use of the Internet has transcended these functions to include present-day application of the Internet for finding information using the World Wide Web (www) with easy to - use interfaces like GUI (Graphical User Interface). [2]

2.4 EXISTING CYBERCAFE

The existing systems are the research subject and will be a guideline to this project. There are some Computer Network Management systems are selected because of their features and technologies used are suit with the development of this system. In this section, there will be an explanations on all the features provide on each application and make a comparison between them. All the information will be as a guideline to propose a prototype application and to improve the features of the developed application itself.

2.4.1 TINASOFT EASYCAFE

EasyCafe is an absolute way out for management needs in the internet café. It is competent of handling the customers, accounting and the cafeteria with the minimum human aid or support. EasyCafe has many unique features for adding diversity for the clients. It increases the quality of their services by providing wider options to their customers [18]. Some of the features are as follows:-

1. Security and Stability

EasyCafe is the most stable internet in its class. Power downs and customers crashes do not affect EasyCafe system. It can continue the work from where its left after the system reboots.

Users and restricted system cannot override the restrictions defined by the

Administrator.

2. Accounting

EasyCafe implements accounting tools to have restrictions of all transactions and accounts. The entire money flow is monitored and reported to the accounting in the most convenient way. Admin can have daily reports or service reports and statistical data of the usage and service.

3. Payment Methods

EasyCafe can charge customers using various internet methods such as price by usage time, price by days or special price for members. Admin can have both prepayment and post payment options for all the pricing methods.

4. User Membership

Create service for the regular customers. Registered users can login to the EasyCafe system by themselves with no need to the assistance of a cashier. Reduce the labor load and improve the cafeteria quality. The price of the internet usage will be added to the user's account automatically.

5. Cafeteria control

EasyCafe is designed to enable cybercafe customers to order goods from their desktops. Administrators can define cafeteria items and their prices. The cashiers of the ordered items are being added to the customer's bill and charged at the end of the usage.

6. Restrictions

EasyCafe can restrict the usage of the Client PCs in various ways. Thus the cafe staff do

not have to put excessive efforts to keep the system running. It can protect the PCs against jamming and attacks.

7. EasySMS

The users of cybercafes signed-up for the EasySMS can send SMS Ringtones, Operator Logos, Flash SMS and Picture SMS to their or others' Mobile phones all over the World. Moreover the cybercafe can make a considerable control with EasySMS service. The fees for the sent SMSs will be added to the customers' bills.

8. Excellent Control System

EasyCafe supplies unbelievable control to the managers. EasyCafe makes it possible to turn on and off all the easysms from the server, admin can check user applications and terminate them. Admin can also restrict minors from accessing pages which include violence or adult material. Admin can restart and reboot all the computers one by one without leaving your PC. But the most important of all, EasyCafe client application is uncrashable, fully protected from users interferences and it informs to reports of any possible faults or/and actions of the clients.

The screenshot shows a window titled "System Parameters" with several tabs: "Administration", "Server Properties", "Bad Keywords", and "Price List". The "Administration" tab is active, displaying a "Parameters" section with the following fields:

Minimum Cost	
Round	0.00 TL
Min.Price	0.00 TL
Game Price	0.00 TL
VAT %	<input type="checkbox"/> VAT Enabled
Admin Pass:	Admin Pass:
Cashier Code	Password:
<input type="checkbox"/> Authorized	Total Cashiers: 0

At the bottom of the window, there are buttons for "Prev", "Next", "Apply", "Insert", "Delete", and a "Save" button.

FIGURE 2.0 ADMIN SETTING

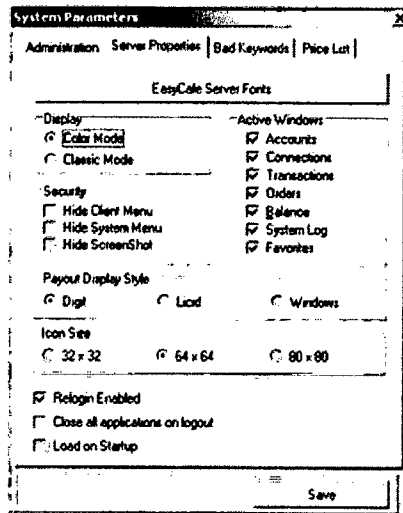


FIGURE 2.1 SERVER SETTING

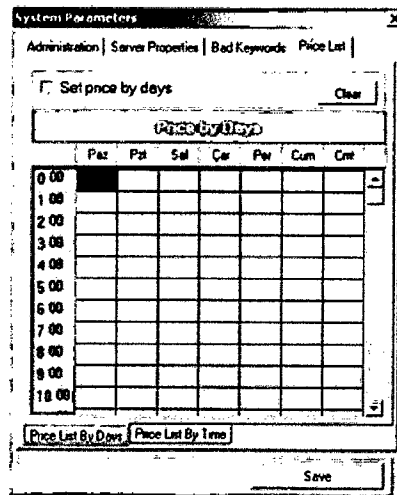


FIGURE 2.2 CHARGING TABLE

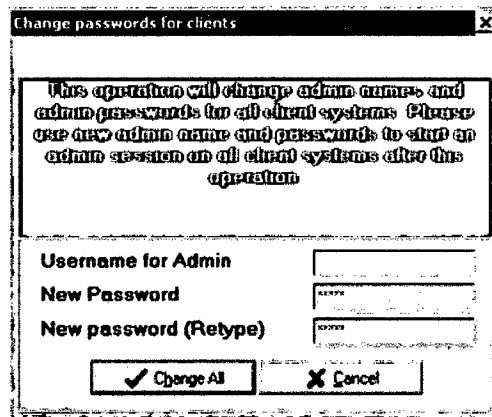


FIGURE 2.4 CHANGING ADMIN'S PASSWORD FOR CLIENT

2.4.2 CYBERLEADER CAFÉ SOFTWARE

It is an online customer billing for Internet Kiosks. Customers can pre-pay for sessions using any major credit card, which is ideal for Internet kiosks. It has a windows-like fully customizable interface of client workstation. It includes well-developed Timecodes feature for selling time based tickets with multiple exporting and printing options including exporting into HTML and XML. It is very easy to use prepaid sessions where the customers just need to start a prepaid session with only two clicks. It has comprehensive point of sale system, full employee control which is every employee will gets an account with personal user rights and also the ability to remotely update CL Clients all at once. The management and monitoring features are as follows:-

1. Point of Sale System

Using easy to use and very flexible POS that can sell any items that offer. POS allows admin to keep track of the inventory and can calculate the cost of items that admin add to stock.

2. Timing Control

Know exactly for how long customers use the computers.

3. Receipt Setup

Adjust the size of receipts to fit the printer and all receipts are numbered to allow checking or reprinting them. It shows Cafe's Name, Date, Time, Employee, Receipt Number, Location and other info on each receipt.

4. Reports

Check out earnings using automatically generated financial reports. Admin can see the total amount earned over a period of time and see when, on what computer, and with which administrator each cent was gained. Detailed statistics with graphs are generated using Microsoft Excel. It shows how much money was gained during each hour of the day, number of customers per hour and much more.

Admin can even export reports in the HTML format and set the program to automatically send them to desired e-mail addresses at intervals of choice. Reports are emailed through HTTP without any need to enter SMTP settings as competing products require. This ensures that emails are not blocked by ISP firewalls.

5. Pricing

Scheduled Pricing: admin can have only one rate per hour or multiple rates per