

PERPUSTAKAAN UMP



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CYBER CAFE MANAGEMENT SYSTEM

MOHAMMAD NUR TAUFIQ BIN IBRAHIM

A report submitted in partial fulfillment  
of the requirements for the award  
of the degree of  
Bachelor of Computer Science (Software Engineering)

Faculty of Computer System & Software Engineering  
Universiti Malaysia Pahang

DECEMBER, 2014

## BORANG PENGESAHAN STATUS TESIS

JUDUL : CYBER CAFÉ MANAGEMENT SYSTEM

SESI PENGAJIAN: 2014/2015

Saya: Mohammad Nur Taufiq Bin Ibrahim

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*M. Nur Taufiq Bin Ibrahim*

.....  
(TANDATANGAN PENULIS)

Alamat Tetap:  
No 111 RPSB BUKIT KENING  
28100 CHENOR  
PAHANG

Tarikh: 09/01/2015

*En Wan Muhammad Syahrir Bin Wan Hussin*

.....  
(TANDATANGAN PENYELIA)

Nama penyelia:  
EN WAN MUHAMMAD SYAHRIR  
BIN WAN HUSSIN

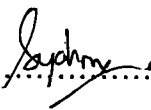
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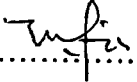
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I would like to express my grateful to Allah SWT for the strength to complete this thesis. A lot of experiences and knowledge were gained along the way.

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In particular, my sincere thankful is also extends to all my colleagues and others that provide assistance directly or indirectly. Their opinions are mean and useful to me indeed. Lastly, thank you for my family members for their continuous support during completing this report.

## ABSTRACT

Cyber Cafe Management System for Perbadanan Perpustakaan Awam Selangor (PPAS) is a management system to replace the manual registration system using paper form that are currently use. This system can record all the user information for the Cyber Cafe computer usage such as user's name, date and time, and floor. This sytem will include the PC monitoring system.

This report consists of six (6) parts. Chapter 1 is the introduction to the project. In this part contain introduction, problem statement, objective, existing system reviews, current system and limitation and report organization. Chapter 2 is the Software Requirement Specification (SRS). In this part contain product description, interface requirements, software product features, and requirement traceability. Chapter 3 is the Software Design Document (SDD). In this part contain system overview, system states and modes, system design description, and database design. Chapter 4 presents the implementation of process that involved during development of this system. Chapter 5 presents the result obtained from the implementation phase. The constraints of system also will be discussed in this chapter. Part 6 presents the overall conclusions of the work presented in this study whether it can achieve the goal of this project.

## ABSTRAK

Cyber Cafe Sistem Pengurusan untuk Perbadanan Perpustakaan Awam Selangor (PPAS) adalah sebuah sistem pengurusan untuk menggantikan sistem pendaftaran manual menggunakan borang kertas yang kini digunakan. Sistem ini boleh merakam semua maklumat pengguna bagi penggunaan komputer Cyber Cafe seperti nama, tarikh pengguna dan masa, dan lantai. Sytem Ini termasuk sistem pemantauan PC.

Laporan ini terdiri daripada enam (6) bahagian. Bab 1 merupakan pengenalan kepada projek. Dalam bahagian ini mengandungi pengenalan, pernyataan masalah, objektif, ulasan sistem sedia ada, sistem semasa dan had dan organisasi laporan. Bab 2 adalah Spesifikasi Keperluan Perisian (SRS). Dalam bahagian ini mengandungi keterangan produk, keperluan antara muka, ciri-ciri produk perisian, dan keperluan pengesanan. Bab 3 adalah Design Dokumen Perisian (SDD). Dalam bahagian ini mengandungi gambaran keseluruhan sistem, keadaan sistem dan mod, penerangan tentang reka bentuk sistem, dan reka bentuk pangkalan data. Bab 4 membentangkan pelaksanaan proses yang terlibat dalam pembangunan system. Bab 5 membentangkan hasil yang diperolehi dari fasa pelaksanaan. Kekangan sistem juga akan dibincangkan dalam bab ini. Bab 6 membentangkan kesimpulan keseluruhan kerja yang dibentangkan dalam kajian ini sama ada ia boleh mencapai matlamat projek ini.

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## **LIST OF ACRONYMS / ABBREVIATIONS / GLOSSARY**

### **ABBREVIATIONS**

### **DEFINITIONS**

CCMS	Cyber Cafe Management System
PC	Personal Computer
SDD	Software Design Document
SRS	Software Requirement Specification
PPAS	Perbadanan Perpustakaan Awam Selangor

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1. Introduction**

Cyber Cafe Management System for Perbadanan Perpustakaan Awam Selangor (PPAS) is a management system to replace the manual registration system using paper form that are currently use. This system can record all the user information for the Cyber Cafe computer usage such as user's name, date and time, and floor. This sytem will include the PC monitoring system.

For the customer, they can register their information into the system. The user can choose available PC in the cyber cafe and register their information. Then they need to top up their time before they can use the PC. When they start using their PC, their information will be review at their PC.

For the staff, they can get the record of PC user at the end of the month and can automatically generate Microsoft Excel document from the database. The staff also can generate the statistic income from the database.

### **1.1.1. Statement of the problem**

The current system in overall was managed manually. Whenever the user want to use the PC they need to fill in the paper form. User also can not choose their own PC that available. The staff need to check the available PC for user.

At the end of the month,staff need to key in the information into the Microsoft Excel document. There are risk that the paper form will lost before the month end. There are risk that the staff make mistake during the key-in process. Staff also need to generate the income statistic manually at the end of the month. There also need time and energy for the staff to do the key-in process.

### **1.1.2. Objective of the system**

In order to develop the CCMS, the overall objectives of this system are:

1. To develop a prototype management system for Cyber Cafe at Perbadanan Perpustakaan Awam Selangor.
2. To develop application that can generate the income statistic.
3. To develop application that can produce the usage report.

### 1.1.3. Scope

#### 1. Customer

Customers are the target user of this system. The customer can choose PC that they want to use. User need to fill their information into the form and their information will save in the database.

#### 2. Staff

Staff also one of the important users of this system. They are not only can view the customer information but they also can generate usage statistic for every month. Staff also can produce income statistic using the system.

#### 3. Manager

The system for manager is design so that the manager can view staff information and update the staff information.



## 1.2. Review Previous Work

### 1.2.1. MyCyberCafe

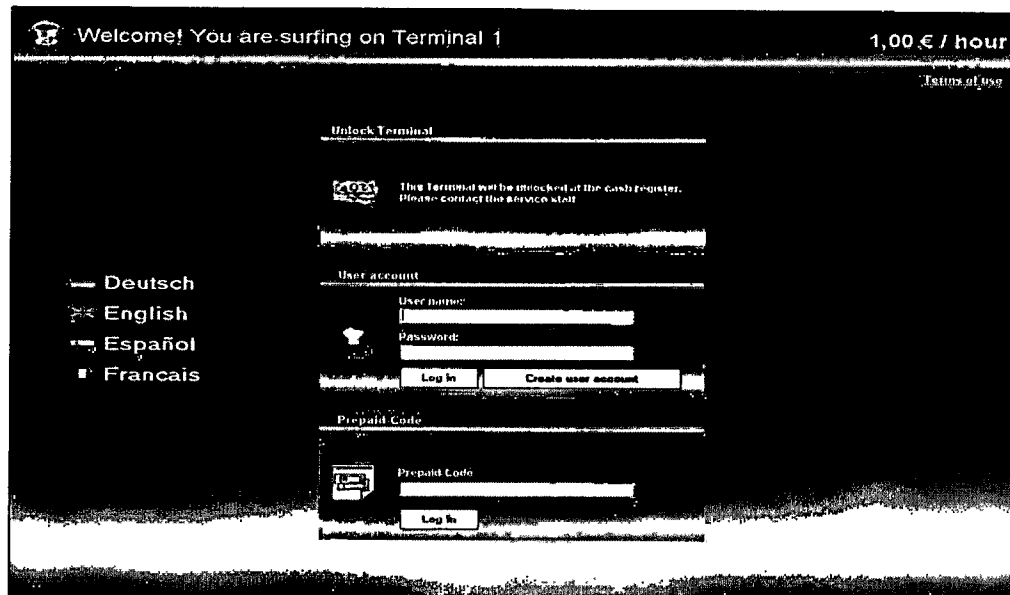


Figure 1. 1: MyCyberCafe

MyCyberCafe features :-

1. Controls the time usage of your computers and game consoles.
2. Client software limits the customer activity the way you want it - hides desktop icons, the Windows button, the access to the system.
3. Easily manages customer accounts, security, games and programs usage.
4. Controls all your printers and optionally deducts print cost from the session.
5. Full POS system with customer loyalty, advanced statistics, reports and logs.
6. Customizable pricing with prepaid and postpaid accounts, prepaid-codes, refills.
7. Client remote control, and many options for high security.
8. MyCyberCafe software supports: Desktop personal computers, thin clients (terminal services, NComputing, etc.)
9. Deployed in more than 170 countries.
10. MyCybercafe billing software is the definitive tool for managing your Internet cafe, shools, hotels or gaming cafe / game center.

## 1.2.2. Cafe Suite

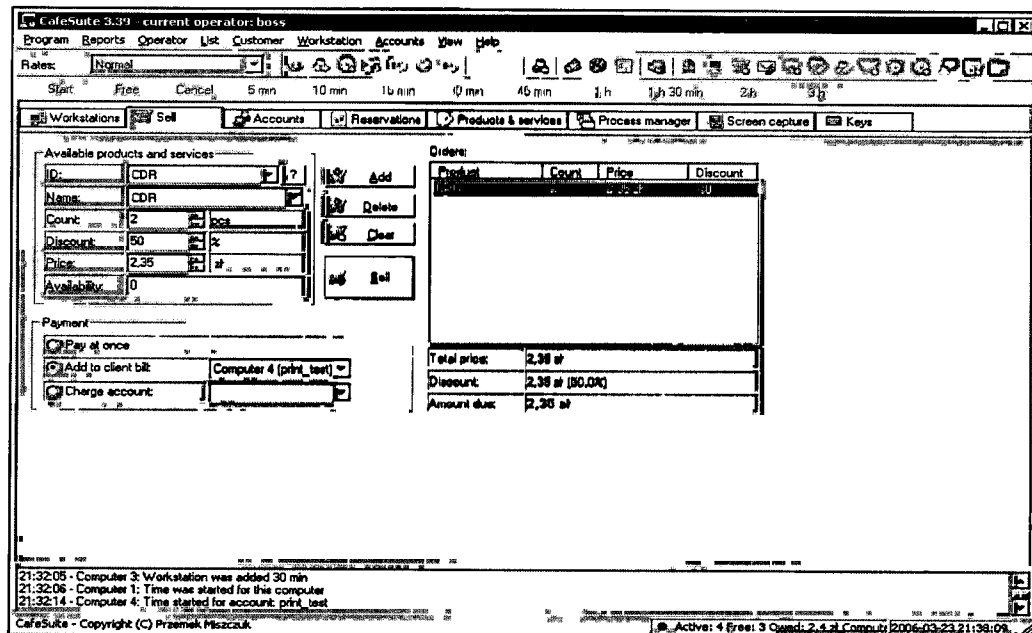
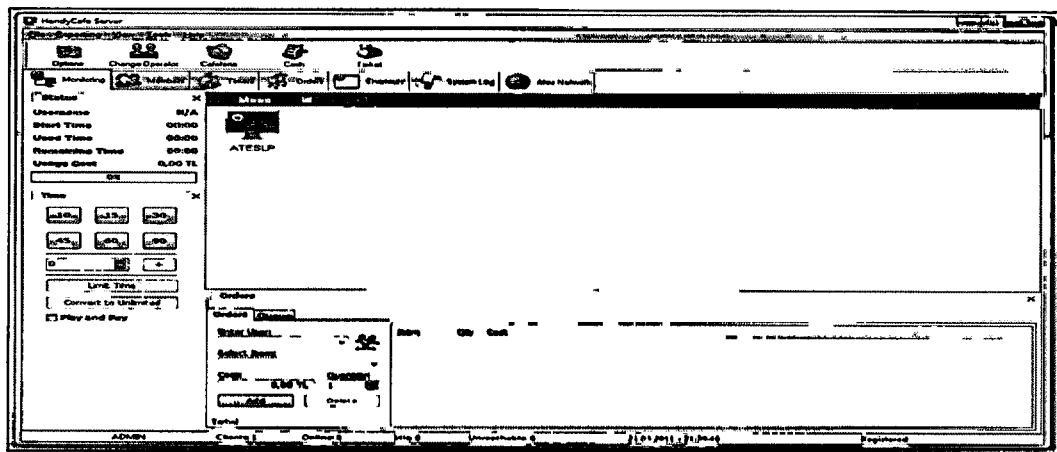


Figure 1. 2: CafeSuite

Cafe Suite Features:-

1. CafeSuite provides many levels of security, ensuring that your business is always under control.
2. Unused workstations can be securely locked so that no one can use them without proper authorization from the operator.
3. You can create many profiles for your employees with different access rights. Not every one should be able to change crucial options or pricing schemes — CafeSuite makes it possible.
4. All databases used by CafeSuite are encrypted which ensures they can't be tampered with by unauthorized individuals.
5. CafeSuite makes it really easy to manage large database of customer accounts..
6. Cafe Suite software provides you with a range of reports and statistics summarizing your business performance. Starting with very general reports, you can even get a list of all operations performed by your employees minute by minute.

### 1.2.3. HandyCafe



**Figure 1. 3: HandyCafe**

Handy Cafe features:-

1. Monitor and take the control of your clients from Server. With HandyCafe, you will never need to leave your desk. Everything will be done by one-click.
2. Create Members with Special Price and track them easily.
3. HandyCafe is multi-language. You can create your own language using Language Editor tool.
4. Manage computers from your server. Take the control of the desktop and do anything you want without leaving your desk.
5. Get screenshots from selected computer or from all Network at the same time; save them in different picture formats.
6. Use Timers to track PlayStation, Wii, XBOX, Wi-fi, Backgammon, Chess, Billard and etc. and charge your customers. Generate Timer reports anytime you need to.
7. Track and charge your customers for every printed pages automatically.
8. Generate transaction reports and export them to different formats.
9. Create unlimited cashier accounts for Server, control them and enable / disable any feature for their accounts.
10. Turn on any client computers from Server. Wake-up selected computers or all computers in your network easily.

### 1.3. Current System and Limitations

The current system in overall was managed manually. Everytime the user want to use the PC they need to fill in the paper form. User also can not choose their own PC that available. The staff need to check the available PC for user.

At the end of the month,staff need to key in the information into the Microsoft Excel document. There are risk that the paper form will lost before the month end. There are risk that the staff make mistake during the key-in process. Staff also need to generate the income statistic manually at the end of the month. There also need time and energy for the staff to do the key-in process.

### 1.4. Methodology

The methodology has been implied in the project development is the prototyping model. Prototyping is one of the software development lifecycle beside waterfall, agile and others. This method can reduce risk and limit expenses costs.

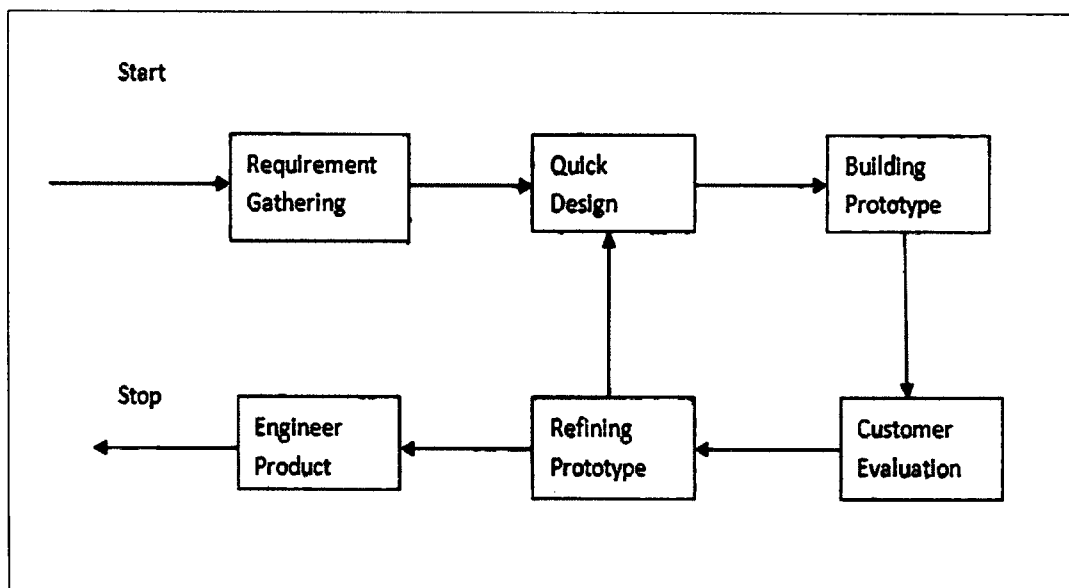


Figure 1. 4: Prototyping Model

#### a. Requirement Gathering

Requirements are gathered during the meeting between the developer and the client. The important element, input and output are also identified. The client of this system is the staff of Perbadanan Perpustakaan Awam Selangor. The information regarding the system is being gathered so that the system that will be developed will meet the client's requirement. The Software Requirement Specification (SRS) document will be produced in this phase. The SRS include product description, interface requirements, software product features and requirement traceability.

#### b. Quick Design

This process come after the requirement gathering which is the developer will design initial prototype which include user interfaces. They focus on a representation of those aspects of the system that are visible to the client which is input and output approaches. This is where the Software Design Document (SDD) will be produced. The design description and details are included in SDD.

#### c. Building Prototype

The quick design phase leads to the build of a prototype phase. In this phase, developer starts to construct and develop the prototype to be shown to the customer. The prototype is build base on the requirement and the initial design. This is where the developer start codes the prototype.

#### d. Evaluate and Refine

This process comes after the prototype building process. The prototype then will be showed to the client to be evaluated and examined by the client. Client or end-user will provide the feedback on addition or changes in their requirement base on the prototype. In this phase, Software Test Result (STR) has been produced.

e. Engineer Product

These whole processes are repeated until there no more change or addition requested from the client during the evaluate and examine phase. After all process the system becomes the end product that will be sent to the client as the final product. If the client has agreed to the end product, the user manual will be produce.

### **1.5. Outline of the report**

This report consists of six (6) chapters:

Chapter 1 is the introduction to the project. In this part contain introduction, problem statement, objective, existing system reviews, current system and limitation and report organization.

Chapter 2 is the Software Requirement Specification (SRS). In this part contain product description, interface requirements, software product features, and requirement traceability.

Chapter 3 is the Software Design Document (SDD). In this part contain system overview, system states and modes, system design description, and database design.

Chapter 4 presents the implementation of process that involved during development of this system.

Chapter 5 presents the result obtained from the implementation phase. The constraints of system also will be discussed in this chapter.

Chapter 6 presents the overall conclusions of the work presented in this study whether it can achieve the goal of this project.

## **CHAPTER 2**

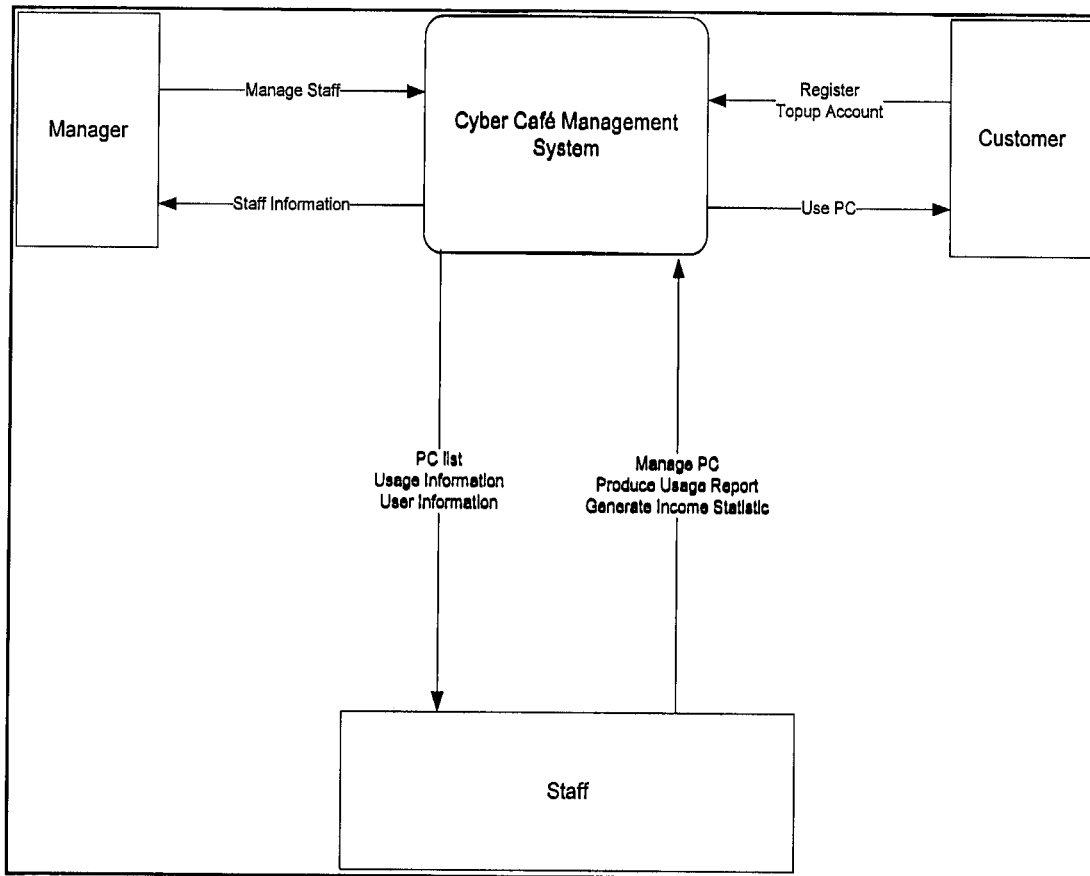
### **SOFTWARE REQUIREMENT SPECIFICATION**

#### **2.1. PRODUCT DESCRIPTION**

This part explains about Cyber Cafe Management System (CCMS) requirement and specification.

##### **2.1.1. Product Perspective**

The CCMS is an application that will be used to save cyber cafe usage information. The customer can register their computer usage through the system and their information will be store in the database. The user can choose the available PC and use the PC by login into the CCMS. The staff can view cyber cafe usage information and produce income statistic and generate usage report. Manager can manage the staff information which is they can search, add and delete the information in the database.



**Figure 2. 1: Context Diagram for CCMS**

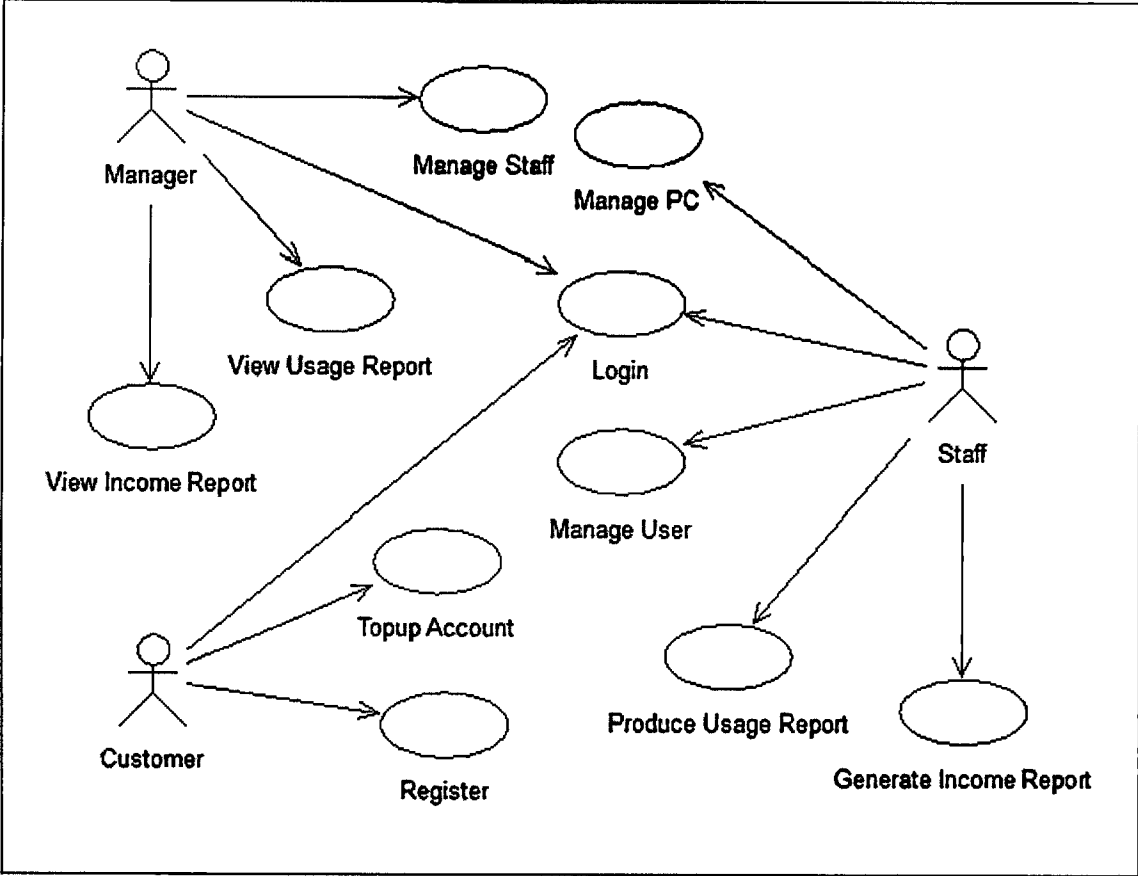
### 2.1.2. Product Function

CCMS start when customers register into the system to use to computer. The user can register on any PC in the cyber cafe. They must purchase time from the staff after they have register before they can use the PC. There are different privileges in the system for the staff, manager and customer. For customer they can only register and use the PC only while, staff can login to the system to view user at the day and produce PC usage report and income statistic, update their information in the database and manager are able to manage staff information in the database.

The process of manage staff starts when there are staff information need to be add, delete, and update in the system. For the managers they will add or update the data regarding the staff information. Especially, if there are new staff. This data need to be update so that the staff will be able to use this system with their own id and password.



The process of search data starts when the staffs want to find user information using date and year. From there, staff can produce income statistic and produce usage report. Manager also can search staff information in the database. Figure 2.2 shows the function of the CCMS system.



**Figure 2. 2: Use case diagram for CCMS system**

### 2.1.3. User characteristics

**Table 2.1: User Characteristic**

<b>User</b>	<b>Education Level</b>	<b>Background Experience</b>
<b>Customer</b>	All level education	<ul style="list-style-type: none"><li>• Have knowledge to use PC.</li></ul>
<b>Staff</b>	<ul style="list-style-type: none"><li>• At least SPM and above</li><li>• Library staff</li></ul>	<ul style="list-style-type: none"><li>• Fast learning</li></ul>
<b>Manager</b>	At least Diploma in ICT and above	<ul style="list-style-type: none"><li>• Has experience with the administration system.</li><li>• Familiar with the administration system.</li></ul>

### 2.1.4. Constraints

There are some several constraints during developing this project. The constraints are as the following:

1. Database cannot store to much data.
2. User enter false information.

## **2.2. INTERFACE REQUIREMENT**

### **2.2.1. User interfaces**

#### **2.2.1.1. Customer interfaces**

Customer need to register if they did not have register before by fill in their information registration page. Their information will be store into the database. After they have registered in the system they need to purchase timeblock from the staff. They need to login into CCMS using username and password they have registered early.

#### **2.2.1.2. Staff interfaces**

Once the staff login into the system, the system will prompt the staff to the Usage Information interface. At here they view the entire user on that day. Beside that they also can view the user by entering the date and time. Other than that staff also can produce usage report and income statistic.

#### **2.2.1.3. Manager interfaces**

After the manager login into the system, the main page for the manager will be displayed. At here they will be a list of button that will redirect the manager into the specific interface. The interface lists are search staff, add staff and delete staff.

### 2.2.2. Hardware interface

The minimum hardware requirement to develop the CCMS system:

**Table 2. 2: Hardware Requirement**

<b>Hardware</b>	<b>Specification</b>	<b>Purpose</b>
<b>PC</b>	<b>Intel Core I3</b>	<b>Development process and documentation</b>
<b>Pen Drive</b>	<b>16gb</b>	<b>Backup data</b>

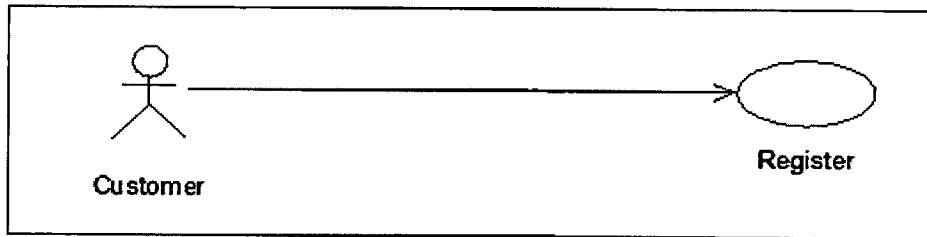
### 2.2.3. Software interface

**Table 2. 3: Software Requirement**

<b>Software</b>	<b>Function</b>
<b>Windows 7 professional</b>	<b>Current operating system for the development process.</b>
<b>MySQL Workbench</b>	<b>Database management of the system.</b>
<b>Rational Rose</b>	<b>Diagram and documentation</b>
<b>Microsoft Project</b>	<b>Gantt chart development</b>
<b>Java Netbeans</b>	<b>Development CCMS</b>
<b>Microsoft Office</b>	<b>Documentation</b>

## 2.3. SOFTWARE PRODUCT FEATURES

### 2.3.1. Use Case Register/[SRS-CCMS-100-01]



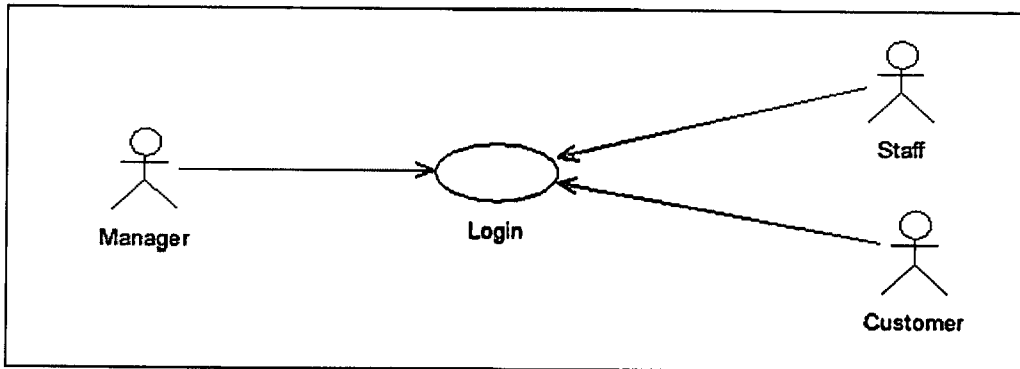
**Figure 2. 3 : Register Use Case Diagram**

**Table 2.4: Use Case Register**

<b>Use Case ID</b>	SRS-CCMS-100-01
<b>Brief Description</b>	This use case initiated by the user only. It enable user to register before they can use the PC.
<b>Actor</b>	Customer
<b>Pre-Condition</b>	User have choose the PC
<b>Basic Flow</b>	<ul style="list-style-type: none"> <li>• The system will direct the interface into the register interface [SRS-CCMS-100-01-01]</li> <li>• User fill in the form[SRS-CCMS-100-01-02] <b>(E1 : Invalid Information)</b></li> <li>• User submit the form[SRS-CCMS-100-01-03]</li> <li>• The system will prompt new user added. [SRS-CCMS-100-01-04]</li> <li>• Use case end.</li> </ul>
<b>Alternative Flow</b>	None
<b>Exception Flow</b>	<b>E1: Invalid Information</b> [SRS-CCMS-100-01-

	02] <ul style="list-style-type: none"> <li>• The system prompt the “Invalid Information” message[SRS-CCMS-100-01-02-01]</li> <li>• The system waits for the valid information. [SRS-CCMS-100-01-02-02]</li> <li>• The use case continues.</li> </ul>
<b>Post-Condition</b>	Register interface
<b>Constraints</b>	None
<b>Sequence Diagram.</b>	Appendix A-1.1: Register sequence diagram

### 2.3.2. Use Case Login [SRS-CCMS-100-02]



**Figure 2. 4 : Login Use Case diagram**

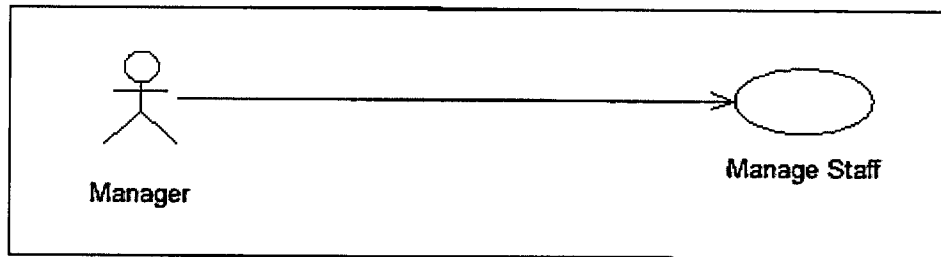
**Table 2.4: Use Case Login**

<b>Use Case ID</b>	SRS-CCMS-100-02
<b>Brief Description</b>	This use case is initiated by staff, manager and customer.
<b>Actor</b>	Staff, manager and customer.
<b>Pre-Condition</b>	Staff, Manager and customer table must exist in database.
<b>Basic Flow</b>	<ul style="list-style-type: none"> <li>• The use case starts when staff, manager or customer enters username and password.</li> <li>• The staff, manager and customer click on “Login” button. [SRS-CCMS-100-02-01]</li> <li>• The system validates the username and password whether it is exists or not. <b>(E1: Invalid username or password)</b>. [SRS-CCMS-100-02-02]</li> <li>• The system display the interface based on the staff, manager or customers. [SRS-CCMS-100-02-03]</li> </ul>

<b>Alternative Flow</b>	None
<b>Exception Flow</b>	<p><b>E1: Invalid username or password</b></p> <ul style="list-style-type: none"> <li>• The system display the error message says “Wrong username or password”. [SRS-CCMS-100-02-02-01]</li> <li>• User re-enter their username and password[SRS-CCMS-100-02-02-02]</li> <li>• The process continued until the valid username and password are entered. [SRS-CCMS-100-02-02-03]</li> <li>• Use case continues.</li> </ul>
<b>Post-Condition</b>	<p>The user will be prompted to their interface:</p> <ul style="list-style-type: none"> <li>• Staff: Cyber Cafe Management interface.</li> <li>• Manager: Staff Management system interface.</li> <li>• Customer: Customer system interface.</li> </ul>
<b>Constraints</b>	None
<b>Sequence Diagram</b>	<b>Appendix A-1.2: Login sequence diagram</b>



### 2.3.3. Use Case Manage Staff [SRS-CCMS-100-03]



**Figure 2. 5 : Manage Staff Use Case diagram**

**Table 2.5: Use Case Manage Staff**

<b>Use Case ID</b>	SRS-CCMS-100-03
<b>Brief Description</b>	The use case is initiated by the manager. It provides capability to view the staff information in the database. The manager can search, add and delete staff record in the database.
<b>Actor</b>	Manager
<b>Pre-Condition</b>	Manager have login into the system.
<b>Basic Flow</b>	<ul style="list-style-type: none"> <li>• Use case start when the manager click “Manage Staff” panel. [SRS-CCMS-100-03-01]</li> <li>• System will show staff information. [SRS-CCMS-100-03-02]</li> <li>• In the Staff Management Panel, Manager can do the following:               <ol style="list-style-type: none"> <li>1. Update Staff(A1 : Update Staff) [SRS-CCMS-100-03-03]</li> <li>2. Delete staff(A2 : Delete Staff) [SRS-CCMS-100-03-04]</li> <li>3. Add new staff(A3 : Add Staff) [SRS-CCMS-100-03-05]</li> </ol> </li> </ul>

	<ul style="list-style-type: none"> <li>• Use case end</li> </ul>
<p><b>Alternative Flow</b></p>	<p><b>A1 : Update Staff[SRS-CCMS-100-03-03]</b></p> <ul style="list-style-type: none"> <li>• Manger Click "Update Staff" panel[SRS-CCMS-100-03-03-01]</li> <li>• System prompt the update staff panel[SRS-CCMS-100-03-03-02]</li> <li>• Manager enter the staff id[SRS-CCMS-100-03-03-03]</li> <li>• Manager click search[SRS-CCMS-100-03-03-04]</li> <li>• The system show the staff information[SRS-CCMS-100-03-03-05]</li> <li>• Manager edit staff information[SRS-CCMS-100-03-03-06]</li> <li>• Manager Click Update Button[SRS-CCMS-100-03-03-06]</li> <li>• Use case continues</li> </ul> <p><b>A2 : Delete Staff[SRS-CCMS-100-03-04]</b></p> <ul style="list-style-type: none"> <li>• Staff Click "Delete Staff" button[SRS-CCMS-100-03-04-01]</li> <li>• System prompt the all staff name and id[SRS-CCMS-100-03-04-02]</li> <li>• Staff select staff to delete[SRS-CCMS-100-03-04-03]</li> <li>• Staff click delete staff[SRS-CCMS-100-03-04-04]</li> <li>• Use case continues</li> </ul> <p><b>A3 : Add Staff[SRS-CCMS-100-03-05]</b></p> <ul style="list-style-type: none"> <li>• Staff Click "Add Staff" button[SRS-CCMS-100-</li> </ul>