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WXES 3182 : Thesis Project



Electronic Record Book Management System (E-Record Book)

Perpustakaan SKTM

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Abstract

Electronic Record Book Management System (E-Record Book) is a clientserver application that provides the headmaster and teachers with a more efficient and secure environment in managing and handling the electronic version of record books maintained by teachers. It is developed to support all operations on the manual record books used in schools nowadays.

The objectives of E-Record Book are:

- To provide teachers with ease of recording students' particulars, lesson plans and other related matters via an easy-to-use Web interface.
- To provide the headmaster with a better monitoring and validation system on teachers' record books.
- To create a better management environment by providing the headmaster and teachers with an online medium for effective communication and discussion.
- To eliminate the unnecessary procedures in updating manual record books, and thus, reducing teachers' workload.
- To enable teachers to update their own record book after working hours.
- To provide a more secure way for the school administrator or school clerk to handle information on teachers and students.

To provide such a good teaching and learning practices in schools, E-Record Book has been developed to provide 3 main sections: Administrator Section, Headmaster Section and Teachers Section. The Administrator Section allows the school administrator or clerks to create user accounts for teachers and the headmaster, informing any updates of events in the school and creating students' profiles and examination records.

The Headmaster Section allows the headmaster to monitor the teachers' progress in teaching and to validate their lesson plans. Besides, the headmaster will also be able to post any comments on any written syllabus plan and/or lesson plans. In addition, the headmaster has the privilege to browse through any information on the teachers' profiles, timetable, syllabus plans, lesson plans and students' records.

The Teacher Section allows teachers to manage their own E-Record Book as like the manual record book. They will be able to prepare their own timetable, syllabus plans, lesson plans, students' details and grades. Moreover, they will have the privilege to add or update the existing records and to check whether the headmaster has verified their record book.

E-Record Book has been developed to help the headmaster and teachers to interact and deal with record books management more efficiently and effectively. This is also a way to promote a paperless environment, thus revolutionizing the way the record books are currently managed.

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Chapter 1 - Introduction

1.1 Overviews

Teaching and learning process become more challenging nowadays to achieve the targets in Malaysian Smart School application. The Malaysian Smart School application is the government's initiative to enhance learning institutions through a 'Teaching-Learning' process of curriculum, pedagogy, assessment and teaching-learning materials. It will provide better teaching-learning practices and school management in order to prepare children for the Information Age and to achieve the goals of the National Educational Philosophy. (www.mdc.com.my)

In order to achieve that target, the school has to play a major role especially the teachers who have to prepare themselves in the era of new technology. This also includes the manual record management system which is currently used by teachers in schools.

Thus, technology should be adopted to help school headmaster and teachers to provide a more efficient record management system in school. That's why Electronic Record Book Management System (E-Record Book) is needed. E-Record Book is a web-based system that helps both school headmaster and teachers to interact and deal with the teaching and learning process more effectively.

E-Record Book enables teachers to create lesson plans for various classroom based on the teaching subjects, update the students' records and their grades, and manage personal time-table and classroom time-table. Thus, teachers can prepare the record book for daily lesson's planning faster and effective. They only need to access the Web to update the necessary information for electronic record book.

The main purpose of the manual record book is to provide the ease for the school headmaster to perform checking and monitoring on the teachers' activities and the experience or progress in every classroom within a short period. With this new E-Record Book, the headmaster does not have to collect all the record books from teachers by the end the weekdays to check and validate them. Due to the instance access through the Web, he or she can directly monitor the teacher's progress of the day with certain clicks and gives comments.

With E-Record Book, it can increase effectiveness and easiness in the teaching and learning process. It would certainly give space for the schools in Malaysia to increase the education quality to produce teachers with better quality.



2

1.2 Project Motivation

Producing high quality teachers are important for the school institutions growth in terms of management. E-Record Book will make teachers to conduct the teaching and learning process more effective and comfortable to achieve the objective of this system.



Figure 1.1: Usual stages for teacher to update a record book

1.2.1 Current Practices Performed In Manual Record Book

Below are the practices and their descriptions to be performed by the teacher in the record book :

> To fill up the personal time-table and classroom time-table.

The teacher should write down the name of subjects taught in certain classes with their durations for five days in a week. If the teacher holds the post as a form teacher, he/she also needs to attach the class time-table.

To fill up the "takwim sekolah" (annual school events)

This includes the school's activities and holidays through out the year.

To write down the teacher's own profile.

Teacher's profile includes name, gender, race, date of service, grade of post and others.

To record the daily teaching and learning process.

The teacher should write down the lesson planning which comprises of the subject's name, class, time, theme of the subject, its teaching scope and result of the teaching.

To update the students' progress record.

The teacher needs to record the grades for the students for the subjects taught based on their monthly tests, mid-semester and final semester examinations.

1.2.2 Problems with Current Manual Record Book

As we can see through figure 1-1, the current tasks performed by teachers in the record books consist of weaknesses. Some major weaknesses are as below:

Time-consuming and inefficient

Updating the record book manually needs a lot of time and preparations. Teacher cannot use the record book once it has been handed out to the headmaster for validation.

Wastage of resources

Printing the record books which is bulky and hard covered would involve higher cost then if it were prepared electronically. It involves also wastage of spaces and human resource to collect all the record books from teachers.

Ineffective communication

Any inquiries regarding the record book from headmaster can only be done in school days. It is because normally teachers are hard to be reached when they are after work.

1.2.3 Solution for the Current Situation

An effective online system is needed to solve the current problems faced in managing the record book in school. The system should be able to bring the headmaster and teachers closer to each other, make it easier to monitor the teacher's progress in teaching, students' achievement in their academic studies and eliminate the usual stages to update the record book and hand out it for validation.

Here is where the Electronic Record Book Management System (E-Record Book) plays these roles. It can shorten the distance between headmaster and the school teachers. E-Record Book can make the teachers' jobs easier and increase the effectiveness in the teaching and learning process.

1.3 Project Objectives

Core objectives of the project are as below:

- To enable the teachers a better record management system with the ease of recording books in the Web.
- To provide the headmaster a better monitoring and validation system on the teachers' record books.
- To enable the headmaster and teachers to communicate well to create a better management environment.
- To eliminate some unnecessary procedures in updating the record book and reduce teachers workload.
- To enable the teachers to update the record book after working hours.

1.4 Project Scope

Generally, E-Record Book can be divided into three major parts, which are the **Administrator Section**, **Headmaster Section** and **Teachers Section**. The School Administrator Section is to manage the system including give approval to headmaster and teachers to use the system. Headmaster Section allows school headmaster to monitor, check the teachers' progress in teaching and validate their record books. The Teachers Section allows teachers to manage their own record book such as prepare their lesson plan and update the students' grades in the electronic record book in Web environment.

The project scope of E-Record Book for Administrator Section includes:

- Develop a web-based management system to manage the headmaster and teachers who are using the system.
- Develop a web site to view the relevant information in the electronic record book such as Piagam Sekolah, School Objectives and School Annual Events.

The project scope of E-Record Book for Headmaster Section includes:

- Develop a web-based monitoring system to browse through the teachers' record books.
- Develop a web-based checking system to validate the electronic record books and make comments on the book.

The project scope of E-Record Book for Teachers Section includes:

- Develop a web site to enable teachers to login differently into system.
- Develop a web-based application for teachers to update their time-table, own profile, syllabus of subjects, daily lesson plan, students records and grades in their electronic record books.
- Develop a web-based to enable teachers to submit their record book to headmaster for validation by the end of the weekday.

1.5 Expected Outcome

Expected outcomes of E-Record Book for Administrator Section include:

A control that can create user login and password for headmaster and teachers and remove user account.

Expected outcomes of E-Record Book for Headmaster Section include:

- Monitoring management panel to view every sections in electronic book for every teacher in school.
- Validation panel to validate the electronic record book after checking.
- Comment and inquiries panel to post comments or inquiries to teachers regarding their record books.

Expected outcomes of E-Record Book for Teachers Section include:

- Web information about the School Objectives, School Annual Events, Organization Chart and Teacher's Roles in school.
- Teacher's profile to input own profile.
- Time-table management panel to update personal time-table or classroom timetable.
- Subject's syllabus to update the syllabus for every subject taught by teachers.
- Daily subject's planning to input time, date, name of subject, class, objective, learning scope and result of learning for each subject.
- Student's record and grade to input student's personal information, grades and marks for the subjects taken in class.

1.6 Project Schedule for E-Record Book

ID	Task Name	Duration	Start	Finish	Predecessors	06/02	07/02	08/02	09/02	10/02	11/02	12/02	01/03
1	Preliminary Study and Planning	14 days	Mon 06/10/02	Thu 06/27/02			h						
2	Literature Review	16 days	Fr 05/28/02	Fr 07/19/02	1		h		1				
3	System Analysis	16 days	Mon 07/22/02	Mon 08/12/02	2			Ъ	1				
4	System Design	18 days	Tue 08/13/02	Thu 09/05/02	3				h				
6	Prototype	6 days	Fri 09/06/02	Fr 09/13/02	4			A	The I				
0	Development and Coding	60 days	Mon 09/16/02	Fri 12/06/02	6				and the second second	and the second		h	
7	Unit Testing	20 days	Mon 12/09/02	Fr 01/03/03	8								h
8	System Testing	10 days	Mon 01/06/03	Fr 01/17/03	7		4	1.00				-	
•	Dooum entation	6 days	Mon 01/20/03	Fri 01/24/03	8		1.12	1					-L
10	Implementation and Maintenance	5 days	Mon 01/27/03	Fri 01/31/03	9		And a state of the	1	1 . 1				
Projec		Task	Participation and an and an	Address of the second				-		-			
	t: E-Record Book	Solit	Construction of the second second	Sum r	nary 💭			Extern	al Tasks		- Wint 2	1	
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Figure 1.2 : Project Schedule

Chapter 2 - Literature Review

2.1 Analysis Studies

2.1.1 Case Study 1 - Buku Rekod Mengajar Guru Sekolah Menengah



Figure 2.1: The main cover of Buku Rekod Mengajar Guru Sekolah Menengah

This is the official record book for secondary teachers of Sekolah Menengah Kebangsaan Sri Rahmat in Johor Bahru. It is very important for the teachers who need to make comments on the events during their daily teaching operations. Teachers can make a record of their students' progresses in every subject. The book can be referred once the other teacher has replaced the current teacher on a certain subject. Headmaster of the school can used it as a guide to evaluate the experience and progress of their teachers in a short time. (Pekeliling Kementerian Pendidikan 256 Buku Rekod Untuk Guru, 1956)

Some of the contents of the book are as below:

- > The Takwim Sekolah section
 - The start date and finish date for school days, semester holidays for every Semester 1 and Semester 2 are listed.
 - The date for the public holidays and school events are also listed in the book.
- The Teacher Profile section
 - The teacher has to fill in their profile which include name, gender, religion, IC Number, qualifications, etc.
- The Time-table section
 - Class time table can be used by the form teacher as a reference and analyze of every period of the subjects is viewed.
 - Personal time table also available for teacher who teaches different subjects for certain classes in a week.
- > The Lesson Plan section
 - Teacher can record the time and name of the teaching subject for certain class and write down his or her lesson plan based on the subject.
 - Lesson plan is divided into three parts which are the title of the chapter, its objectives and contents.

The Student Examination Record section

 Marks and grades for every students who have taken the subject will be recorded for monthly tests, mid-term and final examination.

2.1.1.1 Result of Study

Strength:

- Easy to retrieve information manually from the book.
- > Able to monitor teachers' progress and performance by the headmaster.
- Able to track down students' performance by the teachers and headmaster.

Weaknesses:

- Low protection information normally the record books are kept in the staff room and they are easily accessed by public.
- Need to hand out to headmaster for checking and validation teachers have to hand out their record books to headmaster by the end of the weekdays.
- Waste of resources lots of paper is used annually to manufacture the books and the cost of manufacturing the books are money consumption.
- Bulky and heavy the books are quite heavy and inconvenient for the teachers to bring along with them.

2.1.2 Case Study 2 - ThinkWave Educator



Figure 2.2: The main page of ThinkWave Educator application

This (as shown in figure 2-2) is a stand-alone Windows application designed by ThinkWave company. The application can help teachers to record all the necessary items in the schools includes records of students, classes, test and assignments, attendance, results, reports, lessons, calendar and web. It also has the ability to publish the students' grades and other classroom information online on ThinkWave.com so that their students and parents can check their grades. (www.thinkwave.com)

Some of the modules in the application are:

> Main page module

Consists of links to access the modules in the application.

Students module

- Consists of student information such as name, student number, grade level, e-mail and notes.
- Teachers able to create a new class, new students or enroll students into their existing classes.

Classes module

- Provides class information which includes name of the class, term, level, location of the classroom and type of grade.
- Teachers can also set their meetings and weighting for their marks of subjects in the same module.

> Web module

- By publishing grade book to ThinkWave.com, the students and their parents can check their own individual grades, attendance and other classroom information online.
- The teacher will need to enter his or her publishing key from ThinkWave in order to publish successfully the information online.

2.1.2.1 Result of Study

Strength:

- Manageability the application provides most of the record management tools.
- > Publishing online able to publish on ThinkWave.com for students and parents

to check their grades.

Universal accessibility – people who have access key in the Internet can able view the data in ThinkWave.com.

Weaknesses:

- Limited space the application provides limited workspace for the teachers to perform their daily tasks and have to scroll to the right of the page to update their records.
- High dependency users of this application have to depend on the ThinkWave server to publish their grade book and class information.
- Time-consuming the process of learning up how to use this application may take time for the end-users.

2.2 Software Architecture

A system's architecture describes the system in terms of a set of architectural units, and a map of how the units relate to one another. The more independent the units, the more modular the architecture and the more easily user can design and develop the pieces separately. (Wasserman, 1996) There are a few software architectures available now: mainframe architecture, client-server architecture, two-tier architecture and threetier architecture.

2.2.1 Mainframe Architecture

In mainframe system architecture, all operation is within the central host computer. User interacts with the host through a terminal that captures keystroke and sends that information to the host. Mainframe architecture is not tied to a hardware platform. User interaction can be cloned using PCs and UNIX workstations. A limitation of mainframe architecture is that it does not easily supports graphical user interface or accesses to multiple databases from graphically dispersed sites.

2.2.2 Client-Server Architecture

2.2.2.1 Client-server

Client-server is network architecture in which each computer or process on the network is either a client or a server. Client-server architecture implies a cooperative processing of requests submitted by a client, or requester, to the server, which processes the requests and returns the results to the client. The client manipulates the data and presents the result to the user. (Dixon, 1996)

2.2.2.2 Client

Client is a networked information requester, usually a PC or workstation, that can query database and/or other information from a server. Clients rely on servers for resources, such as files, devices, and even processing power.

2.2.2.3 Server

Server is a computer, usually a high-powered workstation, a minicomputer, or a mainframe, that houses information for manipulation by networked clients. Server is dedicated to managing disk drives (file servers), database (database servers), printers (print servers), or network traffic (network servers).



Figure 2.3: One-to-One Client Server

Client-server solutions can be in a many-to-one design that is more than one client typically makes requests of the server.

2.2.3 Two-Tier Architecture

Two-tier architecture refers to client/server architectures in which the user interface runs on the client and the database is stored on the server. The actual application logic can run on either the client or the server. There are only the architecturally tiered data server and client.



Figure 2.4: Many-to-One Client Server



Figure 2.5: Two-Tier Architecture

2.2.4 Three-Tier Architecture

Three-tier architecture is a special type of client/server architecture consisting of three well-defined and separate processes, each running on a different platform: The three tiers consist of client, application server and database server.

2.2.4.1 Client-tier

Client-tier is the user interface, which runs on the user's computer.

2.2.4.2 Application-server-tier

Application-server-tier is the functional modules that actually process data. This middle tier is not present in 2-tier architecture in this explicit form. This tier protects the data from direct access by the clients.

2.2.4.3 Data-server-tier

Data-server-tier is a database management system (DBMS) that stores the data required by the middle tier.



Figure 2.6: Three-Tier Architecture

2.2.5 Conclusion for Software Architecture

The three-tier architecture is chosen for this project because it is easier to implement and design. The three-tier design has many advantages over traditional two-tier or single-tier designs, because:

- The added modularity makes it easier to modify or replace one tier without affecting the other tiers.
- Separating the application functions from the database functions makes it easier to implement load balancing.

In this project, the three tiers consists web browser as client-tier, web server as application-server-tier and database server as the data-server-tier. A web server can be defined as a computer program that receives HTTP requests from web browser for

document. Web server will achieve and process the data from database server. Web server return both the document and its type to the client so that the client knows what to do with the document or data once it is received. The most common document type transferred between web server and client is HTML. (H.M Deitel, 2000)

2.3 Network

A network is nothing more than two or more computers connected together by a cable so that they can exchange information. There is a few types of network can be considered to be used in this project: LAN, WAN, internet, intranet

2.3.1 Local-Area Network (LAN)

A LAN is a connection between two or more computers, which allows users to share files, programs, or data with a minimum of effort. A LAN is usually local; this means that the machines are located in one physical location – like a building or just one floor of a building. A LAN tends to use just one set of networking options. For example, a LAN generally uses one network operating system, one type of cable, and one logical topology. A LAN is usually set up for a small group of people such as a department or a division. A LAN is not limited to any particular computer operating system. DOS, Macintosh, and UNIX can all run across a LAN. Actually, they can all run across the same LAN at the same time, if the right software is used.

2.3.2 Wide-Area Network (WAN)

While the geographic distinctions of "local" and "wide" area networks imply a difference in the distance between network nodes that is not always the case. By definition, a Wide Area Network (WAN) is a government-regulated public network or privately owned network that crosses into the public network environment. It doesn't matter whether the area being bridged is across the country or across the street. If the geographical separation crosses over a public thoroughfare, a WAN is required to make the connection.

The WAN is typically used to connect two or more local area networks (LANs). As you know, a LAN is a privately owned communications system that is designed to allow users to access and share resources (computers, printers, servers) with other users. LANs that are interconnected by a WAN may be located in the same geographical area, such as an industrial park or campus setting, or in geographically separate areas, such as different cities or even different regions.

2.3.3 Internet

Internet is a collection of communication networks interconnected across 2 or more LANs or sub-networks. It is a global network connecting millions of computers. More than 100 countries are linked into exchanges of data, news and opinions.

Each Internet computer, called a host, is independent. Its operators can choose which Internet services to use and which local services to make available to the global Internet community.

There are a variety of ways to access the Internet. Most online services, such as America Online, offer access to some Internet services. It is also possible to gain access through a commercial Internet Service Provider (ISP).

2.3.4 Intranet

Intranet is a term used to refer to the implementation of internet technologies within a corporate organization rather than for external connection to the global Internet. It is a network based on TCP/IP protocols (an internet) belonging to an organization, usually a corporation, accessible only by the organization's members, employees, or others with authorization. An intranet's Web sites look and act just like any other Web sites, but the firewall surrounding an intranet fends off unauthorized access.

Like the Internet itself, intranets are used to share information. Secure intranets are now the fastest-growing segment of the Internet because they are much less expensive to build and manage than private networks based on proprietary protocols.

2.3.5 Conclusion for Network

Since E-Record Book is an web based application that may access by teachers and headmaster in certain schools, Internet is the most suitable network to be used in this project. Users from different states can access the system if they have Internet access. This means that users can manage their record books at anytime and anywhere despite of the limitation of geographical barrier.
2.4 Security Technology

Security is an important part in developing a web site. Without a good security system, a web site can be hacked and make the user to loose confidence of web site. SSL is considered for securing the transport of information in DECP.

2.4.1 Secure Sockets Layer (SSL)

SSL is a security protocol designed to ensure data moving between a browser and a server remains private. In theory, someone could intercept information, such as a credit card number while it is in transit between the browser and the server. One solution to prevent information from being usable if it is intercepted is to encrypt it. The most widely implemented encryption system for the web at present is SSL.

SSL is an open, non-proprietary protocol developed by Netscape Communication. It uses industry, accepted RSA public key cryptography for authentication and encryption. The SSL protocol was designed to provide a data security layer between TCP/IP and application protocols such as HTTP, Telnet, NNTP or FTP. SSL provides data encryption, server authentication, message integrity and optional client authentication for TCP/IP connection.

The advantage of the SSL Protocol is that it is application protocol independent. A "higher level" application protocol (e.g. HTTP, FTP, TELNET, etc.) can layer on top of the SSL Protocol transparently. The SSL Protocol can negotiate an encryption algorithm and session key as well as authenticate a server before the application protocol transmits or receives its first byte of data.

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2.5 Web Server

A Web server is a program that serves Web pages upon request. Every Web server has an IP address and possibly a domain name. For example, if an user enter the URL http://www.thinkwave.com/index.html in your browser, this sends a request to the server whose domain name is thinkwave.com. The server then fetches the page named index.html and sends it to the user's browser. Web servers and browsers communicate using HTTP (Hypertext Transfer Protocol), a simple but effective language for requesting and transmitting data over a network.

Web servers come in various shapes and sizes. They run under a variety of operating systems, have varying levels of power and complexity, and range in price from rather expensive to free. Studies on several web servers will be carried out: Apache, Microsoft Internet Information Server (IIS) and Personal Web Server (PWS).

2.5.1 Internet Information Server (IIS) 5.0

Microsoft IIS 5.0 is an enterprise-level Web server that is included with Windows 2000. This version, which comes exclusively as part of the Windows 2000 Server operating system, contains many new features along with performance and reliability enhancements. (H. M. Deitel, 2000)

IIS 5.0 is good as both a first-time Web server for those familiar and comfortable with Windows operating systems, and a high-end server for hosting providers and large corporate installations. It handles the basics well and is better integrated in Windows than previous versions. IIS 5.0 also comes with performance and feature enhancements that will be attractive for mission-critical tasks.

The ideal computer to run IIS on is at least a 200 MHz Pentium with 128 MB of RAM. Organizations should plan on doubling the RAM and CPU speed if they intend to run Advanced Server's clustering, SQL or Transaction services on the same machine as the Web server.

2.5.2 Personal Web Server (PWS)

PWS is entry-level/mid-range server for Windows 9x/NT platforms. It is a scaled-down version of the commercial Information Internet Server (IIS) included with the Server edition of Microsoft Windows NT. PWS is a great entry-level Web server that makes it easy to publish personal home pages, serve small Web sites, and share documents via a local intranet.

PWS is one of the best servers available for helping to get users up and running quickly. Wizards are included to guide users through the process of setting up home pages and sharing files, and the PWS administrator reduces the complexity of actually running the Web server itself. Users can also use the familiar Explorer interface or PWS's Personal Web Manager to share directories, start and stop the server, and view Web site statistics.

One of the best uses for PWS is as a platform for testing out Web sites on Windows 95/Windows NT Workstation computers before hosting them on the Internet. This allows users to check the validity of links, scripts, and applications as well as to ensure that the overall organization of the site is functioning correctly. PWS presents the ability to develop transactional Web applications using the Microsoft Transaction Server. Overall, while most large enterprises will likely bypass Microsoft's Personal Web Server for the high-end Internet Information Server, PWS will remain one of best available options for individuals wanting to serve their own personal home pages and for small organizations needing to host their own Web sites.

2.6 Operating System

Operating system (OS) is a platform that performs basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers.

Besides that, the OS makes sure that different programs and users running at the same time do not interfere with each other. For security, OS ensures that unauthorized users do not access the system. OS provides a software platform to allow application programs run on it.

The most popular operating systems currently are Windows 98, Linux, Windows 2000 and Windows XP.

2.6.1 Windows 98

Windows 98 is based on the popular Microsoft Windows 95 Operating System, and is designed for the consumer market. Windows 95/98 were designed for backward compatibility with older DOS and 16bit programs, as well as providing a platform for the newer (back in 1995) 32 bit programs.

Windows 98 works better by making it simple to access the Internet and by providing better system performance along with easier system diagnostics and maintenance. With Windows 98, users' system plays better as well with support for the latest graphics, sound, and multimedia technologies, the ability to easily add and remove peripheral devices with support for Universal Serial Bus (USB), and it also enables users to watch TV on PC. Besides that, Windows 98 is compatible with more software (including games) and hardware.

2.6.2 Linux

Linux has gradually become a popular operating system for Internet/ intranet serving purposes. With a host of performance enhancements that will benefit Web sites and Internet sites of all sizes, Linux is a stable and high-performance operating system for Internet usage.

Linux has made progress, primarily in functionality important to Internet infrastructure and Web server capabilities, including a greater selection of drivers, easier installation, and GUI-based front ends for Web administration and window management.

2.6.3 Windows 2000

Windows 2000 is Microsoft's latest version of popular Windows NT Operating System. Windows 2000 Server has big improvement over Windows NT 4.0. The changes, both fundamental and cosmetic, have made Windows 2000 faster, more reliable, heavier-duty, and easier to use.

2.6.4 Windows XP

Windows XP Professional has great capability with its overall security which has been improved, making it even safer for users to shop and browse on the Internet. Users can also communicate with other people on other networks without worrying about compromising their privacy or personal data files. Performance in Windows XP is at an all-time high, allowing users to use more programs and have them run faster than ever.

Windows XP Professional is dependable and stable, so users can always rely on the performance and effectiveness of their computer. Best of all, compatibility with other programs is better than ever.

Windows XP Professional has many features and tools that will make using computer easy, effective, and entertaining. For example, a user can use Remote Desktop to access his work computer and its resources from home, and to view files and documents on his computer's desktop from a co-worker's computer. With NetMeeting he can have virtual meetings with anyone, anywhere, or even participate in discussions using audio, video, or chat.

2.7 Database Server

A database is a structured collection of data. To add, access, and process data stored in a computer database, a database server is needed. There are several database server available currently: Oracle, SQL Server and MySQL.

2.7.1 Oracle

Oracle is a multi-user database. It provides unprecedented ease-of-user and is pre-tuned and pre-configured for today's dynamic workgroup and line-of-bus environment.

Oracle includes a fully integrated set of easy-to-use management tools, full distribution, replication and web features. Oracle also provides the highest levels of availability through fast fail over, easier management, and zero data loss disaster protection, with Data Guard, the only complete data protection solution available on the market.

Oracle can runs on UNIX, Linux and Windows platform. However, it is expensive and separate licenses are required for each of its database engine.

2.7.2 Microsoft SQL Server

Microsoft SQL Server 2000 is a single process, multithreaded relational database server primarily intent for transactional processing. It is based on the client/server architecture, which divides processing into two components: a front-end, or client component, that run on a local workstation and a back-end, or server component, which runs on a remote computer.

SQL Server 2000 able to support databases of almost any size. In fact, SQL Server database and the applications the user use with the database typically takes one of two forms which are Online Transaction Processing (OLTP) system, in which users continually make changes to the data in the database. For example, the database system for recording customers' orders at Amazon.com is an OLTP system. An Online Analytical Processing (OLAP) system, in which user primarily focus on analyzing the data in the database. He typically don't make many changes to such databases. For example, if he has four different retail stores, each with its own inventory and order database. In this environment, he would use an OLAP system to combine the data from each of the four databases for performing analysis such as sales trends, customer demographics, and so on.

2.7.3 MySQL

MySQL is a relational database management system. MySQL stores data in separate tables rather than putting all the data in one big storeroom. This adds speed and flexibility. The tables are linked by defined relations making it possible to combine data from several tables on request.

MySQL is a small, compact, easy to use database server, ideal for small and medium sized applications. It is client/server implementation that consists of a server and many different client programs. It is available on a variety of UNIX platforms, Linux, Windows NT, Windows 95/98 and Windows 2000.

MySQL is Open Source Software. Open Source means that it is possible for anyone to use and modify. Anybody can download MySQL from the Internet and use it without paying anything. Anybody can study the source code and change it to fit their needs.

2.8 Data Access Technology

E-Record Book will require data access technology to enable communication and access to its various databases. A few of the Microsoft Data access strategy and technology is reviewed and considered.

2.8.1 Universal Data Access (UDA)

UDA is a high-level specification developed by Microsoft for accessing data objects regardless of their structure. The strategy of Universal Data Access is to assure open, integrated, standards-based access to all types of data, which is from SQL to non-SQL to even unstructured data across a wide variety of applications, from traditional client/server to the web. The main components of UDA are ADO, OLE DB and ODBC.

2.8.2 ADO (ActiveX Data Object)

ActiveX Data Object (ADO) is the Microsoft's newest high-level interface for data objects that most applications developers will use.

ADO is designed to eventually replace *Data Access Objects (DAO)* and *Remote Data Objects (RDO)*. Unlike RDO and DAO, which are designed only for accessing relational databases, ADO is more general and can be used to access all sorts of different types of data, including web pages, spreadsheets, and other types of documents.

ADO provides consistent access to data for creating a front-end database client or middle-tier business object using an application, tool, language, or even an Internet browser. ADO is the single data interface for developers creating 1 to n-tier client/server and Web-based data-driven applications.

2.8.3 OLE DB

OLE DB Providers are the data access engines or services, as well as the business logic components that these applications can use in a highly interoperable, component-based environment.

OLE DB is a set of interfaces that are designed to provide data access to *all* data, regardless of type, format or location. It effectively make database in several components and related data processing functionality, breaking it up into interoperable components that can run as middleware on the client or server across a wide variety of applications. The OLE DB architecture provides for components such as direct data access interfaces, query engines, cursor engines, optimizers, business rules and transaction managers.

The concept of OLE DB is to explode the database into its basic parts. OLE DB delivers components, external to the database, that provide this typical database functionality in reusable component architecture. These components, because they are not directly linked to the database itself, can be shared across multiple applications, systems and data stores to provide a higher level, universal interface.

2.8.4 ODBC (Open Database Connectivity)

ODBC is a standard database access method developed by Microsoft Corporation. The goal of ODBC is to make it possible to access any data from any application, regardless of which database management system (DBMS) is handling the data. ODBC manages this by inserting a middle layer, called a database *driver*, between an application and the DBMS. The purpose of this layer is to translate the application's data queries into commands that the DBMS understands. For this to work, both the application and the DBMS must be *ODBC-compliant* — that is, the application must be capable of issuing ODBC commands and the DBMS must be capable of responding to them. Since version 2.0, the standard supports SAG SQL.

2.9 Language

2.9.1 ASP

Active Server Pages is an open, compile-free application environment in which programmers can combine HTML, scripts, and reusable ActiveX server components to create dynamic and powerful Web-based business solutions. Active Server Pages enables server-side scripting for Internet Information Services (IIS) with native support for both VBScript and Jscript.(Microsoft site, 1998) When a browser requests an ASP page, the Web server generates a page with HTML code and sends it back to the browser.

One of the most important features about ASP is that it allows user to easily access data and put it on a Web page. User can simply display data from an ODBCcompliant database, or use ASP to make decisions about what to display on a Web page. User can then format the results in any way that they please.

Another important ASP feature is the ability to use cookies to store and retrieve

information. The Request object has a Cookie collection, and user can use this in data processing.

2.9.2 PHP

PHP (Hypertext Preprocessor) is a open-source server-side, HTML embedded scripting language used to create dynamic Web pages for e-commerce and other Web applications. In an HTML document, PHP script (similar syntax to that of Perl or C) is enclosed within special PHP tags. Because PHP is embedded within tags, the author can jump between HTML and PHP (similar to ASP and Cold Fusion) instead of having to rely on heavy amounts of code to output HTML. And, because PHP is executed on the server, the client cannot view the PHP code.

PHP offers excellent connectivity to most of the common databases (including Oracle, Sybase, MySQL, ODBC and many others). PHP also offers integration with various external libraries, which allow the developer to do anything from generating PDF documents to parsing XML.

PHP is the natural choice for developers on Linux machines running Apache server software, but runs equally well on any other UNIX or Windows platform, with Netscape or Microsoft Web server software. PHP also supports HTTP sessions, Java connectivity, regular expressions, LDAP, SNMP, IMAP, COM (under windows) protocols. It also supports WDDX complex data exchange between virtually all Web programming languages.

2.9.3 Cold Fusion

Cold Fusion is a product created by Allaire Corporation of Cambridge, Mass. that includes a server and a development toolset designed to integrate databases and Web pages. Cold Fusion web pages include tags written in Cold Fusion Markup Language (CFML) that simplify integration with databases.

Coding for Cold Fusion pages is much more straightforward and intelligible than JavaScript, VBScript, C++ or Java, even while providing high levels of functionality. The tags themselves conform to the basic HTML syntax of tag name followed by tag attributes, and are enclosed in the familiar HTML brackets (>). Most tags are two-sided, and can be combined with each other and with HTML elements to create custom tags for use in Cold Fusion applications.

2.9.4 JSP (Java Server Pages)

Java Server Pages[™] (JSP) is a web-scripting technology that can mix static HTML content with server-side scripting to produce dynamic output. By default, JSP uses Java as its scripting language; however, the specification allows other languages to be used, just as ASP can use other languages (such as JavaScript and VBScript). While JSP with Java will be more flexible and robust than scripting platforms based on simpler languages like JavaScript and VBScript.

JSP provides a number of server-side tags that allow developers to perform most dynamic content operations. So developers who are only familiar with scripting, or even those who are simply HTML designers, can use JSP tags for generating simple output. Advanced scripters or Java developers can also use the tags, or they can use the full Java language if they want to perform advanced operations in JSP pages.

2.9.5 JavaScript

JavaScript is a scripting language developed by Netscape to enable web authors to design interactive sites. JavaScript is different from Java. Although it shares many of the features and structures of the full Java language, it was developed independently. JavaScript can interact with HTML source code to enable web authors to spice up their sites with dynamic content. JavaScript is endorsed by a number of software companies and is an <u>open</u> language that anyone can use without purchasing a license. It is supported by recent browsers from Netscape and Microsoft, though Internet Explorer supports only a subset, which Microsoft calls Jscript.

2.10 Authoring Tools

2.10.1 Microsoft Visual InterDev 6.0

Microsoft Visual InterDev is a Web development tool designed for programmers to create an interactive Web page with data is as simple as dragging and dropping, setting some properties, and saving the page. No coding is required in using Visual InterDev.

Visual InterDev includes site design tools that help user easily plan pages, organize their links, and apply a consistent theme to your Web site. Visual InterDev includes three ways to view your HTML and ASP pages.

These three views are the cornerstone of Visual InterDev. They replace the simple source code editor included with Visual InterDev 1.0 and supports design-time controls (DTCs), debugging, statement completion, and object browsing.

The new data environment provides easy commands for making Web application data-driven. Instead of burying complex SQL statements deep within an .asp file, the statements are now exposed, maintained, and reused at the application level through the data environment under the Global asp file. Instead of modifying the query within each page, developers can modify the data command and changes are incorporated into files that reference that data command. Developers also can drag fields from the command directly onto HTML or ASP page.

However, for those so inclined, Visual InterDev exposes a full object model that allows developers to fine-tune their application, perform client validation, and have full control of Web application. Visual InterDev supports not only full-reach applications, using the ASP engine to produce simple HTML pages for the client, but also DHTML and Microsoft Internet Explorer 4.0 data binding for a richer client experience.

2.10.2 Notepad

Notepad is the world's most versatile HTML editing tool absolutely free when purchase this software: Windows version 2.0 and above.

Notepad has one of the simplest user interfaces of any Internet Web authoring tools. The menus are logically laid out, conforming to all standards in design, so users can understand them before use Notepad. Notepad has the same interface for all versions of Windows, so moving over to the latest version of Windows should not hamper HTML code creation. The Notepad web-authoring tool is compatible with every single standard of Internet presentation medium yet devised. Notepad was designed to have a very small application footprint, taking up as little space as possible in computer's memory, and a minimum of disk space.

Notepad gives clear, easy to read and full HTML. There is no code hidden, and users have control over all parts of the HTML code. JavaScript is also fully supported by Notepad. All parts of the JavaScript are fully available through Notepad, without the need of complex tools.

2.10.3 Macromedia Dreamweaver

Macromedia Dreamweaver is professional visual editor for creating and managing web sites and pages. It gives developers the productivity of a visual web page layout tool, the control of an HTML text, editor and support for new web technologies, all in one software packing.

Developers can use it to create web sites visually, with confidences that HTML being generated is concise and always editable. It includes advanced features that take advantage of the latest innovations on the web, such as dynamic HTML and CSS, while still ensuring that web pages work well in a variety of web browsers. All of the code generated by it is carefully created to work on as many platforms and browsers as possible.

Others features include easy integration of ActiveX components, Java applets,

Plug-ins for improved web page interactivity. It also integrates seamlessly with other components of Macromedia, such as Flash Movies, Shockwave, and Fireworks, which are essential for the development of interactive web pages.

2.10.4 Adobe Photoshop 7.0

Adobe Photoshop 7.0 is the most popular image-editing available for Macintosh and Windows-based computers. It is used as drawing, painting and designing purposes. Users can retouch an image, apply special effects, swap details between photos, introduce text and logos, adjust color balance, and even add color to a grayscale scan. All these functions are included under a set of user-friendly editing tools in Adobe Photoshop. It contains graphical icons to represent every functions of each button. Besides that, it also provides many shortcut keys that is easier and save time for users and for those who do not like to use mouse.

Chapter 3 - Methodology

3.1 Object-Oriented System Development

The object-oriented software development life cycle (SDLC) consists of three macro processes: object-oriented analysis, object-oriented design and object-oriented implementation (see Figure 3-1).



Figure 3.1: The object-oriented system development approach

Object-oriented system development includes these activities:

> Object-oriented analysis-use case driven

 To determine the system requirements and identifying classes and their relationship to other classes in the problem domain. To identify the users or the actors.

Object-oriented design

- To design the classes identified during the analysis phase and the user interface.
- To design and redefine classes, attributes, methods, structures and associations.

Prototyping

- To provide developer a means to test and refine the user interface.
- To increase the usability of the system.

Component-based development

- To improve application development with the assemblement of software components.
- To increase large collection of interpretable software components to developers.

> Incremental testing

- To perform testing regularly for finding bugs and performance.
- To have a clear picture of the system characteristics.

3.2 Object Oriented Methodology

Object-oriented methodology is a set of methods, models, and rules for developing systems. Modelling is the process of describing an existing or proposed system and it can be used during any phase of the software life cycle. Modelling also provides a means for communicating ideas in an easy to understand and unambiguous form while also accommodating a system's complexity. (Ali Bahrami, 1999)

3.2.1 The Unified Approach

The Unified Approach (UA) (see Figure 3-2) establishes a unifying and unitary framework around their works by utilizing the unified modelling language (UML) to describe, model and document the software development process. (Ali Bahrami, 1999)



Figure 3.2: The processes and components of the unified approach

The Unified Approach is chosen for E-Record Book because:

- To combine best practices, processes, methodologies and guidelines along with UML notations and diagrams.
- To understand better E-Record Book based on object-oriented concepts and system development.
- To allow iterative development by allowing to go back and forth between the design and the modelling or analysis phases.

The unified approach to software development revolves around the following processes and concepts (see Figure 3-2). The processes are:

> Object-Oriented Analysis (OOA)

The goal of O-O analysis is to first understand the domain of the problem and the system's responsibilities by understanding how many users use or will use the system. This is accomplished by constructing several models of the system. OOA Process consists of the following steps:

- Identify the actors.
- Develop a simple business process model using UML Activity diagram.
- Develop the Use Case.
- Develop interaction diagrams.
- Identify classes.

Object-Oriented Design (OOD)

Unified approach combines Jacobson et al.'s analysis and interaction diagrams, Booch's object diagrams, and Rumbaugh et al.'s domain models to produce designs that are traceable across requirements, analysis, design, coding and testing. OOD Process consists of:

- Designing classes, their attributes, methods, associations, structures ad protocols, apply design axioms.
- Design the Access Layer.
- Design and prototype User interface
- User Satisfaction and Usability Tests based on the usage/use cases.
- Iterate and refine the design.

Iterative Development and Continuous Testing

Iteration and reiteration can uncover design weaknesses or at least provides additional information for user to use, repeat the entire process or moving on to reprototyping and retesting. Prototypes made will be incrementally transformed into actual application.

Modelling Based on the Unified Modeling Language

The unified modelling language was developed by the joint efforts of the leading object technologists Grady Booch, Ivar Jacobson and James Rumbaugh. The UML merges the best of the notations used by the three most popular analysis and design methodologies: Booch's methodology, Jacobson et. Al.'s use case and Rumbaugh et al.'s object modelling technique. The UA uses UML to describe and model the analysis and design phases of system development.

The UA Proposed Repository

Repository enables maximum reuse of previous experience and previously defined objects, patterns, frameworks and user interfaces in an easily accessible manner. The repository should be accessible to many people and relatively easy to search the repository for classes based on their attributes, methods or other characteristics

> The Layered Approach to Software Development

Approach to system architecture isolates the functions of the interface from the functions of the business and the details of the data access. This approach uses three layered approach which are user interface layer, a business layer and an access layer.

3.3 Technique Used To Define Requirements

Effective and appropriate techniques must be used to define and elicit users requirements. Research methods that usually used are library research, interview, internet research.

3.3.1 Library Research

I went to library to search books related to record book management system to

have a deeper understanding on the system design and how can the electronic record book management system be implemented effectively.

3.3.2 Interviewing Teachers

A few interview sessions had been conduct with some teachers in Sekolah Menengah Kebangsaan Sri Rahmat, Johor Baharu to have a better understanding of their need toward the management of the record book so that E-Record Book can help them better. From those sessions, I got a clearer view of what E-Record Book should provide to produce better teaching effect. I can see that teachers need better record management tools and need a proper system to handle their teaching material well. These helpful teachers also gave precious advices and suggestions for me to produce a better system.

3.3.3 Internet Research

I have surf around the Internet for sometime to gain deeper understanding about record management and web technology available. For the technology aspect, ASP was chosen for its scalability and portability and most important of all is its easiness to integrate with current and future system.

Summary of Techniques Used to Define Requirements

From the research above, I found that both teachers and headmaster need better communication between each other. They are also looking forward for a more userfriendly system to upgrade the teaching and learning process. The system that they are expecting should achieve basically the goal below:

Bring the teachers and headmaster together (better communication).

Well control on the teaching and learning material. (easier to manage)

Instant result.

3.4 Chosen Platform, Web Server, Database and Tools

3.4.1 Chosen Development

For the E-Record Book, Windows is chosen as the development platform. Microsoft's Windows 2000 Server is built to work with a series of microprocessors from the Intel Corporation that share the same or similar sets of instructions.

The main reason for choosing Microsoft's Windows 2000 Server as the development operating system is because it supports the MS SQL Server 2000dtabase platform. Therefore, the implementation of the new system can be done easily and effectively.

3.4.2 Chosen Database Management System

I have chosen Microsoft SQL Server 2000 as the database platform for Electronic Record Book Management System (E-Record Book) as it is an RDMS (relational database management system) for the workstations. SQL Server enforces database integrity, it handles all queries on the server itself, and just returns a result set. SQL Server also supports stored procedures, triggers, defaults, rules and other mechanisms for defining a database, modifying and retrieving data.

SQL Server contains not only a very powerful database server, but a group of

products that will help you administer your server. SQL Server comes with a suite of graphical tools that allow database administrators and developers to install, configure, and administer the database with little effort.

Below are some of the reason why I prefer SQL Server than any other database platform:

The need to have a fast database for on-line record processing.

Security enforcement at the database level and support for entity, domain, referential and school policy integrity.

Ease of installation, deployment and use.

SQL Server is by far the easiest database system to install, deploy to users on a Windows 2000 system. It is extremely easy to use with the wide variety of wizards available and the great graphical tools.

Scalability

SQL Server can scale from a single user system on a Windows 2000 platform all the way to an enterprise wide usage with thousands of users across a wide area network.

Data Warehousing

With new features built in for on-line analytical processing (OLAP), SQL Server is ready to house a larger database and be able to retrieve that data in a timely and easy format. An English query processor will help users ask questions of the database and get the correct answers back.

Integration with other OS Services

SQL Server easily integrates with other Windows NT services such as NT security, email, the internet and other services.

XML Support

SQL Server has great XML support. It can retrieve data in an XML format, and, with a little help from some system procedures, it can use XML to modify data in a database.

The following table is a list of the capacities for SQL Server 2000.

Object	Limits
Databases per server	32,767 databases.
Size of database	Over 1 million terabytes.
Tables per database	2 billion tables per database.
Columns per table	1024
Rows per table	Limited only by available storage
Bytes per row	8060. This does not include text and image data types.
File size of data	32 TB
File size of log data	32 TB
Column names & variable name length	128 characters
Indexes per table	1 clustered index per table. 249 nonclustered indexes per table. A composite index may have up to 16 columns.
Triggers per table	Limited only by the number of objects in a database
Stored procedures	Can have up to 255 parameters, and can nest up to 16 levels deep.
User connections	Depends on licensing

Table 3.1: Capacities of SQL Server 2000

3.4.3 Chosen Development Data Access Technology

ActiveX Data Objects (ADO) is chosen as the data access technology for E-Record Book due to the reasons below:

- ADO is a standard database access which is compatible with SQL Server 2000.
- ADO is a cross language technology for data access that exposes an object model incorporating data connection objects, data command objects, Recordset objects and collections within these objects.
- ADO object model provides an easy-to-use set of objects, properties and methods for creating script that accesses data in databases.

3.4.4 Chosen Development Web Server

Microsoft Internet Information Services (IIS 5.0) has been chosen for this project as it allows publication and distribution of information on the Internet. IIS consists of three different components which are World Wide Web (WWW) server, File Transfer Protocol (FTP) server and Gopher server. These components support virtual servers, virtual directories, logging to ADO databases, Common Gateway Interface (CGI), Internet Server Application Programming Interface (ISAPI) and Secure Socket Layer (SSL).

3.4.5 Chosen Web Development Tool

ASP (Active Server Pages) has been selected as the web development tool for the proposed system. The reasons of choosing ASP are as follows:

Strength of ASP

VBScript is usually used for scripting ASP pages.

The strength of VBScript is that it is derived from Visual Basic, and literally millions of people have at least passing familiarity with Visual Basic. The support for VBScript in Microsoft Visual InterDev (part of Microsoft Visual Studio) includes the IntelliSense code completion ability that many programmers have become accustomed to. For example, while creating VBScript code, I only needed to type Response followed by a period and I was presented with a list of the methods and properties of the Response object. Highlight the correct method or property (either by using the arrow keys or by typing the first letter of the method or property) and press the Tab key, and the method or property appears in the code, with further help on the arguments required for any methods.

ASP provides fast resulting application.

That is, a programmer could certainly find ways to improve performance, but the application might already be fast enough as written. This is especially true for intranet applications, for which he can get some idea of the likely traffic on the site when it is available.

ASP pages also are fairly well integrated into IIS, which it fairly well integrated into Windows 2000.

We can presume that Windows 2000 server machines will have IIS and thus will be able to run any ASP application that has been created. Documentation and support for ASP is extensive, including Microsoft's MSDN as well as third-party articles and books.

Debugging ASP applications has become much simpler as well.

With IIS 5.0 and later, debugging has reached a new height. Developer can debug applications on the server or client machines, and the debugger will inform him at the line where the error has occurred. Variable values can be displayed as hints when the mouse cursor is placed over the variable in the source, or they can be displayed in a watch window. IIS 5, which is included with Windows 2000, introduces a new *Error* object that allows much greater control when an error occurs.

ASP can take advantage of COM and DCOM (Component Object Model and Distributed Component Object Model) objects with minimum effort. The scoop on the COM objects is request, response, server, session and application.

Chapter 4 - System Analysis

System analysis enables us to break the system into pieces or sub system that we can understand and try to describe their interrelationships (see Figure 4-1). The relationships are essential as the sub system because sometimes they hold the clue to how to solve the larger system rather than simply the nature of the sub systems. (Shari Lawrence Pfleeger, 2001)



Figure 4.1: The process of analysis

4.1 Functional Requirements

Functional requirement is a statement of the service or functions that a system should provide how the system reacts to particular inputs, and how the system should behave in particular situations. (Sommerville, 1998)

The functional requirement for E-Record Book consists of four main parts: General Section, Administrator Section, Headmaster Section and Teachers Section. For General Section, functional requirement consists of authentication module for teachers, headmaster, school staff who acts system administrator and school information module. For Administrator Section, functional requirement includes user maintenance module while for Headmaster Section, there is the monitor and validate record book module. Finally there is the Teachers Section which includes teacher profile module, time-table module, and syllabus module, lesson planning module, student record module, student progress module and examination record module.

4.1.1 Authentication Module

This module check for the user's level when one login to the system and bring him to the control that he had access to. User needs to key in a valid user name and password to be able to use the system. There are three level of access which are the administrator, headmaster and teachers.

4.1.2 School Information Module

Basically, this module can be only performed by school administrator in providing the latest information about the school's annual events which lists out the school semester, holidays and school activities including the venues and dates. The module also provides the facts on School's vows, objectives and organization chart.

4.1.3 User Profiles Module

This module enables the administrator to create a new user account for the teachers and headmaster. Due to the security of the school's data, every user have to get a login name from the administrator before starting to use the system. He also can delete the user's account when he or she is not working in the school anymore.

4.1.4 Monitoring and Validate Module

Headmaster or the school's assistant headmaster is the only user who can perform this module as to monitor every teacher's record book in the school. The headmaster can select any teacher in the available list, monitor the teacher's performance in the record book and finally validate it. If there are any inquiries or comments from the headmaster, he can pose them to the teacher in the comments column which will be provided in the module.

4.1.5 Teacher Profile Module

This module basically stores the teacher's profile such as name, gender, race, IC, age, grade of position and others. Teachers able to fill in their profile edit them or even make changes once they have login into the system.

4.1.6 Time-table Module

There are two parts in this module which are the classroom time-table for the form teacher and the teacher's personal time-table. The classroom time-table is optional as there may be teachers who are not form teachers for certain classes. The personal time-table is compulsory for every teacher which includes the period of the teaching subject, class involved and the time for every subject's period.

4.1.7 Syllabus Module

This module includes the syllabus of the teaching subject where teachers able to record the name of the subject, its objectives or contents according to chapters and the references used.

4.1.8 Lesson Plan Module

Teachers able to perform their daily lesson planning which includes the theme of the subject, the scope of learning and its results for certain subject, class and time. They can also input the current day and date when updating the lesson planning. This module can be viewed by headmaster as a way to validate the record book.

4.1.9 Student Record Module

As usual, this module will keep the profile about the student's name, class, age, parents' names, addresses and others. This module is only available for the teacher who holds a certain class as a form teacher.

4.1.10 Examination Record Module

This module is just for the form teacher to record the marks and grades for every subject of his or her students in the class for the mid-term and final term examination.

4.2 Non Functional Requirements

Non-functional specifications are the constraints under which a system must operate and the standards which must be met by the delivered system. (Sommerwille, 1995) The new Electronic Record Book Management System must ensures certain web application qualities like user-friendliness, correctness, functionality, reliability, flexibility, efficiency as well as maintainability.

4.2.1 Functionality

The functionalities stressed here are the searching and retrieving capability, which is very important in any web application that deals with data retrieval from existing database. Besides, navigation and browsing features as well as application domain-related features will be taken into account.

4.2.2 Reliability

Reliability is the extent to which a program can be expected to perform its intended function with required precision (Pressman, 2001). It is closely related to correct link processing, error recovery and user input validation and recovery. This quality is essential as it indicates how far users will be confident in the implementation of the new computerized system in getting daily minutes processing done.

4.2.3 Maintainability

System maintenance accounts would require more effort if the system is not designed according to good programming practices. Maintainability is the ease with which a program can be corrected if an error is encountered, adapted if its environment changes, or enhanced if the customer desires a change in requirements. (Pressman, 2001)

4.2.4 Security

The proposed system has also security measures to minimize the risk of data exposure to unauthorized people.

4.3 Use Case Diagram for E-Record Book

In order to achieve the objective of the object-oriented analysis for E-Record Book, the use case diagram has been built. Use case diagram consists of actors and use cases. An actor plays the role with regard to the system or an entity such as another system or a database that resides outside the system. A use case is a sequence of actions that an actor performs within a system to achieve a particular goal. (Kendall Scott, 2001)
Below is the use case diagram:



4.4 Sequence Diagrams for E-Record Book

The process of creating sequence diagrams is a systematic way to think about how a use case (scenario) of the system can take place. By using sequence diagrams, a more specific analysis can be modelled and they assist in the design of the system by modelling the interactions between objects in the system.

Based on the use cases above, a few of the sequence diagrams have been built. Below are the sequence diagrams:



Figure 4.3: Sequence diagram for the Login to the system use case



Figure 4.4: Sequence diagram for Update time-table use case



Figure 4.5: Sequence diagram for Monitor and validate record book use case

4.5 Identify Objects, Relationships, Attributes and Methods

In this project, it is important to identify the objects which play active roles in the system. That's why the objects involved in this system are shown based on their relationships, attributes and methods with the interaction with each other.

Below is the figure which consists of the objects that have been identified during the analysis phase:

Headmaster	Person	School Administrator/Clerk	School Events
+monitor() +comment() +validate() Teacher	-UserID -Password -Name -StaffID -Gender -Race -ICNum -E-mail -DateOfBirth -PlaceOfBirth -PlaceOfBirth -GredOIPosition	+createUserAccount() +removeUserAccount() +unlockUserAccount() +updateSchoolEvents() +createStudentProfile() +editStudentProfile() +deleteStudentProfile() +createStudentSubject() +delitStudentSubject()	-title -content -events -startDate -endDate
changeProfile() checkStatusRecordBook() displayTimetable()	-DateStartService -SalaryNo -IncomeTaxNo	Sulishus Disa	Time-table
roisplay (interacter) reditTimetable() rdisplaySyllabusPlan() reditSyllabusPlan() rinputGrades()	-AccountLoanNo -Address -NameOlSpouse -JobOfSpouse	-chapterNo -topic -scope	-typeOfTimetable -day -subject -class
	+login() +changePassword() +verifyPassword()		-time -ncOfPeriod -dateStart
Examination	Student Record	Lesson Plan	any an in
-typeOfExam -subject -marks -grade	-StudentID -Class -DateRegistered -Name -Gender -DateOfBirth -ICNum -NameOfParent -JobParent -JobParent -Address -ContactNo	date -month -day -noOfWeek -time -class -subject -theme -scope -results +statusOfValidation()	

Figure 4.6: Objects with attributes and methods identified for E-Record Book

Chapter 5 - System Design

5.1 Introduction

System design requires the design developers to elevate the model into actual objects that can perform the task required by the application. The objects or classes identified during analysis phase provide them a framework for the design phase. The object-oriented design process consists of the following the activities

- Design classes, methods, attributes and associations
- Refine UML class diagrams by applying design axioms
- Design view/access layers and prototype
- Iterate and refine the whole design

5.2 Design classes, methods, attributes and associations

Classes in E-Record Book are designed in protected protocol where the methods or attributes can be used by the class or its subclasses. As for the attribute types and for classes which represent the state of an object and their methods used, they are set to multi value type with the protected visibility. This means that the attributes in the class are only accessible to subclasses and operations of the class.

5.2.1 Class Diagram for E-Record Book

Below is the class diagram for E-Record Book which shows the relationships of the classes with their attributes and methods.



Figure 5.1: A complete UML class diagram for E-Record Book

5.3 Design access layers

The main idea of designing access layers is to create a set of classes that know how to communicate with a data source whether the data actually are in file, relational database, mainframe or Internet.

5.3.1 System Architecture

E-Record Book has chosen to use the three tier architecture due to security access of the data in the database. Clients can access through the Internet or LAN to an application server of the system. Then, the application will retrieve the required data from the database.



Figure 5.2: Three tier architecture using SQL Server

E-Record Book will be using ASP as the web development tool which acts as the client application to request the pages containing the required data from the SQL Server.

The main purpose of having a three-tier architecture is to assign main functionality to each tier to ensure no function overlapped. Different people could handle each tier using different languages. Therefore, whenever there is error or system fault occurs, the problems can be detected and fixed easily without interfering other tier.

5.3.2 Database Design

Data storage is considered by some to be the heart of an information system (Kendall, 1996). It is a central source of data meant to be shared by many users for a variety of applications. The heart of a database is the OODBMS (object-oriented database management system), which allows the creation, modification and updating of the database; the retrieval of data; and the generation of reports, The main objective of database design is to make sure that data is available when the user wants to use it. Apart from that, the accuracy, consistency and integrity of data must be assured from time to time, to provide efficient data storage as well as efficient updating and retrieval.

5.3.3 Object-Relation Mapping

In relational database, tables consist of rows and columns where each column has a name and a simple data type. In object model, a table is a class (or classes) which has a set of attributes and object classes describe behaviour with methods. To define how relational data maps to and from application objects, the system must support the following mapping capabilities:

- Table-class mapping
- Table(s)-inherited classes mapping

5.3.3.1 Table-class mapping

Table-class mapping is a simple one to one mapping of a table to a class and the mapping of columns in a table to properties in a class.

chapter	topic	scope	objective	
				Syllabus Pla
				chapter
				topic
		and the second second	1000	scope
	1	1		Objective

Figure 5.3: Table-class mapping for Syllabus Plan class

5.3.3.2 Tables-inherited classes mapping

In tables-inherited classes mapping, which allows the translation of is-a relationships that exist among tables in the relational schema into a class inheritance relationships in the object model.



Figure 5.4: Tables-inherited classes mapping for Time-table class

5.3.4 Data Dictionary

Data dictionary can be defined as descriptions of the database structure and contents. Data dictionary defines the field, field type and descriptions of each table.

In E-Record Book, one database had been defined namely ERBMS and contained 12 tables, which are RB_Login, RB_Calendar, RB_Events, RB_UserProfiles, RB_ClassTable, RB_PersonalTable, RB_LessonPlan, RB_SyllabusPlan, RB_StudentProfile, RB_ExamMonth, RB_ExamMid,

RB_ExamFinal and **RB_CalConfig**

Database Name: ERBMS

Table name: RB_Login

Field Name	Data Type	Length	Note
No	int	4	Auto Number
UserID	varchar	10	
Name	varchar	50	
Password	varchar	20	
UserType	int	4	1-Headmaster, 2-Teacher, 3-Clerk
Counter	int	4	
Status	int	4	1-True 0-False

Table 5.1: Table of RB_Login

Table name: RB_Calendar

Field Name	Data Type	Length	Note
ID	int	4	
CalDate	datetime	8	
Holiday	varchar	50	

Table 5.2: Table of RB_Calendar

Table name: RB_Events

Field Name	Data Type	Length	Note
EventID	int	4	
SemesterType	int	4	
EventWeek	int	4	
StartDate	datetime	8	
EndDate	datetime	8	
EventTopic	varchar	300	
EventDetails	varchar	500	

Table 5.3: Table of RB_Events

Table name: RB_UserProfiles

Field Name	Data Type	Length	Note
No	int	4	Auto Number
UserID	varchar	10	
StaffID	varchar	10	
Salutation	varchar	10	
Name	varchar	50	
Gender	varchar	10	Male/Female
Race	varchar	10	
ICNum	nvarchar	50	New IC format
DateOfBirth	datetime	8	(mm/dd/yyyy)
Status	varchar	10	Single/Married
PlaceOfBirth	datetime	8	(mm/dd/yyyy)
Email	nvarchar	50	
GredOfPosition	varchar	10	DGx x-number
ContactNo	varchar	10	
DateStartServices	datetime	8	
SalaryRefNo	varchar	12	
IncomeTaxNo	varchar	12	
KWSPNo	varchar	12	
AccLoanNo	varchar	12	New Caller
Address	varchar	50	
NameOfSpouse	varchar	50	
JobOfSpouse	varchar	50	

Table name: RB_ClassTable

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
UserID	varchar	10	
Name	varchar	50	
StaffID	varchar	10	
Class	varchar	50	
Day	int	8	Monday Tuesday Wednesday Thursday Friday
Subject1	varchar	20	
Subject2	varchar	20	
Subject3	varchar	20	
Subject4	varchar	20	
Subject5	varchar	20	
Subject6	varchar	20	
Subject7	varchar	20	
Subject8	varchar	20	
Subject9	varchar	20	

Table 5.5: Table of RB_ClassTable

Table name: RB_PersonalTable

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
UserID	varchar	10	
Name	varchar	50	
StaffID	varchar	10	
Class	varchar	50	
Day	int	8	Monday Tuesday Wednesday Thursday Friday
Subject1	varchar	20	

Class1	varchar	10
Subject2	varchar	20
Class2	varchar	10
Subject3	varchar	20
Class3	varchar	10
Subject4	varchar	20
Class4	varchar	10
Subject5	varchar	20
Class5	varchar	10
Subject6	varchar	20
Class6	varchar	10
Subject7	varchar	20
Class7	varchar	10
Subject8	varchar	20
Class8	varchar	10
Subject9	varchar	20
Class9	varchar	10

Table 5.6: Table of RB_ClassTable

Table name: RB_LessonPlan

Field Name	Data Type	Length	Note
ID	int	4	AutoNumber
UserID	varchar	10	
Name	varchar	40	
DueDate	datetime	8	
DueTime	int	4	
LastModified	datetime	8	
Class	varchar	10	
Subject	nvarchar	50	
Topic	ntext	16	
Content	ntext	16	
Results	ntext	16	
Status	int	4	0-Not validated 1-Validated
Comment	ntext	16	

Table 5.7: Table of RB_LessonPlan

Table name: RB_SyllabusPlan

Field Name	Data Type	Length	Note
UserID	varchar	10	mail Nember
StaffID	varchar	10	
Name	varchar	50	
ID	int	4	
Class	varchar	20	
Subject	varchar	50	
ChapterNo	int	4	Provent of the
Topic	varchar	50	
Objective	varchar	100	
Contents	varchar	300	
Comments	varchar	500	

Table 5.8: Table of RB_SyllabusPlan

Table name: RB_StudentProfile

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
StudID	varchar	10	
StudDateRegister	datetime	8	
StudName	varchar	50	
StudClass	varchar	15	
StudTeacher	varchar	50	
StudGender	varchar	10	Male/Female
StudDateOfBirth	datetime	8	
StudICNum	varchar	14	New IC format
StudParentName	varchar	50	
StudJobParent	varchar	20	
StudAddress	varchar	100	
StudContactNo	varchar	10	

Table 5.9: Table of RB_StudentProfile

Table name: RB_ExamMonth

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
StudID	varchar	20	
StudName	varchar	50	
StudClass	varchar	50	
StudTeacher	varchar	50	
Subject1	varchar	50	
Mark1	varchar	3	Range:0-100
Subject2	varchar	50	
Mark2	varchar	3	Range:0-100
Subject3	varchar	50	
Mark3	varchar	3	Range:0-100
Subject4	varchar	50	$\langle A \rangle$
Mark4	varchar	3	Range:0-100
Subject5	varchar	50	
Mark5	varchar	3	Range:0-100
Subject6	varchar	50	
Mark6	varchar	3	Range:0-100
Subject7	varchar	50	
Mark7	varchar	3	Range:0-100
Subject8	varchar	50	
Mark8	varchar	3	Range:0-100
Subject9	varchar	50	
Mark9	varchar	3	Range:0-100
Subject10	varchar	50	
Mark10	varchar	3	Range:0-100

Table 5.10: Table of RB_ExamMonth

Table name: RB_ExamMid

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
StudID	varchar	20	
StudName	varchar	50	
StudClass	varchar	50	Margarol 1917
StudTeacher	varchar	50	
Subject1	varchar	50	

75

Mark1	varchar	3	Range:0-100
Subject2	varchar	50	
Mark2	varchar	3	Range:0-100
Subject3	varchar	50	
Mark3	varchar	3	Range:0-100
Subject4	varchar	50	
Mark4	varchar	3	Range:0-100
Subject5	varchar	50	
Mark5	varchar	3	Range:0-100
Subject6	varchar	50	
Mark6	varchar	3	Range:0-100
Subject7	varchar	50	
Mark7	varchar	3	Range:0-100
Subject8	varchar	50	
Mark8	varchar	3	Range:0-100
Subject9	varchar	50	
Mark9	varchar	3	Range:0-100
Subject10	varchar	50	
Mark10	varchar	3	Range:0-100

Table 5.11: Table of RB_ExamMid

Table name: RB_ExamFinal

Field Name	Data Type	Length	Note
No	int	4	AutoNumber
StudID	varchar	20	
StudName	varchar	50	
StudClass	varchar	50	
StudTeacher	varchar	50	
Subject1	varchar	50	
Mark1	varchar	3	Range:0-100
Subject2	varchar	50	
Mark2	varchar	3	Range:0-100
Subject3	varchar	50	
Mark3	varchar	3	Range:0-100
Subject4	varchar	50	
Mark4	varchar	3	Range:0-100
Subject5	varchar	50	

Mark5	varchar	3	Range:0-100
Subject6	varchar	50	
Mark6	varchar	3	Range:0-100
Subject7	varchar	50	
Mark7	varchar	3	Range:0-100
Subject8	varchar	50	
Mark8	varchar	3	Range:0-100
Subject9	varchar	50	
Mark9	varchar	3	Range:0-100
Subject10	varchar	50	
Mark10	varchar	3	Range:0-100

Table 5.12: Table of RB_ExamFinal

Table name: RB_CalConfig

Field Name	Data Type	Length	Note
ID	int	4	AutoNumber
calendar_height	nvarchar	20	
calendar_width	nvarchar	50	
day_abbr	int	4	
Calendar_Title	nvarchar	50	
HeaderRowColor	nvarchar	50	
MonthRowColor	nvarchar	50	
DayCellColor	nvarchar	50	
TodayCellColor	nvarchar	50	
PublicCellColor	nvarchar	50	
HeaderText	nvarchar	50	
MonthText	nvarchar	50	
DayText	nvarchar	50	
PublicText	nvarchar	50	
TodayText	nvarchar	50	
HeaderTextSize	nvarchar	50	
MonthTextSize	nvarchar	50	
DayTextSize	nvarchar	50	
PublicTextSize	nvarchar	50	
TodayTextSize	nvarchar	50	
ShowHeaderText	int	4	
ShowMonthText	int	4	

HighlightPublic	int	4	
HighlightToday	int	4	

Table 5.13: Table of RB_CalConfig

5.4 User Interface Design

2 Electronic Record Book Management System - Login - Microsoft Internet I	Explorer
The large of contemporary states	
service and an annual state of the service	1 1 1 1 1 1 1 1 1 1
E-Record Book Login	
Please enter your loginID and password to login	to the system.
Login ID:	
Password:	
Login Reset	
the same strength and the same strength and the	

Figure 5.5: Login interface for E-Record Book

Chapter 6 - System Implementation

6.1 Introduction

System implementation in software development is a process to convert system requirements into program codes. The initial stage of system implementation involves setting up the development environment. This includes setting up development tools to facilitate the system implementation.

Generally, the development environment is suited according to different development phases, which can be categorized into system design, system development and report writing process.

6.2 Development Environment

Development environment specifies the environment on which the E-Record Book will be implemented. The development environment on which the E-Record Book is build on is important as it plays an important role in determining the successful implementation of E-Record Book.

6.3 System Design

Although system design is clearly stated in Chapter 5, nevertheless, during the initial stage of system development, a number of considerations and adjustments were

done to the initial system design in order to match the actual needs and requirements.

6.4 System Development

The basic tools used for the system development are:

- Internet Information Service (Web Server)
- Microsoft Windows 2000 Server (Operating System)
- SQL Server 2000 (Database Management System)
- Active Server Pages (ASP) platform
- Microsoft Visual InterDev 6.0
- Notepad and EditPlus (Editor for HTML)
- Swish 2.0 (Image design tools)
- Xara Webstyle 3.0 (Image design tools)
- Adobe Photoshop 7.0 (Image design tools)

6.5 Reports Writing

All the problems encountered, together with solutions found throughout the processes (from system implementation until system evaluation) were recorded as well as result from system testing and system integration.

6.6 System Coding – Coding Approach, Style and Scripting Language

6.6.1 Database Implementation

For E-Record Book, the database is stored in a distributed server in which any data creation, updates or data retrieval will be connected directly to the database server through ActiveX Data Objects (ADO).

The database includes tables to keep users' details including users' authentications information, profiles, creation of records and many others. E-Record Book is an client-server application in which the users can create, edit and delete any records directly into the E-Record Book database.

After the E-Record Book is completed and tested successfully, all the data were flush from the database. All the unnecessary tables were eliminated from E-Record Book database to avoid data overlapping and to reduce workload of the entire system when deployment.

6.6.2 Application Server Configuration

Internet Information Server (IIS) is a Microsoft's offering for Web publishing and web server that allow users of windows NT/2000 to serve web page on the Internet. IIS is available in both Professional and Server version of Windows 2000.

All Web page files should be placed into the default directory of \Inetpub\wwwroot\ and referred the login page named login.asp. System Administrator can choose to create a virtual directory instead of placing all the web page in the default root folder.

6.6.3 Virtual directory creation

To enable users to access this system from the internet, a virtual directory has to be created on the server. This is done using IIS. The virtual directory corresponds to the actual directory where all the system scripts are found. To enable user browse through E-Record Book, a directory has been also created named **erecordbook**. This directory acts as an alias which is a name that Web browsers use to access that directory. It is more secure to prevent any users from knowing the physical location of the files on the server and cannot use that information to modify the files.

Below is the virtual directory made during development phase:



Figure 6.1: Virtual directory for E-Record Book

6.7 Program Implementation

6.7.1 Coding Approach

The methodology used in this development of the E-Record Book is the incremental prototyping methodology. This phase will begin with module design, followed by the implementation of preliminary prototype. On completion of the preliminary prototype, additional functions are added into prototype. This phase is interactive and may require trace backs to previous stages within the incremental prototyping phase if error were found. It ends with the complete implementation of module.

ASP with VB Script and Java Script is used to develop the entire E-Record Book. Forms are divided into two sections: the user interface and the logic (or code). The user interface comprises HTML markup and ASP web controls, whereas the logic is the programmatic code that interacts with the user interface. This make the page will look more simple and easier to manage.

To increase the coding readability and to help in future enhancements, a page is formed by small pieces of files through the use of "include" files and the use of comments. This is very important as it reduces workload of system developers especially when they make changes on the layout of interfaces. Besides, it also enables system to be developed in shortest time as it allows few developers to work on separate modules at the same time.

6.7.2 ASP page

Microsoft Active Server Pages (ASP) is a server-side scripting environment that can use to create and run dynamic, interactive Web server applications. With ASP, HTML pages, script commands, and COM components can be combined to create interactive Web pages or powerful Web-based applications, which are easy to develop and modify. Figure below indicated an ASP page (checklogin.asp) with a few built-in objects (highlighted in red) that make it easier to gather information sent with a browser request, to respond to the browser and to store information about a particular user, such as user-selected preferences.

```
<%@ Language=VBScript %>
<html>
<head><meta http-equiv="Refresh" content="2; URL=login.asp"></head>
<body bgcolor="aqua" leftMargin="0" background="images/ebook.jpg" topMargin="0" marginheight="0"
marginwidth="0">
<%
Dim strUsername, strPassword
strUserID = Request("loginID")
strPassword = Request("psword")
reference to ADO Connection
objConn = Session("conn")
'declare variables
Dim rsUsers, rsType, rsCounter, rsStatus, rsName
'create ADO Recordset
Set rsUsers = Server.CreateObject("ADODB.Recordset")
rsUsers.ActiveConnection = objConn
<!-- more codes were not shown here
    Please refer to appendixes -->
```

Figure 6.2: checklogin.asp of E-Record Book

Chapter 7 - System Testing

The main function of testing is to establish the presence of defects in a program and to judge whether the program is usable in real application. Nevertheless, testing can only demonstrate the presence of errors. It cannot show that there is no error in the program. Therefore, a more suitable approach must be chosen to reduce the possibility of errors in a program.

Bottom-up approach is adopted in system testing for E-Record Book. Each module at the lowest level of the system hierarchy is tested individually. Then, all the tested modules would be related to the next module testing. This approach is repeated until all the modules are tested successfully.

7.1 Types of Testing

In general, the testing process of E-Record Book can be shown in the following figure. All the details will be further explained in subsequent sub-sections.





7.1.1 Unit Testing

Unit test is the process to test the individual component to ensure that they function properly. Each component is tested independently without the interference from other system components. Unit test is performed concurrently with the development process.

The codes in the components used in the E-Record Book are analyzed to determine the various states that the components will encounter. The test involves running the components in the browser and trying to identify the source of error from the error messages printed on the screen. After all syntax errors are eliminated, test cases are developed to test the codes. Input data is provided to the component in the system and the output is verifying its correctness. Test cases are developed carefully in order to capture the different behaviors of the component. Testing are also involves boundary testing. Other than that, testing also checks to ensure that data from the database is being indexed correctly as the database server is located on a different machine. For example, the *adduser.asp* in E-Record Book was written and it was tested alone based on its functionality and requirements.

Techniques used during the process of performing unit testing are as follows:

7.1.1.1 Code Review

Before a source code is deploying, codes are reviewed line by line to discover any syntax error as well as semantic error. If errors are discovered, they are corrected immediately. Input is typed in and the output is verified for accuracy. This is done by double checking manually to verify that the query results yield records that exist in the repository and that the users does have the rights to view the records.

7.1.1.2 Tracing

This method is faster compared to code review techniques and it is efficient in discovering errors. During the compilation, the VB compiler will detect type of errors in a program and display the error type as well as the line number in which the error occurs. In order to debug the error, the line of number was traced and correction was made instantly.

7.1.1.3 Test Cases

To test the selected component in E-Record Book, input data and conditions were chosen to allow the component to manipulate the data and the output could be observed. It is important to perform test cases in a convincing way so that the test data will exhibit all possible behaviors.

7.1.1.4 Other Techniques

Other techniques are debugging and proofing correct code behind to discover any error during the development. This method able to subject the code in a more structured way to establish its correctness.

7.1.2 Module Testing

Module testing is performed without other system modules. A module consists of a collection of dependent components to perform a particular task or function. Different

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possible test cases are applied to the module and the test results would be verified. Unusual results will be analyzed and they would help in debugging sub-modules in order to produce the desired output.

For example, E-Record Book includes ASP files such as *adduser.asp*, *removeuser.asp*, *unlockuser.asp* to perform the functions in user profiles module.

7.1.3 Integration Test

Integration test is needed when all modules are integrated. The main focus in integration test is to navigate the interfaces repeatedly to detect any interface mismatch problem.

Several important aspects are checked to ensure that the flow of the data in E-Record Book is well organized and are user friendly to all the system users. E-Record Book uses a bottom up testing. Each module is tested for its ability to function after integration. The flow of information from one module to another is verified for accuracy.

In this case, several modules in E-Record Book such as Login Module, User Profiles Module, Timetable Module, Syllabus Plan Module and others were tested for integration.

7.1.4 System Testing

The sub-systems are integrated to make the entire system. Therefore, the main purpose in system testing is to find errors that result from unanticipated interactions between sub-systems. Besides, it is used to validate whether the system meets its functional and non-functional requirement.

Problems might occur by the time the new developed system is integrated. The test covers the performances, reliability, accuracy and other criteria. Testing is carried in the manner as though the system is in use.

For example, all the integrated modules in E-Record Book were tested as a whole to check for its accuracy, consistency, functionality and reliability.

Chapter 8 - Evaluation and Conclusion

Evaluation is the ultimate phase of developing a system and an important phase before delivery the system to the end users. Evaluation was related to user environment, attitudes, information priorities and several other concerns that are to be considered carefully before effectiveness can be concluded. At all phases of the system approaches, evaluation is a process that occurs continuously, drawing on a variety of sources and information.

8.1 Problems Encountered

8.1.1 Setting up server

Many problems faced in setting up the relevant servers in the E-Record Book. This problem is due to lack of experiences in dealing with the servers. Many problems are also faced with Microsoft SQL Server 2000 which requires a different set of installation procedures compared to IIS.

8.1.2 Interconnecting Server

Problems are faced trying to interconnect the IIS and MS SQL Server 2000. The IIS is unable to detect the database server even though connection string is written properly. The database server must be configured based on login authentication for selected user with the chosen password due to security measurement.

8.1.3 Debugging ASP Pages

During the development phase of E-Record Book, I was a first time user in using Microsoft Visual InterDev 6.0. I found it hard to debug the written ASP codes. This is because the debugger for ASP pages was not enabled. At early stage, any error on ASP codes can only be detected when browsed in web browser.

8.1.4 Evaluation by End Users

Due to insufficient time, the developed E-Record Book system did not managed to be evaluated by teachers in SMK Sri Rahmat, Johor Bharu. Therefore, valuable feedbacks were not received although the testing has been done thoroughly in development site.

8.2 Solutions

8.2.1 Setting up Server

Information about setting up IIS and MS SQL Server 2000 were obtained from Internet, books and friends in order to find out the best way to set up the servers. Trial and error was performed during the setup of servers but finally they have been successfully setup.

8.2.2 Interconnecting Server

The problem of interconnecting the IIS server and the database server is solved through setting-up trust relationships among the related server. This was done by providing the correct type of provider, user id and password, the source of database and the persistent security level in the *global.asa* file.

8.2.3 Enabling Debugging for ASP Pages

In Ms Visual InterDev 6.0, the selected ASP page can be debugged if the page was in a "Set As Start Page" mode. Another method to easily debug ASP pages is to check the "Debugging Flags" in Application Debugging under the Application Configuration of IIS 5.0 Errors found in ASP pages were easily shown in a highlighted in yellow under the Microsoft Development Environment.

8.2.4 Improving Existing System

Certain modules in E-Record Book were improved to provide the same functionality as in the manual record book in real life. Feedbacks were received from FSKTM lecturers in order to develop a more manageable E-Record Book.

8.3 Strength

8.3.1 Wide-accessibility

The E-Record Book is a client server application. It also acts as an Web based application which has provided wide-accessibility to users where users can access from everywhere in the world. Client-side software only requires the installation of a web browser to access the E-Record Book. Furthermore, browsers are available across all platforms.

8.3.2 Confidentially and Integrity of Information

The strength of the handling the records of teachers and students depends on the access control of users in the system. For example, information on syllabus plan and lesson plan from teachers cannot be accessed by clerks. This feature protects confidentially of information and also maintains the integrity of the information in the record book.

8.3.3 Better Monitoring and Validation

The capability for headmaster in school to monitor and validate the lesson plan for every teacher can create a better management of record book. The headmaster can also gives any comment based on the written syllabus plan and daily lesson plan from teachers. This has made the task of monitoring and validating becomes more easier and effective.

8.3.4 More Informative Record Book

E-Record Book provides school's objectives, vows, organization chart and events to headmaster, teachers and clerks. They can use the given information to learn more about the school and keep themselves updated with the latest events in school. Clerks or school administrator able to perform the updating tasks regarding the events and public holidays in school in order to provide information to headmaster and teachers.

8.3.5 Better Management of Record Book

E-Record Book was designed to improve the existing manual record book. Therefore, tasks such as adding, updating and deleting students profiles and subjects were given to school administrator where as planning daily lesson plan, syllabus plan, time table, updating students examination records were handled by teachers. As for headmaster, he or she can only monitor and validate the certain records from teachers. This has created a more manageable record book because every level of users has its own roles and access control.

8.4 Limitation

8.4.1 Platform

The E-Record Book is limited to certain platforms in term of openness. It supports Window 95, Window 98, Window NT, Window 2000 and Internet Explorer 4 or above. Besides, it needs Ms SQL Server 2000 as the database server to manage the data of the system.

8.4.2 Language Support

The E-Record Book only provides the information about the vows and school objectives in Malay version.. It is due to information given from the present school was in Malay language. Translation could not be made as the terms of some words are ambiguous and may be different from original meaning once they have been translated.

8.4.3 Handing in Lesson Plan

E-Record Book did not manage to provide headmaster with the capability to set a dateline on handing in the daily lesson plan for validation. Therefore it is expected for teachers to write their lesson plan accordingly to the schedule.

8.4.4 Calculating Marks and Grades

Teachers using E-Record Book only manage to update their students examination records based on monthly, mid term and final term. The calculation of passes and fails, type of grades were not generated due to limitation of time in developing E-Record Book.

8.5 Future Enhancement

As mentioned before, E-Record Book is still not fine enough to work at its full efficiency. Some refining work needs to be done to the system to increase its usability and reliability. The aspects to be refine and some suggestions to upgrade the system are as below:

8.5.1 Setting up Dateline of Lesson Plan

Headmaster's capability on setting up dateline of handing in lesson plan for teachers can be added to make sure that teachers update their daily lesson plan and submit them on time. As for teacher who is absent on the certain lesson, he or she can post a notification in the lesson plan to inform the headmaster about it.

8.5.2 Generating Grades and Reports

In order to make the E-Record Book more informative, grades can be generated based on the marks given for each student's subject. Therefore, report of performance based on that particular student can be made viewable in the system.

8.5.3 Forums and Announcements

Forums and announcements can be added into system so that headmaster, teachers and clerks can discuss on certain topic or post any new announcement in school. It will act as another discussion site besides meeting for the users to view their opinions and comments.

8.5.4 Upload and Download Examination Papers

E-Record Book can provides the capability for teachers to upload their recent examination paper for the references of other teachers. Therefore they can exchange the examination paper among themselves by selecting the required paper. This can be done by downloading the files into own storage device.

8.5.5 MultiLanguage

Optional language such as English or Malay can be selected when user login into the system. This will make the contents of E-Record Book more standardized and easy to understand.
8.6 Other features

- > Online help given for users to perform their tasks in E-Record Book.
- Data created in the E-Record Book are interrelated to each other. The system will give warning to the user if the users try to delete some data that have linking to other data from other table.
- Clerks able to create packages of subjects for students
- Activities performed by users will be recorded in log files to track their performances when using the system.
- Strategies on teaching subjects were included in the system as a reference for teachers.

Appendix A – Installation and Configuration

A.1 Installation & Setup of IIS 5.0

Microsoft Internet Information Services (IIS 5.0) is available on the Windows 2000 Professional, Server, Advanced Server, Windows XP and Windows NT platform. E-Record Book is developed under the Windows 2000 Advanced Server platform. This is due to the requirements of the E-Record Book database server which is SQL 2000 Server and it only supports Windows 2000 Server series.

For development phase, it is important for E-Record Book to have the IIS 5.0 installed in the Windows Advanced Server platform. To install the IIS, please follow the steps below:

A.1.1 Installation of IIS 5.0

- First, go to Start -> Setting -> Control Panel. In Control Panel window, double click on the Add/Remove Programs.
- 2. In the Add/Remove Programs menu, select the Add/Remove Windows Components. When the window of Windows Components Wizard pop-up, scroll down for the Internet Information Services (IIS) and make sure to check the checkbox beside it. Then click the Next button to proceed
- After the IIS has been successfully installed, click Finish to close the Windows Components Wizard.

A.1.2 Setting up E-Record Book virtual directory

- Before the E-Record Book website was being set up, copy the erecordbook folder into the \InetPub\wwwroot\ at the root directory (example: C:\InetPub\wwwroot). The erecordbook folder which includes all the application files has been created manually in the root directory.
- To create a virtual directory for E-Record Book, go to Start -> Programs ->
 Administrative Tools -> Internet Services Manager
- In the Internet Services Manager window, the erecordbook folder will be seen. But a virtual directory needs to be created before the contents of E-Record Book can be browsed through Internet browser.

	Name	Path
+ Se form	Scripts	c:\inetpub\scripts
+ AlData	TISHelp	c:\winnt\help\iishelp
+ A Test Local	IISAdmin	C:\WINNT\System32\inetsrv\iisadmin
+ Se webroot	(SelisSamples	c:\inetpub\iissamples
P Danner	MSADC	c:\program files\common files\system\msadc
+ Stes	vti_bin	C:\Program Files\Common Files\Microsoft Shared\Web Se
+ CalendarASP	Printers	C:\WINNT\web\printers
🕀 🦲 Common	BegASP	C:\Inetpub\www.root\BegASP
+ A EDRMS	BegASPFiles	C:\Inetpub\www.root\BegASPFiles
(+) erecordbook	webpage	C:\Inetpub\www.root\webpage
+ Court y	Porototype	C:\Inetpub\wwwroot\prototype
🕀 🧾 images	Reloain	C:\Inetoub\www.root\login
🕀 🦲 loginASP	Classifield	C:\Inetaub\www.cot\Classifield
+ MaxWebPortal_V123	Web	C:\Inetpub\www.cont\Web
H MyASP	form	C:\Inetnih\www.cot\form
+ Project1	AllData	C:\Inetru th\www.root\AllData
RcdBook	Test Local	C:\Dog ments and Settings\Administrator\My Dog ments
E StateU	10st_cocu	Collination and social governments
	Polanner	C: Instruction of instruction
+ Stresting	piararer	C' third contraining and the

4. To start creating the virtual directory, right click on Default Web Site and

ree	Computer	Local	Connection Type	Status
Internet Information Services	Ar caswkc	Yes	TCP/IP	
Default webset Scrip Explore Scrip IISH Open Scrip IISA Browse				
+ MSA Stop				
+ Rrint Pause				
Print Pause Begy All Tasks	Ske Virtual Directory			
Print Pause Print Pause Begy All Tasks Prot Delete logir Refresh	Server Extensions Web Server Extensions Administrator			
Print Pause Print Pause Begy New Prot Delete Ogir Refresh Clas Wet Properties	Site Virtual Directory Server Extensions Web Server Extensions Administrator			

click on New -> Virtual Directory

5. Click Next to continue set up the virtual directory.



6. Specify the Virtual Directory Alias of the website URL which will be used

by users to access E-Record Book. It will be named erecordbook.

Then, click Next to proceed.

Virtual Directory Creation Wizard	and the second
Virtual Directory Alias You must give the virtual directory a short	t name, or alias, for quick reference.
Type the alias you want to use to gain ac same naming conventions that you would	ccess to this Web virtual directory. Use the d for naming a directory.
Alias:	
erecordbook	
	< Back Next > Cancel

 Browse for erecordbook folder which has been created earlier in the wwwroot folder. (Example: C:\InetPub\wwwroot\erecordbook). Then, click Next.

tual Directory Creation Wizard			3 - 1 - 1 - 1 - 1 - 1
Web Site Content Directory Where is the content you want to publish	on the Web site?	6 	G
Enter the path to the directory that contain	is the content.		
C:\Inetpub\www.root\erecordbook		1.0	Browse

8. Make sure that the read and run scripts options are checked. Then, click

Next to complete the wizard.

Virtual Directory Creation Wizard		×
Access Permissions What access permissions do you wan	t to set for this virtual directory?	S
Allow the following:	- Winkerson I and the	
₩ Read		
Run scripts (such as ASP)		
Execute (such as ISAPI application	ns or CGI)	
☐ Write		
F Browse		
Click Next to complete the wiza	rd.	
	< Back Next >	Cancel

9. Finally, click Finish to complete the creation of the virtual directory.



A.1.4 Setting up E-Record Book's SQL Database

- Please make sure that the Microsoft SQL Server 2000 Enterprise Edition has been installed before setting up the E-Record Book database.
- Go to Start -> Programs -> Microsoft SQL Server -> Enterprise Manager. Click on the Enterprise Manager.
- Under the Enterprise Manager window, please make sure that the SQL Server is connected (arrow in green color).

📅 SQL Server Enterprise Manager - [Co 🎁 <u>C</u> onsole <u>Wi</u> ndow <u>H</u> elp	nsole Root\Microsoft SQL Servers\SQL Server Group\CASWKC (W	indoves NI)]	-0×
Action Yew Looks 🗢 🔶 🔁			
Tree	CASWKC (Windows NT) 6 Items		
Console Root Console Root Server Group ASWACE VARIASANS NOT Databases Data Transformation Ser Console Root ASWACE VARIASANS NOT Databases Console Root Console Root ASWACE VARIASANS NOT Databases Console Root ASWACE VARIASANS NOT Databases Console Root Console Root ASWACE VARIASANS NOT Databases Console Root Console Root ASWACE VARIASANS NOT Databases Console Root Console Root ASWACE VARIASANS NOT Databases Console Root Console Root C	Databases Data Transforma	Support Services	Meta Data Services

4. If not connected, right click the server and click Connect.

Console Window Help Action Yiew Jools Action Yiew Jools CASWKC (Windows NT) CASWKC (Windows NT) Console Root Refresh Export List Properties Hein	sQL Server Ente	rprise Manager - [[Console Root\Microsoft SQL Servers\SQL Server Group\EASWKE (Windows NT)]	_ O ×
Action Yew Tools A Consection Console Root Console Root Consector Edit SQL Server Registration Connection Edit SQL Server Registration Delete SQL Server Registration Connect Start New All Tasks View New Window from Here Refresh Export List Properties Help	Console Win	dow <u>H</u> elp		_ 8 ×
Tree CASWKC (Windows NT) D Ibens Console Root SQL Server Group Edit 5QL Server Registration Edit 5QL Server Registration Connect Stop Pairee Start New All Tasks View New Window from Here Refresh Export List Properties Help	Action View I	ooks 👍 🔿		
Console Root Microsoft SQL Servers SQL Server Group New SQL Server Registration Edit SQL Server Registration Delete SQL Server Registration Connect Stop Pause Start New Mindow from Here Refresh Export List Properties Heb	Tree		CASWKC (Windows NT) 0 Items	
Delete SQL Server Registration Connect Stop Pause Start New All Tasks View New Window from Here Refresh Export List Properties Heb	Console Root	Servers er Group New SQL Server Ro Edit SQL Server Ro	(Connection Failed ch egistration gistration properties	
Stop Pause Start New All Tasks b View b New Window from Here Refresh Export List Properties		Delete SQL Server Connect	Registration	
New Al Tasks + View + New Window from Here + Refresh + Export List + Properties +		Stop Pause Start		
View New Window from Here Refresh Export List Properties Help		New All Tasks	:	
Refresh Export List Properties Help		View New Window from	Here	
Properties		Refresh Export List	XO.	
Help		Properties		
		Help		

5. For the first time, click on the running SQL Server to create a new login user.

This can be done by clicking the icon New Login.

n SQL Server Enterprise Manager - [☆ Console Window Help Action View Tools 4 → [Tree	Console Root/Microsoft SQL Servers/SQL S		ndows f(I))
Console Root	Databases Data Management Transforma	Replication Security	Support Meta Data Services Services

6. A new login window will pop up. Then type in the user name. Select the SQL Server Authentication option and type in the password. (For the E-Record Book, the name for the database is wkc and password is caswkc) Choose the master as the database and default as the language. Click OK.

General	Server Role		
	Name:	wkc	
Authen	tication		
	C Window	vs Authentication	
	Domain		
	Security	access:	
	60	Grant access	
	C	Deny access	
	G SQL Se	erver Authentication	
	Passwo	nd:	
Default	s Specify the	default language and database for this login.	
Œ	Database:	master	
	Language:	<default></default>	

7. Type in again the password to confirm the password which has been just entered. Click **OK**.

Confirm Password		? ×
Old password:		
Confirm new password:	[MXXXXX	and the second
	OK	Cancel

 To set up the database, click on the Databases folder in the server. Then right click it and go to All Tasks -> Attach Database..

Action yiew Iools 4= → 11± ee	Databases 13 Items] 76 %		19		1
CASWKC (Windows NT) CASWKC (Windows NT) New Database CAT Tasks CAT Tas	ta Calendar Backup Database Restore Database Attach Database Import Data Export Data Copy Database Wize	classified	db20025QL	ERBMS	master webroot	model

9. A new window will prompt out for user to attach the database. Then click the

button to browse for the location path of the database file.

	Varitu
	Current File(a) Location
Jinginal File Ivame(s)	
۹)	
4	
ttach as:	
ttach as:	CASWKC\Administrator
▲ Itach as: pecify database owner:	CASWKC\Administrator

10. Browse for the path of the database file named ERBMS.mdf (For example, the path is C:\ Program Files\ Microsoft SQL Server\ MSSQL\ Data\ ERBMS.mdf). Then click OK to attach the database.

	BegASP_LogLDF Calendar.ldf Calendar.mdf Calessified_Data.MDF Classified_Log.LDF Copy of ERBMS_MDF Copy of ERBMS_Log.LDF db2002SQL.ldf db2002SQL.mdf distmdl.ldf distmdl.mdf ERBMS_MDF ERBMS_Log.LDF ERBMS_Log.LDF Inventory_Log.LDF	220
--	---	-----

11. The Attach Database window will show the name of the database attached and its location. Then specify the database owner by selecting the user name that has been created earlier. Click OK.

:\Program Files\Microsoft S	SQL Server\MSSQL\Data\ERBMS	/erify
)riginal File Name(s)	Current File(s) Location	T
ERBMS.MDF	C:\Program Files\Microsoft SQL Server\	MSS
ERBMS_Log.LDF	C:\Program Files\Microsoft SQL Server\	MSS
• 1	Contraction of the second s	-
ttach as:	ERBMS	

After the database has been successfully attached, a message will prompt out.
 Then click OK.

SQL Serv	er Enterprise Manager 🛛 🗙	
٩	Attaching database has completed successfully.	
	ОК	

A.1.4 Configuration of Database Connection String in ASP Files

- In order to make connection to the database successfully, a few ASP files have to be reconfigured. This is due to the indifferent name of the SQL Server between the development site and the deployment site.
- Below is a list of files that need to be reconfigured. Editing can be done through Notepad or any other development tools. They are:
 - i. global.asa
 - ii. calendar.asp
 - iii. calendar1.asp
 - iv. callesson.asp
 - v. editlesson.asp
 - vi. editor.asp
 - vii. lessonplan.asp
 - viii. viewlesson1.asp
- The data source name in the files has to be changed according to SQL Server deployed at user site.

Appendix B – User Manual Guide

B.1 User Manual

E-Record Book is an online system that helps to reduce the headmaster, teachers and clerks workload in school. This manual provides as a guide to help users to use E-Record Book more effectively to achieve the stated goal.

This manual is divided mainly into three main parts, which are School Administrator Section, Teachers Section and Headmaster Section.

B.1.1 System Administrator Section

In order to start using the system, the System Administrator must create a Login ID for clerk in school to provide access for other users to use the system. Therefore he must login into the system and enter the create user module.

 System Administrator needs to enter his Login ID and password which have been created during the installation of the E-Record Book.

Electronic Record Book M	anagement System - Login - Microsoft Ini	ternet Explorer	
E-Record Boo	ok Login		
Please enter you	r loginID and password to	login to the system.	
Log	in ID: superadmin		
Pass	word:		
	Login Reset		

 After the System Administrator successfully login, he can create new Login ID for clerk in school.

	(Only applicable for system administrat	01)
lease enter a nev	¥ Login1D.	
ogin ID:	clerk123	
assword:		
ame:	ABC	
serType:	Clerk	
	Create Reset	

3. Once the Login ID for the clerk has been successfully created, a new window will prompt out to inform that a new login has been created. (Only system administrator has this privilege to create new user for the first time of the setup)

🚰 Electronic Record Book Management System - Create LoginID - Microsoft Interni 101 × A new user account has been created successfully! Back to E Record Book

B.1.2 School Administrator Section

This section involves the school administrators or clerks to have the capability to handle users of the system which are the teachers and headmaster in school. He or she can manage the user site, school site and student site besides their own login (account).

 Based on the Login ID and password created by the System Administrator for the first time during E-Record Book setup, he/she able to login into the system.

🔁 Electronic Record Book Management System - Login - Microsoft Internet Explorer	- 0 ×
E-Record Book Login	
Please enter your loginID and password to login to the system.	204. A
Login ID: clerk123	
Password:	
Login Reset	
Received and the second s	
	-

 If the clerk fail to login into the system, a message will be shown to indicate he has entered an invalid Login ID or password. He can only have 3 attempts to login into system before his account will be locked.



3. Once the clerk has successfully login into the system, he enters the home or default page in E-Record Book which is the 'Piagam Sekolah Kami' (School vows of SMK Sri Rahmat Johor Bharu). Navigation bar is located on the left of the page and it assists user to click to other module with ease.



B.1.2.1 Login Site

The Login Site provides three functions which are the logout, change password and user profiles.

 If the clerk click on the Logout button, then he/she will leave the system. It is advisable for every user to logout after using the system to prevent others from viewing through the information that has been accessed. If successfully logout, a scrren with the message "Thank you. You have successfully logout" will prompt out.

Attp://caswkc/test/logo	out.asp - Microsoft Internet Explorer	
1		
	Thank You. You have successfully logou	t
	36	

 Clerk can change his/her own password by clicking the Change Password button. He/she cannot use back the previous password as the new password. The new password entered has to be in 6 to 12 alphanumeric.

http://raswic.test/default3.htm - Microsi	oft Internet Explorer			_10 ×
11.22.55 P.M.				
5MC Retwart Johor Elsaru				
Within some Respondent men des	Change Pas	sword		an .
A CONTRACTOR OF A CONTRACT	Please enter a nev	w password,		
1. Contract account	Login ID:	clerk123		
Lingin Site:	New Password:	1	Must be 6 to 12 alphanumeric characters	
County Permeters 1	Password:	[
Laure Avoiders	Carton Carton	Change Passwor	d Reset	
Usea Site:				
And University				
Lange Der				
School Site:				1.000
Operations				1
Organization Charter				133.00
Constant of Consta				100
Student Site:				
THE REAL PROPERTY AND INCOME.				
And Address of				
Services				dia di
Services	4	6-1	.0.	and the

3. If the user has successfully changed the password, a new page will be shown to inform that his/her password has been changed. The page itself will redirect back to the Change Password page if not clicked.

http://caswkc/test/default3.htm	- Microsoft Internet Explorer		
11:31:42 P.M.			
E Record Book SMK Rahmat Johor Bharu			
You are impod in as	Password successfully changed!		
deck[2]	LoginID: derk123		
Home and	Note This page will be redirect back to Cl	hange Password page if not clicked.	
Lugin Site:		a second a second as	
Logist and	Back to		
Change Passened			
Clark Prolifes			
User Site:			
Add User			
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School Site:			
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 For the Clerk Profiles button, he/she can view the profiles saved in the E-Record Book system. The clerk can update his/her own profile by click the Update button.

http://caswic/test.default3.htm	Microsoft Internet Explore		_0 ×
11:4254 P.M.	Below is the current infe	irmation on clerk123	
	Please update your per	sonal profiles if there is any changes by clicking the Update button	
SNR Ratinut Johor Unaru	HER. WARRANT WARRANT		
the out begant any said	Personal Inf	ormation	
SCIENCES SCIENCES	Update		
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Login Site:	Daniffit	and the second s	
	Selected IIn	date button	
Televinenergen	Mame Op	date outton	
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Student Site:	Automote		
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Services	Solidi Spenne		A CONTRACTOR OF
Address to the book of the second	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		

5. The clerk can perform changes in the user profiles and update them with the latest information. After that, he/she can click the Update button below the form or Reset button to undo any changes.

11:49:39 P.M.	anna marainea rabhaith		
E-Facel Black	Personal Informat	for clerk123	
- Fahmat Johor Ebaru			
the You	form. con also click the "Reset" but	ion, please perform any changes in the form below and cl ton to return to the original state before you click the "Upo	ick the "Update" button at the bottom of date" button.
TI	tle:	Mr •	Mr/Mrs/Ms
In Site	ame:	Zainal Abidin b Zainab	Enter user's name(max length 40 characters)
Topul St	aff ID:	C02001	Eg. 1020001
Charges Password	ender:	Male Female	Mate/Fernsie
Out Profiles	ace:	Malay *	Malay/Chinesa/Indian/Others
Sue	No.:	660302-08-5606	Eg. 660302-08-5606
Add Dear	atus:	Single -	single/married
Annexe User	ate of Birth:	12/17/1978	(mm/dd/yyyy)
PI	ace of Birth:	Kuala Lumpur	Enter place of birth
E-	mail:	zainab@hotmentertail.com	Enter mail address
Cherthree	ontact No.:	037346246	Eg. 0124653789 or 064653786
G	ade Position:	N22 -	DG48/DG41/DC41/DGA32 atc
Concodar DA	ate Start Services In hool:	12/5/2004	(mm/6d/yyyy)
Schert Events	alary No.:		toptional)
nt Site:	come Tax No.:		(optional)
- Handred Product K	NSP No .:		(optional)
Active Ac	count Loan No.:		(optional)
Cu	urrent Address:	123, Jolan Emas, Taman Bandar Baru, 31900 Kampar	Enter address
Cartart Webmaster	me of Spouse:	F	Instingal

6. Then, he/she can view the changes made to the profiles.

http://casavier/test/default3.htt	n Microsoft Internet Explorer		COSCIENCING.
11.51:19 P.M.	Personal Info	rmation	
E Renard Bunk SNR Patienal Sphar Aharts	Const.	Describels th	
Vice due barrent and	Rewill	Service of the servic	
	Statio	ALL AND A REAL AND A	
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A DESCRIPTION OF THE PARTY OF T	Acat contin		
udent Site	Nelatoren	120-Sular Edward, Consol Buchau Main States Kongar	
Distant (Section 1	ManuelOrSamura		
Contract Statistics	Jan Ultopman	Click to return to Clerk Profiles	100
ervices:		Cher to return to Cier & I romes	100
Course and the second of the	Return to the		- and

B.1.2.2 User Site

Clerk able to create accounts for teachers and headmaster by adding new users into the system database. He/she can also remove the users who not longer

have the access to the system anymore. For example, teachers or headmaster who has retired or resigned. For those accounts who have been locked, clerk in school can have the capability to unlock them.

 If the clerk clicks on the Add User button, an add new user form will be shown. Then he/she can enter a new login ID for the teachers or headmaster and enter their personal profiles. Certain fields of information which are confidential such as Salary No, Income Tax No, KWSP No, Account Loan No are optional when adding the form. In order to keep the information confidential, teachers or headmaster can update these fields when they login into their own account.

1:21:09 AM		Add New User	
Rabimat Solice Bharu			
a ave horpitoti nés as uteriki22	To add a new user You can also click	r record, please fill in the form below and click the the "Reset" button to return to the original state i	e "Add" button at the bottom of the form. before you click the button.
the second with	LoginID:	abode123	
Home	Password:	-	6 ton 2 charanters
Site:	User Type:	Teacher 💌	relect a type
Chains Property 1	Title:	Mr	MeMes/Ms
Contraction of the local division of the loc	Name:	ABCDE	Enter user's name(mux length 40 characters)
The second se	Staff ID:	FT020001	Eg. 1020001
Auto Unite	Gender:	@ Male C Female	Male or Female
A ARLINE CEAL	Race:	Chinese 💌	Matay/Chinese/Indiar/Cthere
There are a	IC No.:	660302-00-5606	Eg. 660302-08-5606
Site	Status:	Single •	single/manied
Onectives	Date of Birth:	1/23/2003	(mm/dd/yyyy)
Companyation Chart	2		Enter place of birth
- damage	- Guidel	lines are provided	Enter mail address
Article Concerns	when	entering each field.	Eg. 0124653789 or 0 4653786
1 Site:	G		041/062/063/06
dimension Producer 1	Position:		
anders Antiperation	Services In	[1/23/2003	(mariddyyyy)
	School:	and the second se	

 When finish filling the form, the clerk has to click the Add User button to submit the form. If successful, the page containing all the information about

3 http://caswic.test.detault3.htm _Sicross	off Internet Explorer	X
1:28:17 AM		
Saber Ratemat John Atlant	The following user record has been added to login data	ase:
Nationaria treggent and on	intra di Manananana di Mananananana di Manananana di Manananana di Manananana di Manananana di Mananana di Mana	2530
	None Ponte	
Login Site:	Harris Defends	
and the second second	Name Africia Clinitet Ntal	
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Duer Site:	Matus Single Daniel Stath 1/2 MAD	1.00
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School Site	Enter Allertie	
Department lines	And State	
the second in the	Ramman #25, Jose Price, Smith 1776, 31 (20), 173, Satange Konst (P. peters)	
Shument Site:		
Supris rolles	Back to Mattheward	
Condense Disperse A		-
- Contract Materiater		

the new user will be shown in order to check if the data entered were correct.

3. If the Login ID entered in the Add User form has already existed in the database, a error page will be shown with the message "Existing Login ID in the database. Please use another Login ID".

http://caswkc/test/default3.htm - M	icrosoft Internet Explorer	
1:31:42 AM. E-Record Book SMk Rahmat Johor Bharu Youl dre Joygent on re- clerkt23	Existing LoginID found in database. Please use another LoginID Back to def User	-
Login Site: Login Site: Change Password Chris Profiles	Click to return to previous page.	
User Site: Aod User Remove User Unlock User		1
School Site:	the second se	

 Click on the Add User button to return to the previous Add User form. Then, change the Login ID and submit the form again. If the clerk click on the Remove User button, a list of existing user accounts will display. He/she can remove user(s) by checking the box beside the row of the selected user(s).



6. Then, the clerk should click on the **Remove User(s)** button below the table. He/she will be asked for confirmation to remove the selected user(s). If the Yes button is selected, then the user(s) accounts will be deleted. If No button is selected, then the operation will be canceled.



 The selected user(s) no. who have been removed from the database will be displayed.

http://caswkc/test/default3.htm 1:52:23 A.M.	n - Microsoft Internet Explorer
E-Record Book SMk Rahmat Johor Bharu You are logged on as clerkt23	The following user account(s) have been removed from the database:
Harry	User #32 User No in the Remove User table
Login Site:	Return to the Remove User
Change Password	Click to return to Remove Liser, table
User Site:	
Remove User	10

8. If the clerk did not check on any boxes and he/she clicked on the Remove User(s) button, a message box will prompt out to notify that user did not select any checkboxes. He/she will asked if the page needs to be redirect back to the home page of E-Record Book.

🔊 http://caswike/test/default3.htm -	Micro	solt)	totomet Lup	Norma		Sellin 1	Super-	All and	<u>_ 0 ×</u>
2:10:03 A.M.									
E-Record Book SMK Rahmat Johor Bharu		20	test4557	TLOUGH	test1234	Female	Maley	128496- 10-1284	test@instraal.com
You are logged on est clerk123			a diator						
	-	38	tes17690	TURNET	tesi	Female	Maliny	00.5506	rest@hormail.com
A Rome and A		31	VBScript				×		
Login Site:			You did no	t select any u	ser account to r	emove. Return	to Home?		
Logout	•	32		Ye	s N	io I	2.5	(B-550)	abc@hotmail.com
Change Passaord						1		- WAR	nellines, marin
Churk Prolifes	-	Rem	we User(s)						4
User Site:		white the	000000000000000000000000000000000000000			Press of			
	•		and the second	NW TIME	n' n' e bini				

9. For the Unlock User button, the clerk will be brought to the list of users who have their account locked. The table contains the information on the Login ID (user id), user name, his/her password and the status of his account. The clerk has to inform the selected user(s) to change their passwords once they have their account unlocked.

http://caswkc/test/default3.htm - Micr	osoft Internet Explorer	
2:22:43 AM.		
E Record Book SMK Rahmat Johor Bharu	Unlock User Account	
You are logged in as clock(2)	Select each user account you wish to unlock from the database by marking its checkbox. When finish, press the Unlock button at the bottom.	
Home	No UserID Name Pasaword Statut	
Login Site:	2 admin123 Awang Hay Openg admin123 Locked	
Logour	35 text1234 text1234 text56/9 Looked	
Change Password	Unlock User(s)	1
Clerk Profiles	Click to unlock user(s)	
User Site:		
Add User	Return to the Mame	

10. Clerk can select more than one user to unlock their account by having the checkboxes checked. Then, he/she should click the Unlock User(s) button to unlock the selected user(s). Again the clerk will be asked for confirmation to unlock the user(s).

ic result internet laplayer	_10
Unlock User Account	
Select each user account you wish to unlock from the database by marking its checkbox.	-
VBScript	
Unlock User(s) Yes to unlock, No to cancel	
	Unlock User Account Select each user account you wish to unlock from the detabase by when finish, press the Unlock button at the bottom. Unlock User(s) Ves to unlock, No to cancel

 After successfully unlock user(s), the clerk will shown which account has been unlocked.

http://caswkc/test/default3.htm 2:31:33 A.M.	n - Microsoft Internet Explorer
E:Record Book SMk Rahmat Johor Bharu You are louged on as clerk123	The following user account(s) have been unlocked from the database:
Home Login Site:	Return to the
Change Password	1. 10.21

B.1.2.3 School Site

School Site includes the relevant information about the school for teachers, headmaster and clerks references such as school objectives, organization chart, school public holidays and annual events in school.

1. The Objectives button will lead the user to the school objectives page.

http://caswkc/test/default3.htm-Micros	aft Internet Explorer
3.09.48 A.M.	(In Malay version)
The out highly on an independent of the second seco	Objektif sekolah ialah untuk meningkatkan kecemerlangan prestasi akademik dari segi kualiti dan kuantiti, disamping penglibatan pelajar menyekuruh dalam aktiviti kokurikulum serta mengurangkan kadar salah laku pelajar ke tahap minimum.
Lapital Charge Personnel (*) Charge Personnel (*) Charge Personnel (*) Diser Sytter And Verstandel State (*)	 Meningkatkan nama dan maruah sekolah ke tahap kebanggaan dan kepercayaan di kalangan penduduk tempatan dan masyarakat Johor Bharu, khasnya dan negeri Johor amnya, melalu kejayaan-kejayaan yang dicapai: Pencapaian akademik yang membanggakan dari segi kualiti dan kuantiti, iaitu pencapaian yang melebih itahap peningkat Daerah, hegeri dan Kebangsaan dalam Peperiksaan Penilaian Menengah Randah (PMR) dan Siji pelajaran Malaysia (SPM) Pencapaian cemerlang dalam bidang kokurikulum. Amalan disipin yang tinggi. Penkaman disipin yang tinggi. Penkaman dan anali dan sahsiah yang terpuji. Rendang moral dan sahsiah yang terpuji. Kepimpinan pelajar.
School Site:	 Mewujudkan golongan pelajar yang minat, tekun dan sedar akan kepentingan belajar. Mewujudkan suasana pengajaran dan pembelajaran yang lebih berkesan, selesa dan menyeronokkan. Memupuk minat pelajar dalam kesenian, kebudayaan kebangsaan seperti muzik, senilukis, tarian, nyanyian dan sebagainya. Menanam semangat cintakan Sekolah dengan mendirikan asas tradisi dalam semua bidang yang dapat dibanggakan oleh pelajar-pelajar, guru-guru,

2. While that, the **Organization Chart** button will display the school current organization chart from top to bottom of the school management level. The

organization chart can be enlarged to give the users a better view of the chart. Besides, it can also be minimized or changed back to its original size.

2:45:24 A.M. Ortel Place the cursor on the image boxes to maximize, originate and minimize the chart. -

 When the clerk click on the Calendar button, he/she can browse through the current month in the calendar. To create/update/remove any public holidays

for the school, he/she has to click on the icon below the calendar.

5 Record Book SMK Pahmat John Bhani	s	ek.Men. K	Cal	endar hmat, Joho	or Bharu	of 2003		-
You are fogged on as clark(25	⇔ Sun	Mon	Cool Ci Janu Tuo	alendar Title Jary - 2003 vred	Thu	Fri	⊕ Set	
- North North		In Concession			2	3	4	-
ogin Site: Indica	tes public's h	oliday	7		3	10	11	
Charles Presword	12	13	14	15	16	17	10	
	2.5	20	21	C	23	24	25	
Clerk Profiles					and the second se	and the second second		
clark Prolites	26	27	28	29	30	Indica	tes today	y's dat

2. Once the icon has been clicked, a list of public holidays which has been created earlier will be displayed in chronological order. Clerk can click the

options on the left of the table to perform editing tasks.

http://caswkc/test/default3.ht	m - Microsoft Internet Explorer	
3:29:20 A.M.	RB_CALENDAR Page 1 of 1 First Previous Next Last Refresh Command ID CalDate Holiday	
SME Rahmat Johor Bharu	Edit New Del 1 1/1/2003 New Year's Day	1.000
You are loting on as	Edit Nov Del 22 1/19/2003 Thaipusem Day	
clark121	Edit New Del 9 2/1/2003 Federal Territory Day	
Homesen	Edit Edit Edit Edit	-
Login Site:	edit or adding new or deleting operations	
Logout	Edit	1
Change Password	Edit New Del 3 5/14/2003 Birunday or Propriet Monaminad	
Clerk Profiles	Edit New Del 8 6/7/2003 Birthday of YMH Yang Dipertuan Agong	
Union Steel	Edit New Del 10 8/31/2003 National Day	
user site.	Edit New Del 11 10/24/2003 Deepavali	
Allo Deer	Edit New Del 12 10/25/2003 Hari Raya Puasa	1.0
Remova User	Edit New Del 13 11/26/2003 Hari Raya Puasa	1.1
Unlock Uner	Edit New Del 14 12/25/2003 Christmas	
School Site:	Back to Calinder	-

3. When the edit link has been clicked, clerk can update the existing public holiday with a new one. Then click Update button.

http://caswkc/test/default3.htm - 3:36:21 A.M.	Microsoft Internet Explorer
E-Record Book SMK Rahmat Johor Bharu	Operation depends on the selected link
ron and loggest on as clark123	CalDate 1/1/2003 (Date/Time) Holiday New Year's Day (String)
Login Site:	Click to perform the operation
Change Password	Back to Calendar

- 4. Then if the new link has been clicked, the clerk can add new public holiday by inserting the date and holiday in the form. Click the Update button.
- Then if the delete link has been clicked, the clerk can delete the selected public holiday. Click the Delete button to perform this function.
- 6. For the School Events functions, the clerk will enter into the School Annual Events Menu once the button is clicked. The menu provides clerks to be able

to view all the records of school events, create a new event, update it or may be delete it from the database

http://caswkc/test/default3.htm	Microsoft Internet Explorer	and the second second second second	_ 🗆 ×
3:55:30 AM.		School Annual Events Menu	·
You are lagged an as den 120	options to perform	Control Descriptions	
different actions.		Remove evicting actual event	
Lopout	Return to Home	50	

7. If **View All** option is clicked, then the clerk able to browse all the events which have been created in the database.

http://caswicc/test/default3.htm - Mic	soft Internet Explorer
Class Protons	School Annual Events for SMK Sri Rahmat, Johor Bharu for Year 2003
User Site:	het any topic below to view the details
Amount Law	Contract of the Contract of Co
Constant of	N Sector State of State Stat
School Site:	1 N/1/2002 7/1/2003
Olynchisa	16/2003 11/20/2013 there on a second state
Corganization Coast.	Contraction in the second seco
School Events	Click on any links to view the contract of the state of t
Student Site:	the details of the events
I Stadened Republics III)	The STANDER STANDER STANDARD TO AND
and the subjects	
Services:	turn to the

which have been created in the database.

8. Where as if option Add New is clicked, Add School Event form will display for clerk to enter the relevant information such as semester, week no, start date, end date, event topic and event details. When finish, he/she can click the Add Event button to submit or Reset button to clear the form.

(Constanting)	Add New School I	Event
Change Pastment 1	To add an event to the database, fill out the following the bottom of the page.	ng form and then press the buttor
et Site:	Semester @1 C2 Week No. 1	
Hannis Ver United	Start Date 1/23/2003 End Date 1/23/2003	(mm/dd/yyyy)
not Site	Event Topic	Must enter a topic
Colorer	Event Details	ubmit the form
fent Sito:	Add Event Reset	
Taxines Protein		
rices		

- Upon submitting the form, a page showing all the information that have been entered for the school event will be displayed.
- 10. For the Update option, clerk can select which event needs to be updated. Then, he/she has to click the Update button.

http://caswkc/test/default3.htm	Microsoft Internet Explorer		
Login Site	School Annual Ev	vents for SMK Sri Rahmat, Johor Bharu for Year 2003	
Care Andrea		nikola Basi Masi Basi Mari Davis Marina.	
School Site	update Click update	on the Update button to the selected row.	
Coloring Control	updale	140500 FREDRICK Estamblisher Commission	nge i s
A Lawrence of	update	No sector descritor descritors de filosoficios	
taniant Sine.	update	1014/0003 1014/2003 Court and a state of the second state of the s	
(Minime Entront and)	update	Language Cascard as period and the You	
(delini Reserve)	updge	in the summer summer and a second	

11. When the Update button is clicked, another Update School Event form which is similar to Add School Event form will display. Here clerk is required to make the necessary changes to the selected event and click the Update Event button. 12. As for the **Remove** option, a list of school events are displayed in the table format with checkboxes on the left. Clerk can select any event(s) and remove them from the list. He/she can check the boxes available and click on the **Remove Event(s)** button.

http://caswkc/test/default3.htm	n - Microsoft Internet Explorer
Login Site:	
Laboration	School Annual Events for SMK Sri Rahmat, Johor Bharu for Year 2003
Charge Personnt	Select each event you wish to remove from the database bymarking its checkbox.
Illust City	When finished, press the Remove Event(s) button at the bottom.
Litt Daw	Semester No. Week No. Start Date End Date Event Topic
Theran Use	A REAL REAL REAL REAL REAL REAL REAL REA
Andrew Direct	
School Site	Check on any row of
Discon	records for removal
Departmention Chart	PLACED TRACES TO A CONTRACT OF
Calendar	A HOMANS HOMANS SERVER WORLES HOMAN HOMAN HOMAN
School Events	
Student Site:	Click to remove the event(s)
State Profiles	Realized as well as set of statements of the sta
Similary Subjects	Duran an E- smalled
Services	Truinova Evening)
Cintari Internation	

B.1.2.4 Student Site

Student Site is maintained by clerks in school which includes student profiles and their learning subjects in class. Clerk able to record the profiles of students based on their personal information and select the package of subjects for every student.

 When the Student Profiles button is clicked, clerk will enter the Student Profile Menu where he/she is able to view all / add / update and remove students from the database.



2. The View All category will list all the student profiles in school and this will

acts as a reference for school to keep track on students.

http://caswkc/test/default3.htm	m - Microsoft Inte	ernet Explorer			<u>_ 0 ×</u>
User Sile:	All Studen	ts Profiles			
Ramove User	Student	Registered Date	Name	Class	Form Teacher
Unioca User in al	Sugar .	1/6/2005	Ban Kim Hong	IKAN	Hong Why Ching
School Site:	BUS0622	17/2008	Marian A/L Monigish	1KH4	Zanul Ablda
Objectives	SL20015	24/2002	Mohid Khainik Mazamiri	tistis	Faunan Bia Ansa
Company and the second	SEXION .	3/1/4902	Rosani Bto And Rohman	1695	Fauciah Ete Antai
Organization Chart	3030001	1/6/2003	Wong Kiew Hing	TKHS	Nagrolibin Ahmad
Calendar I	\$020123	2/3/2902	Yep Siew Ling	THE	Wasana Biel Yozuu
Schniel Events	5020034	2/1/2808	Lee Eller Yes	1610	Sili, Alsyah
Constant Class	3020068	2/17/002	Rapkant Singh Gill	14348	Sdi Aisyah
Student Site:	3010130	2/1/2001	Mond Sallah	259412	Endah Sulamun
Shudent Profiles	SUIDOSE	2/1/2001	Siti Maryam	2KH2	Enduh Sulaman
Blockent Gubjects	Self (BRB)	27/2001	Horid Horiz Bin Hac Had	akini	Cham Kam Wa
Services:	\$010014	247230)	Munnyati Ble Ahmad	21454	Cham Kam Wa
Contact Webmaster	Thomas .	41.000	Added Inferences Revenues Tallis	BICHIN	damiiah Ana damaa

3. Where as, the Add New Category provides clerks with the capability to add new student profiles when they are enrolled into the school. An Add Student Profiles form will displays once the Add New link has been clicked.

94718AM			
E-Hazand 5-50k		Add A New Studen	t Profiles
me traquel or me connect21	add a student record i itton at the bottom of	to the <mark>database</mark> , fill out th the page.	e following form and then press the
	Student ID	Contraction in the second	Eg. 5020001
	Student Name		Student's name
	Class	5Science1 ·	
Logout	Form Teacher		Form teacher's name
Charges Restauroof al	Date Registered	1/23/2003	(mm/dd/yyyy)
Cont Product	Gender	« Male C Female	Male or Female
the second s	Date Of Birth	1/23/2003	(mm/dd/yyyy)
Add Dave	IC No.		Eg 790101-05-6409
Real and Links and Real Property links	Parent's Name	F	Enter parents or guardian name
Contraction of the	Parent's Job		Enter parents or guardian job
	Current Address	1	Enter student address
#1	Contact No.		Eg. 0124653789 or 054663786
Constant of the		Add Record Clear	
Service hour chart at		•	
Colombara			
Assessment -	Charactering		
Re	turn to the	Form valida	ation will implied once the
fairbout Prototing			Al man has have the l
and the second second second		Add Recor	d button has been clicked
And a second			

4. Once the form has been submitted, it will display the information that has been entered .It will also check if there is any existing Student ID in the database to prevent duplication record of student.

http://caswkc/test/default3.htm	- Microsoft Internet	Explorer	
10:02:21 AM.			-
E-Record Book	The followin	g information has been	n added to Student Pro
SMK Ranmat Johor Bharu		Construction of the local division of the lo	
You are loqued on os	Fields	pescriptions	the second se
clerk123	StudiD	\$13001	
	StudName	Anmail Zibir bin Mahmud	
	StudClass.	1844	
Home	Studieacher	Wang Kak Chung	
	StudDateRegister.	1/23/2003	
Login Site:	SludGender	Female	
Logout	StudDateOlBmh	Maren	
	StudiCNum	900101-06-5423	
Change Password	StudParentName	Mahmud bin Kamal	
Ciera Prol/les	Studiobearent	Supervisor	
	StudAddress	99, Ko Baru, Temerich, Pahaon	
User Site:	StudContactNo	0137065	and the second second second second
Add User		Click to return t	o Student Profiles Menu
Semove User			
A CONTRACTOR OF A CONTRACTOR O	Return back t	Student Profiles	100 M
Unkock User			
	· · · · · · · · · · · · · · · · · · ·		

5. If the clerk needs to change the profiles of the student (for example, the student changes to other class), he/she can click on the **Update** link to make changes on the selected student. After that, the clerk can select the student record to update his/her profiles by clicking the **Update** button.

http://colored.com/shelault/Uni	m Maroualt In	termit Explore		and the second sec	- and in the W	ale and a second second second		-10
101035AM	All Stude	nts Profile						
Me Larenat Johor Mani		13		and the second s	-		100	
March Agent Marganesi Alta (M. 19 March 20	upcieto	and deaters		And a state of a state	TROOM			
	odete	THE OWNER	TAPOTO	Then Harrs Hilling	-	Comp and Citizing	Anna Anna	1010
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• • • • • •	update	No.		Wester Home Prome	TRAFT.	Teacher Street	1996	man
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Giptime	update		Click to un	date the selected r	ecord	and the second second	tienes.	-
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udent Site :	update	amilian -	an/201	NAME TOTAL	10041	Children Therestown	Real of	12/12/
Contractor Contractor	pdate	1010010	any train	Diff. ben-yant	Sec.	et mit ser, challen sport	Kamaty	10000
envices	un see	-		Aland Haff for House an	(Portal	There Have We		TOR NO.

 Then,. a form with the selected student profiles is displayed. Clerk can perform any changes on the form except the Student ID and click Update Record button when he/she has finished.

http://caswikc/test/default3.htm	- Microsoft Internet Esplo	ver		ي الما ج
10:19:50 AM		ent Profiles		
E-Record Book SMR Ratimat Johor Bhanu	ersonal information, plea	ase perform any chan	ages in the form below and click the "U	pdate ⁺ button a
You yrro loughed me as	Student ID	S03001	Eg S	320001
Home	Student Name	Ahmad Zabir bin M		
Login Sito:	Form Teacher	Wong Kok Chung	Student ID is unique cannot be changed	and
Charge Amazont 1	Gender	Male C Ferr		
Clark Profiles	Date Of Birth IC No.	1/1/1990 II 900101-06-5423	(mm/c Eg.75	Id/yyyy) 10101-05-6409
Aut User	Parent's Name	Mahmud bin Kama		
History Over	Parent's Job Current Address	Supervisor 99, Kg Baru, Temer	fich, Pahang	1
School Site:	Contact No.	0137865646 Update Record	Clear	
Department of Change		State Streets		

7. The updated profiles on the selected student then will be displayed.

http://caswkc/test/default3.htm 10:27:34 A.M. E.Record Book SMK Rahmat Johor Bharu	Below are the u	pdated student profiles:	
You are toggod on as clock123	Fields	Descriptions	
	StudiD:	503001	
Home	StudDateRegister:	1/23/2009	
Louin Site	StudName:	Ahmud Zahir bin Mahmun	
Logout	Stud Class:	TKH	
Chappe Password	StudTeacher:	Wong Kok Chung	00
	StudGender:	Male	
Civita Proting	StudDateOBirth:	1/1/1/1990	
User Site:	StudiCNum:	900101-06-5423	
Act Over	StudParentName:	Mahmud bin Kamal	
Remove User	StudJebParent	Supervisor	
Unlock User	StudAddress:	99, Kg Banu Temesteh, Pahang	
School Site:	SurdContactNo:	0137065646	
Objectives	Return to the	Budent Profiles	
Calendar		A REAL PROPERTY AND A REAL PROPERTY A REAL PRO	

8. As for the Remove Category, clerk able to select the student(s) to be remove from the school database. He/she can do this by checking the boxes beside the row of student records and then click the Remove Profile(s) button at the bottom of the table.

http://caswkc/test/default3.h	tm Microso	oft Internet I	Explorer			
10:32:28 AM	All Stu	All Students Profiles				
E Record Book SMK Rahmat Johor Bharu	Select e When fi	ach student nished, pres	profile you wish to s the Remove Profi	remove from the database bymarking i les button at the bottom.		
clerk123		tudent ID	Registered Di	ite Name		
		1000	1/23/2003	Ahmad Zabir Din Mahmijd 1		
Home Home Login Site:		Check	k the boxes an to remove the s	d click the button below the selected student(s)		
Change Password		BB(BRD1	1/6/2003	Wong Kiew Hing		
Ciwa Profiles		44.01174	2/160402	Yee Slew Ling		
User Site:		0.00084	2/1/2002	Lee Phoi Yee		
Add Ukar		130050	2/1/2002	Reward Sinch Gill		

9. As for the Student Subjects module, the same functionality apply to the clerk where he/she able to view all the subjects, add new subjects, update them or even remove them from the database.

Thttp://caswkc/test/default3.htm 11:07:39 A.M.	n - Microsoft Internet Explorer	
E-Resord Book SMF Rahmat Jonor Bhana Your are logged on as sterki23	-	Student Learning Subjects Menu Options Descriptions View students learning subjects And Student's Subjects Updale Examp Student's Subjects
Home Home Login Site: Login Site: Coped Charge Password 1	Return to Norro	Remove Existing Student's Subjects
Clink Profiles User Site: Add User		

10. For the View All option, clerk able to view the subjects taken by every

students in school.

http://caswkc/test/default3.htm	- Microsoft Inter	rnet Explorer			100 200		الم الترويك			
11:15:09 A.M.	All Students Learning Subjects									
SMI Rehmat Johor Bharu	1	-				alle.	-			
You are inqued on as	Student Id		Ciass	Subject1	Subject2	Subjects	Subject	i Si		
derkiz3	\$060001	Wong Kok Chung	SSCT	Bahasa Maluysia	English	Mattematics.	Fisiory	-		
WHELE AND A THE	309002	Wong Soon Hock	6602	Babasa Malaysia	English	Mathematics	History			
Home	SUSERIE	No Ches Wa	6803	Bahasa Malayain	English	Mothematics	History	Pe		
Annalis Film	\$13004	auc	5VI	Bahista Malaysia	English	Mathematics	History			
Login Site:										
Traine Patraced	Peturn to	Student Suby	ecis	-						
	Recuiri co									
CREW PROMIS										
User Site:	1									
Add User		Children and			AN ADDRESS	L. MARGER	distantin			

11. In the Add New option, clerk able to select the relevant package of subjects for student (for example, the student in Form 5 is taking a different package
from the student in Form 1). Clerk has the ability to choose any package based on the list of packages provided below the form.

Titting canade test default them	Maxwooft Internet Explorer		
11.20.06 AM.			
Sterenat Julion Bharls		Add Student's	Learning Subjects
You are lingtond an en	View All Add How		
	Add Student's Learning	ng Subjects	
	Please fill in the form belo Click the Add New button	w to add new sut	ojects. I or Reset button to reset the form.
Login She	Student ID:	S030005	Enter Student ID (Eg. S030001)
and the second	Student Name:	Testing	Enter student name
Change Parenter .	Form Teacher:	Wong Kok Chung	Enter form teacher's name
A CONTRACTOR	Class : 🧲	[1KH4	A REAL PROPERTY OF A REAL PROPER
Dies Site.	Choose a packag	0: AND A STATE OF	
And the second s	and the second second second second	Add Subject(s)	Lineal
Remove Over		In the second second second second	the second s
A Distance Description	FRAM DECKORA & STAND	AND REPORTED AND ADDRESS OF	User can select any package of
School Site	Strends Welche Charlenter		subjects for the selected student
Dependent	Farm month bitmand	Total State State	subjects for the servered student
Constraint Const.		2	
In the Address of the International State	Form Attribution on Tables		
Behavil Kremis	· · · · · · · · · · · · · · · · · · ·		III. MACH. SET, HOLAMATSH, BELLINA, CHD. MILLINI
Student Sile:	Paul diane firmer		AD AMALYA BET THI ANNUMA BUT ANA MAY BA THAT AND
Ministra Providence 1		a a management of the	THE MARTH SELL HER ANNOLA, LLC. MIT, FA., MILLINGS
Andrew Barbards			TO MATH. SEX. SEAMSHIM SEC. MILES. SEC. SC.
Services Children of La	The second s	2 674	THE MADE THE PLANNERS CALL TO 1940
Second Westman 1		E BA	MI HANNI TEA KI WARM OLD BUL HEI
	Enter 2 and a state of the state	and a second second second	THE LEAST COMPLETE ALLONG A DAY OF UNIT

12. The subjects in the package which has been selected by clerk will be displayed when he/she submit the Add Subject(s) button. Then the listed form teacher can referred to student's learning subjects and input the marks based on monthly test, mid term and final term examination.



 Clerk also able to update the subjects taken by students in the Update option by clicking the Update button.

http://caswkc.test/default3.htm	- Microsoft Int	ernet Explore	Alemia Children	ALL P				
E Record Book	All Studer	its Learnir	ng Subjects					
Voti are logatif on es		Student id	Name	Class	Subjecti .	\$ubject2	Subject3	Subje ct4
	update	5030305	Testilog	TRIH	Filmusia Mestayota	English	Mathematics	History
Login Site:	update	5030001	Wong Kok Chang	5501	Bahasa Maleysea	English	Mulherrollite	History I
Change Passwurd	update	stamme.	Wang Sabr Hock	e:44	Bahasia Malaysia	Englight	Mattiemiatese	Harmiy
Gart Profiles	update	5090003	Ng Clies Wal	5561	Elitasa Malaysia	English	Mathematics	klistory 1
Add User	update	BUBOXD4	ahc	eval.	Bahasa Malaysia	English	Mathematics	flietkey 1
Chiese User	Return to	the C	dant Girbijeeta		O			

14. Then a form containing all the subjects which have been selected is displayed. Clerk can select other subjects for the selected student if got any changes.

a the subjects, please perform any changes in the fi also click the "Reset" button to return to the original	orm below and click the "Update" button at the bottom state before you click the "Update" button.
Student ID S030005	Eg. 5020001
Student Name Testing	Enter the student's name
Class 1KH4 -	
Form Teacher: Wong Kok Chung	
Subject 1st: Bahrsa Maryu	
Subject 2nd: Erglish	
Subject 3rd: Mathematics	
Subject 4th: History	
Subject 5th: Bahasa Melayu	
Subject 6th: Geography	Clerk can select differen
Subject 7th: Science	subject from the list box
Subject 8th: Hidup1	Subject from the fist box
Subject 9th: Nine	
Subject 10th: Non	
Update Subje	ct(s) Clear
	the state of the s
	Student ID S030005 Student Name Tesing Class IKH4 Form Teacher: Wong Kok Chung Subject 1st: Bahraa Millow Subject 2nd: Erglinh Subject 2nd: Erglinh Subject 3rd: Moltematics Subject 4th: //fittony Subject 5th: Bahesa Melloyu Subject 5th: Milloyi Subject 5th: Nine Subject 10th: None

15. As for the Remove option, it is similar to the remove function in other modules such as Student Profiles Module and School Events Module.

http://caswkc/test/default3.ht coefscort	m - Micr	rosoft Interne	t Explorer	27 C 10	- nuovine sind Servi	the second s			_10
A COLUMN TWO IS NOT	All	Students L	earning Subject	ts					
Login Site:	Sele	ct each stude n finished, pri	nt and his/her subjec ess the Remove Profi	ts, you v les butto	wish to remove from n at the bottom.	the databa	ase bymarking it	s checkbox.	e ne
Change Password		Students	d Names -	Class	Subject	Subject	2 Subject3	Sumecto	Suble
Charle Profiles		SELUES	Teuting	HANG-HA	Balansia Malayzia	Englein	Mathornalises	History	Pendul
iser Site:		STOCKEL	Wong Hok Chung	5561	Bullass Malayana	English	. Reallier alson	Huttery	Pandid
Aner University		5030002	White Some Hack	6902	Calvines Misloyatsi	English	Managation	Filstory	Punto
Reserve Liter A		3050003	No Cose Wal	5510-3	Bunata Maloysia	Euglian	Mathingalisa	History	Pandua
United User		SILSI NUA	abr	Sin	In this an Istalay and	Enstith	histonnohan	chatory_	Pandat
chool Site: Objectives		Remove Sul	oject(s)						
Calendar School Events	Ret	turn to the	B Student Subjects			V	7		444
tudent Site:		and the second second	international international international international international international international international	in the second	and the second	Contraction of the	manufacture and in the sure	-	-

B.1.2.5 Services

In the services, the users (clerks, teachers, headmaster) can contact the system administrator if any errors occurred during school hours by sending through e-mail. They can also give feedback on the implementation of the E-Record Book system by clicking the **Contact Webmaster** button.



B.1.3 Teacher Section

The Teacher Section provides teachers with functionality to manage their own timetable which consists of class timetable and personal timetable, syllabus plan, lesson plan, student profiles and examination records. Besides, the teacher has access to update his/her own account and browse through the school site.

B.1.3.1 Login Site

Teachers will need to login into the system by using the login ID created by school administrator or clerk in school. Therefore, they will have the same functionality as the Login Site in **B.1.2.1** for clerks where they able to logout, change password and update their profiles.

B.1.3.2 School Site

Teachers able to gain access to School Site but they can only browse through the relevant information about the school such as school objectives, organization chart, school public holidays and annual events in school.

B.1.3.3 Teacher Site

This site contains the Timetable, Syllabus Plan and Lesson Plan modules and provides the functionality for teachers in school.

Under the Timetable module, the teacher will enter the Timetable Menu.
 He able to choose to create a class timetable (for form teacher only) and a personal time table for himself.

http://cassekc/test/default2.htm = Microsoft Internet Explo Complexitienced	Time Table Menu
School Site: Cognitiation Chart Colondar	Diversitions To week, add, update state town table (options) Yo veek, add, update sectorul time rapie:
Teacher Site: Teacher Site: Tami Table Sylisher Plan	Teacher can select between class or personal timetable
Student Site:	

 If the teacher selects the Class Time Table category, she can view, add new or even update the existing time table for the certain class.

http://caswkc/test/default2.htm Chicky sciences	n - Microsoft Internet Explorer		
Contractor Sections	the statement	Class Time Table	and the line of the
School Site:	View All Add New Upda		Law 1
Diganization Chart	Class:5SC1	1	IN CONCEPTION OF THE OWNER
Counter · Lobal Environment Teacher Site: · Trins Table	Ministry BL 280 Francis SM 84 Westenday SM 94 Thursday SM 94 Francis BM 94 Francis BM 94	Teacher can select options to view all class timetable, add new record or update them.	BM BM EM EIM SM EIM SM EIM SM EIM SM EM
Enter Plan	Return back to		As A
Student Sile:			Carter and a second
Exam Preprid			

3. If no record is found in the class timetable, the teacher can add new record for certain day which begins from Monday to Friday. She can do this by clicking the Add New link.



4. Once the Staff ID, day ,class and subjects have been selected from the form, she can submit the information by clicking the Add New button. Then, a list of subjects on certain periods in class will be displayed in the page.

http://caswkc/test/default2J wrong1234	htm - Microsoft Internet Explorer		- 0 -
	. 01	Add New Class Timetable	
Login Site:	Mew All Add New	Ast Ast	
Change Password	Timetable for Class 5Science1 of	n Monday has been created in the database:	
Textler Profiles	Day DESCAN SAGAM SECAN S		
School Site: Objectives	Namgay BM BM BM BM BM	selected day are shown.	
Departiculion Chart	Return back to Class Timetable		
County		(THE REAL PROPERTY AND INC.	

 To update the existing class timetable, teacher has to click on the Update link and select which day that needs to be updated.

http://caswkc.test/default2.htm 1:37:22 P.M.	n - Microsoft Int	emet Explor	er	784.8 X	Update	Class	Timetabl	e		
E Record Book 574: Plannat Johor Bharti You are forcial a weing 1234	View All Add New Click the "Update" button to update the selected day in the time table.								-	
Hone	Ciass. 55	DEV	7.30AL	13, TOAL	1 9.5040	9/30/41	10 30AM	THUS A	111.107.1	1 12 13
Login Site:	Update	Mentitay	8	GED	ВМ	end .	ELA	BM	EIM	BM
Charge Password	Update	-			-			-	EM	BM
School Site	Update	Womesda	Click the s	the U ubjects	pdate b on the	select	to updated day	te	ви	BM
Droumtration Coart	lodat		Lane	In	-	Lase	Law	Leu	and a second	

6. As for the Personal Timetable, basically the functions are the same as Class Timetable but the teacher able to select the subjects that she taught on the selected class and day when she clicks on the Add New link



7. When the teacher has selected the relevant subjects for certain classes on that day, she can click the Add New button to submit the form. A new page will display the added information on the personal timetable.

http://caswkc/test/default2.htm	n - Microsoft Internet Explorer
1:56:18 P.M.	Add New Personal Timetable
SMK Rahmat Johor Bharu Militare Legendon St. Wing 1734	Personal Timetable for wong1234 on Thursday has been created in the database:
Home Home	Bit Bit Bit 2 Bit Bit 3 Bit Bit 4 Bit Bit
Chings Patronet () * Tasther Provide () School Site:	S DM KSCN D DM KSCN B DM KSCN B SEL Avia B SEL Avia
Objectives Organization Chart	Return back to Personal Timetable
School Events	
Time Table	

8. Under the Syllabus Plan module, teacher able to view her own syllabus plan, add a new syllabus plan or update the existing syllabus plan. She can also view the comments made by headmaster on the written syllabus plan.

withg)214	Sv	llabus	Plan Mer	าน	Wi-			-
Home ngin Site: Logout	View /	All Add N	lew Update		E	15		
Change Password	Use	SUDIC	t Chapter N	Topic	Objec	live	Contents	Contras Vi
Teacher Profiles	5501	El	2	des tead	adadda	adada	00800900	
haal Site	5501	HM.		donalize	d and one	denune denueza	diadasdasdasdas daadasdasdasdas	
Objectives	SSC1	EM		datidad	deadas	usansa	deodaenaudaenaadae	and the second s
Organization Chart	Return	back to	Syllabos Plan	1	A	Co car	mments from the viewed in t	h headmaster this column.
School Events						in		and and

9. In the Add New for syllabus plan, she can select the class that she is teaching, the subject, chapter no and type in the topic, objective and contents. Then she can click the Submit button to submit the form.

Thilly: / association detault? htm	- Microsoft Internet Explorer	and the optimized and the second states of the second states of the	
2:16:06 P.M.	Syllabus Plan Menu		1
E Rateri d Brok SMI, Rateriat Johor Enarg	1000		-
1.1 III - The set had a first the	View All Add New Update		100
	Add New Syllabus Pl	lan 🦾	
Login Site	Please fill in the form bel Click the Submit button t	low to add a new record of Syllabus Plan. Io save the record or Clear button to clear the form.	
C. Logour	Name:	Wong Kok Chung	
Course Password	Staff ID:	wong1234	
Transfort Archives	Class:	5Science1	
School Sile:	Subject Name:	Bahasa Melayu 💌	
Chiper Synn	Chapter No.:		
Degenizetion Chart	ropic.		
Calendar 15 D	Objective:	I	
fitness water			
Teacher Situ:			
COLUMN TABLE CAL	Contents:		
Epitators Alan			
Chinese Part of			
Student Site:		Submit Reset	
Stater Profiles			
Tear Decili	Contraction of the		
Services	Return back to		
and the second se	Service in the second		-

- 10. As for the Update Syllabus Plan module, it is similar with the update timetable function.
- 11. Under the Lesson Plan module, teacher able to plan their daily lesson plan on certain subject for classes in school. When she clicks on the Lesson Plan button, she will enter the Lesson Plan Calendar for the current month.

E Record Book CMM. Pahmat Johor Enan Worm 1231 Hom Login Site: Casender School Site: Calendar School Events	http://caswkc/test/default2.htm - Mic	rosoft Internet Explorer	_10
Home Login Site: Logout Change Password School Site: Objectives School Events School Events	E Record Book SMK Rahmat Johor Bharu Yee and Noord Vir of Wong 1234	Lesson Plan On Thursday, January 23, 2003 for wong1234 Please select any date to create the lesson plan.	
Change Password Lessher Profies School Site: Objectives Calendar School Events Today Hokday	Home	Calendar January - 2003	
School Site: Organization Chart Calendar School Events Today Holday	Change Password	5 6 7 8 9 10 11	
Calendar School Events Holday	Schoul Site:	lesson plans on this day	14
	Calendar School Events	26 27 28 29 30 31	

12. There is an indication of numbers in showing how many lesson plans have been created for the certain day. To view the lesson plans, teacher has to click on the day on the calendar. The lesson plan will display the lesson time, date of modified, status of validation, class, subject and topic created.

E Record Book SNV: Rahmat Johon Bhatu			Click on the pencil ic Click on the dustbir	Lesson plan which has by validated only can be viewed	been d
		Back to edited month	Lesson plan(s	s) Monday January - 20, 2003	
	wung1234	Lesson Time Model	ed States Class	Subject Topic	*
1.11		n 1/19/2	003 Validated SBC1 BM	ABC	View
ogin Site	lesson plan validated o	has been n 1/23/2 r not.	DO Het SVE GE	O Bentuk Muka Burni	25
	nge Passenri	10.30am-11.05am			1
1	scher Profiles	11.05am-11.40am	-		~v
1.1	All and the second second	11.40am-12.15pm	Click on the	a loop to sports a new loop	
School Site		12.15pm-1.00pm	Chek on the	ricon to create a new lesson	28
		1 DOwns 1 10mm	plan or delet	e an existing one.	
chool Site	Abuer west	1.00pm-1.40pm			

13. To view the validated lesson plan, click on the View link. Teacher can only view back the written lesson plan and the comments given by headmaster.

http://caswkc/test/default2.htm-1	Microsoft Internet Explore	and the second second	Party and a state of the second second second second	
2:55:03 P.M.	Status Lesson Plan:	View Le	esson Plan	-
ENIS, Rahmat, Johor Bharts	Userid:	wong1234		
A III AND A REPORT OF A	Teacher's Name:	Wong Kok Chung		
widnig 2734	Last Modified on:	1/23/2003 2:54:55 PM		
A state of the second sec	Lesson Plan on Date:	1/20/2003		1
and the second	Lesson Period (nour):	7.30am-8.10am	K	
Statement of the local division of the local	Class	5SC1		
Login Site:	Subject:	BM		
Logend	Таріс	ABC ABC	Fields shown are in readonly mode.	a
School Site:	Scope:	ABC		-
Colordan	Results:	Good		-
Teacher Site.	Comments from Headmaster	\bigcirc		*
Apaton Kina a		Return to the E	idsted Lesson Plan	-

14. To add/edit a lesson plan on the certain lesson time, click on the pencil icon on the right of the table. Then teacher can input the select the subject, class, topic, scope and results from teaching. To submit the form, she can click the Save button below the form.

2:45:02 P.M.	Microsoft Internet Explo	urer	-
E Pasard Back		Add/Edit Lesson Plan	
The register to pass the	Userid:	wong1234	
wongrass	Teacher's Name:	Wong Kok Chung	
	Last Modified on:	1/23/2003 2:44:42 PM	
A CONTRACTOR OF THE OWNER	Lesson Plan on Dat	te: 1/20/2003	
NIN SHEET ALL LEADER	Lesson Period (hou	ır): 9.30am-10.10am	
	Class:	5Science1	
	Subject	Bahasa Melayu 💌	
Charge Research			
Teacher Frankes	Topic:	Bentuk Muka Bumi	
		Bentuk Muka Bum 	-
nuol site:	Reaso	A REAL PROPERTY AND A REAL	
Conversion	Scope.		1.5
Gegenization Court		Select any button to custon	nize
Contractor		the text in the scone	
And and a local division of the local divisi	Results:	the text in the scope.	Log Color
School Events			
acher Site:			
Time Table		Save	
A support of the second second			
		Determined a Defend I and Disc	
Louise Participation (17)		Keturn to the Edited Lesson Plan	

15. To delete the existing lesson plan before it is validated by headmaster, click on the dustbin icon. Then click the Delete button to delete the lesson plan.

http://caswkc.test/default2.htm -Micro	osoft Internet Explor		
2:50:01 P.M.			-
E Record Book	1 1 1 2 2 2	Delete Lesson Plan	
The second second second second second	Userid:	wong1234	
Wittin 1234	Teacher's Name:	Wong Kak Chung	
	Last Modified on:	1/23/2003 2:49:55 PM	
And Address of the Ad	Lesson Plan on Dat	te 1/20/2003	
And a second sec	Lesson Period (hour	n): [9.30am-10.10am	
Login Site:	Class:	6Science1	
And a second second	Subject:	Bahasa Melayu 💌	_
Construction Parsonnel 1	Topic	Bentuk Muka Bumi	
School Site:	Scope:	Bentuk Muka Burni Click to delete the lesson pla	n
Cannar 3	Results		-
Teacher Bite:		Delete	
		Return to the Edited Lesson Plan	

 If not record was added / deleted, a message "No record added/deleted" will display.

30403 P.M.	and the second second	Click on the	pencil icon to add or edit a lesson plan.	
		Click on the	dustbin icon to delete the lesson plan.	
E Rahmod Book		C	record was added/odited	
Contract Contract of Contract	Back to edited month	Lesson	plan(s) Monday Synamy - 20, 2003	
	Losson Time	Modified Status Class	s Subject Topic	
2 House and a local state	7.30am-8.10am	1/19/2003 Validated 5SC1	BM Apc	View
A AVE TO THE PARTY OF	8.10am-8.50am			28
In Sile:	8.50am-9.30am	La companya da		28
I I LANDAR	9.30am-10.10am	1/23/2003 Med SV2	Message to show that no	28
Charge Partment I	10.10am-10.30am		record was added/deleted	28
A Day of the second sec	10.30am-11.05am		record was added/dereted	28
Contraction of the local division of the loc	11.05am-11.40am		and the second sec	28
and Sates	11.40am-12.15pm		the second se	28
Objectives	12.15pm-1.00pm	and the particular sector		28
Constitution of the second second	1.00pm-1.40pm	and the second second	ten and the second second second second	28
Contraction in the second	1.40pm-2.20pm	La construction of the second		28
Contraction of the local division of the loc	2.20pm-3.00pm			28
and standing party stands	3.00pm-3.40am			28
Standard and	3.40pm-4.00pm			28
ther Site:	4.00pm-4.35pm		HI CONTRACTOR OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWN	28
Tany 1954	4.35pm-5.10pm		North Contraction of the Contrac	28
And in the second se	5.10pm-5.45pm			28
and the second division of the second divisio	5.45pm-8.20pm		all and a second s	28
Contraction and Contraction	6.20pm-8.55pm			28

B.1.3.4 Student Site

In this **Student Site**, teachers able to search through the student profiles from the school database under the **Student Profiles** module and update the marks for students under their classes under the **Exam Records** module.

 Under the Student Profiles module, teacher can search student profiles through Form Teacher Name, Student ID, Student Name, Class categories. They can also customized the search which begins with the type in text. Then, they have to click the Search button to begin the search.

http://coswkc/test/default2.htm	Microsoft Internet Explorer	
Harris Control of Cont	Student Profiles Please select the categories below and click the "Search" button	A. (
School Site:	Categories : Form Teacher Begins with The following information are as follows:	Search
Openfires Dependention Chart (Control Events Support Events	Current and the second and the secon	5
Teacher Site:	Return to Minist	Description on classes
Student Site:		make search more easy
Daw Record	4	-

 In order to make the search more viewable, the teacher can navigate through the table with a highlighted row and a navigation bar at the bottom of the table.

http://caswks.test/default2.htm	N Microsoft Enternet Explorer	-1012
Login Site:	Student Profiles	
Lugat	Please select the categories below and click the "Search" button	1
Conter Parlies	Categories : Class Begins with IK/18 Search	1
School Site:	The following information are as follows:	
Objectives	ID Name Class Form Date Gender Date Of IC No. Parent Parent Addr.	ess
Openinsian Cuirt	S020069 Singh Gill 11048 Sai Aisyah 2/1/2002 M 1/1/1990 8/1212- Wong Ah 06-5432 Choy	
Loss Court	D22004 We Par NOT SE Angels 210002 F Writing 071215 Weig An	
Teachar Site:	Go First Previous Next Go Las Page : 1	of 1
Title Title	Navigation bar	9
Construction of the local division of the lo	5001, 504, 7007, 504, 507, 507, 507, 507, 507, 507, 507, 507	
Student Site	Gram Bird, Bird, Bird, Bird, Bird,	
Construction of the	PART OF THE OWNER OF THE OWNER	
i fandina i l	Datum to How	
Services;	Return to a	E

3. Under Exam Records module, teacher able to search for the students under her class based on Student Name, Class and Examination Type (monthly, mid and final term). She can type the relevant information into the fields and click the Search or Clear button.

m - Microsoft Internet Explorer	
Student Examination Records	
Please type the student's name. Then, select the class and type of examination. Click the Search button to view the information.	
Student Name:	-
Class: 5Science1 -	
Exam Type: Monthly Mid Term Final Term Search Clear	C.D.C.
Records on Monthly Examination	
SUBJECT Manager Stores Subject and Subject	8
Click to update the selected student examination record.	
	Student Examination Records Please type the student's name. Then, select the class and type of examination. Click the Search button to view the information. Student Name: Class: \$Science1 • Exam Type: • Monthly C Mid Term • Final Term Search Cleer Records on Monthly Examination Subject Marks \$1000 State \$20000 Voting \$251 Student examination Subject Marks \$1000 Click to update the selected \$10000 Student examination record. Subject Marks \$1000

4. Once the records was found, the student(s) with their learning subjects and marks will be displayed into a table form. Then, she can update the marks for the students by clicking the Update link on the left of the table.

Please enter the marks Click the "Update" but	s according to the subject(s) on to submit the selected su	bject(s) or "Reset" button to undo	the changes.
Ingine Stile Compare Austine Control Changes Austine Control Changes Austine Control Control Stite: Control Stite: Contr	Student ID Student Name Class Subject 1: Subject 2: Subject 3: Subject 4: Subject 5: Subject 5: Subject 6: Subject 7: Subject 8: Subject 9: Subject10:	S030001 Wong Kok Chung SScience1 Bahasa Melayu English History Pend Islam/Moral Physics Chemistry B Marks can be entered into provided fields	Mark (Mark () Mark () Mark () Mark () Mark () Mark () Mark () Prk () Prk () Prk ()

 If no record was found, a message indicating "No records found in your list of students" will display.

http://caswkc/test/default2.t	m - Microsoft Internet Explorer	
Home Login Site:	Student Examination Records Please type the student's name. Then, select the class and type of examination. Click the Search button to view the information.	the second second
Change Password	Student Name: Class: 5Science1 Exam Type: Monthly Mid Search Clear Message shows that no re	cor
Objectives Organization Ghart Calendar	No records found in your list of students	

B.1.3.5 Services

The function provided in the Services is the same as the B.1.2.5 for clerk in school.

B.1.4 Headmaster Section

Headmaster Section provides headmaster with functionality to monitor and validate teachers' syllabus plan and lesson plan besides able to browse through student profiles and examination records. Headmaster also has access to update his/her own account and browse through the school site.

B.1.4.1 Login Site

Headmaster will need to login into the system by using the login ID created by school administrator or clerk in school. Therefore, they will have the same functionality as the Login Site in **B.1.2.1** for clerks where they able to logout, change password and update their profiles.

B.1.4.2 School Site

Headmaster able to gain access to School Site but he/she can only browse through the relevant information about the school such as school objectives, organization chart, school public holidays and annual events in school.

B.1.4.2 Teacher Site

Teacher Site for headmaster contains the **Teacher Info**, **Timetable**, **Syllabus Plan**, **Lesson Plan** modules where he/she has the access to browse through the information from every teacher.

6. Under the Teacher Info module, headmaster can browse through teacher profiles He/she can click the Show All button to show all the profiles on the teachers or Hide button to minimize the table.

MK Rahmat Johor Sharu				I	Teach	ner Info
raswic60	Sh		lide			
Home	No	Staff ID	Name	Gender	Race	IC Number
ogin Site:	1	T020012	abcd123	Male	Indian	660302-08-5677
Logout	2	0033001	Administrator	Male	shiainy	660302-09-5606
	3	causk:80	Pater Gade Christensen	Mule	Othern	630512-05-6451
Change Password	4	C02001	Zainal Abidm b Zainab	Nale	Malay	060302-09-6606
Hendmaster Profiles	5	kama:123	Hitt. Kemanati Bte Ali	Female	Malay_	650915-06-4502
hool Site:	6	wongt 234	Wong Kok Chung	Male.	Chinese	800516-08-5435
The second se	38	1020301	test1234	Male	Majay:	660302-09-5606
- Hole Charles and	8	HIRRIDAH	Ng Chee Wai	Mate	Chinese	790116-08-5412
Organization Chart	11	TELESO12	Siew Sook Ming	Frindlet	Chinese	780125-09-5495
Calender	-	1029601	1#\$11234	Male	Ateiny	123458-02-1234
School Events	Go	First	Previous Next G	io Last		Page : 1 of 2

7. As for the Time table module, headmaster can select between the class timetable and personal timetable. Inside the Class Timetable page, headmaster able to search for information on class timetable based on Teacher Name, Class and Day.

bttp://caswkc/test/default1.htm School Site:	- Microsof	t Internet	Explorer		的影響			-x Alcan	100	
Objectives		Class	Time	Table						10
1 Calendar	Plea	ase select	the categ	ories belo	w and click th	e "Search"	button		3	
School Events	Cat	egories :	Day	-	Begins w	ith • M	lon	0	Search	1.050
Teacher Info	The	following	informati	ion are as	follows:					
Time Table	Class	Name	Day	7.30AI	M 8.10AM	8.50AM	1 9.30AM	10.30AM	1 11.05AI	M 1
Lerzon Plan	5SC1	Wong Kok Chung	Monday	BI	GEO	BM	BM	BM	BM	в
Student Site: Student Profiles	5SC1	Wong Kok Chung	Monday	BM	BM	вм	BM	вм	BM	B
Exam Record	Go Fir	st Pn	evious	Next	GoLast	6			and the second s	
Services:					- Wester				and the second	10

8. Inside the Personal Timetable page, headmaster can only search based on

Teacher Name and Day.

http://caswkc/test/default1.htm School Site:	n - Microsoft I	nternet Expl	orer			Contraction of the second	Sale			
Objectives	Please	ersonal T e select the c	ime Tab	elow and c	lick the "See	rch" butto	n	A	-	
School Events	Categ	ories : Day	,	• Be	gins with 💌	Tuesda	ay .	S	earch	
Teacher Site:	The fo	allowing infor	mation are	as follows:					-	
Toucher Into	Day	Teacher Name	1st Period	1st Class	2nd Period	2nd Class	3rd Period	3rd Class	4th Period	4th Cla
I plabus Plan	Tuesday	Wong Kok Chung	BM	5SC1	BM	5501	BM	5SC1	BM	550
Lesson Plan	Go First	Previou	IS Next	GoLas	4					
Student Site:	1									
Shatent Problem		-			1	e Table	1		-	
ETABLINECOTO				Return	to Barrow	and the same				
Services:										
Lonaci Wechalaw		and the second second	and the	-		-	The state of the s	-		10

9. Under the Syllabus Plan module, headmaster able to monitor the syllabus plan by browsing through every syllabus plan wrote by teacher. He/she can give comments by clicking the Comment button and type in the comments in the field given. Then, he/she should save it for the teacher to be able to look at the comments.

http://canwicktest.default1.htt	m Microsoft Internet I	Coplorer		- 0
Login Site			Teacher Syllabus Pla	n
" they attanced at Minimum London (Browse through the If you want to put d	teachers' lown any c	Click Save button to save the	50
Schoel Site	Comment	-	comments made or Cancel	
Countration Chart	Save Cancel	Dr	button to cancel the operation	
- investor	Name	Wong		wong1234
School Frenze	Subject:	EM	CDADTER NO	
Teacher Site:	Topic:	Karan	igan	
Time Lable and	Objective:	dasds	sedsadea	
· Constanting	Contents:	dsada	andanderadan	
* constructions	Comment(s):			
Services	Return back to			-
			the second s	the local division of the local division of the

10. Under the Lesson Plan module, the headmaster able to search on the selected teacher based the class and date of lesson plan. If records found, he/she can validate the written lesson plan by clicking on the Validate link on the left of the records of lesson plan. If the lesson plan has been validated earlier, then he/she can only viewed back the lesson plan by clicking the View link.

http://caswkc/test/default1.htt	m - Microsoft Internet Explorer	
E-Record Book SMI Rahmat Johor Brians	Teacher Lesson Plan Records	Î
Cenv4xd90	Please type the teacher's name. Then, select the class and date of the lesson plan. Click the Search button to view the information.	
Login Site:	Teacher Name:	
Logart March	Class: Science1 💌	
Change Assessed	Date of Lesson Plan: 1/23/2003	
Additional Proton	Search Clear	
School Site:	Lesson Plan Rent 11 1 00 000	
Olipectives	Click to view the validated lesson plan	y Headr
Department on Courts	Long Norman and Alarman average and Alarman averag	Contraction in a
Canadar		
Gabour Events	Click to validate the lesson plan	
Teacher Info		
Time fable and	Return to the	
Sylabor Plan		

11. If the Validate link is clicked, then headmaster can give comments on the selected lesson plan in the Validate Lesson Plan form and then click the Validate button.

adian Reference	a cos	the second state of the se
Cick the Vali	he lesson plan on the unletted date, is be given under the form below (if necessary) late* button to approve the lesson plan or "Rese	t" button to undo the changes.
Ter	acher's Name	Wong Kok Chung
Les	ison Plan on	1/20/2003
Les	ison Period	9.30em-10.10em
Cla	55	5V2
Sut	oject	GEO
Lat	t modified on	1/23/2003
Top	bic	Bentuk Muko Bumi
Cor	nternt	(D)Bentuk Ruka Dumi(/D)
Ret	ults	
Cor	nments by Headmaster(optional)	Good. Reep up the initiative to motivate students in learning about our eacth.]
		Volidate Reset
		the second s

12. Once the lesson plan has been validated, the status of the lesson plan will changed to "Validated" and the information on the lesson plan will be displayed.

School Site: Name Nam Name Name Name </th <th>http://caswic/test/default1.htm Coput Coput Coput Compt Parametric Mandminite Profiles</th> <th>) - Microsoft Internet Exp</th> <th>larer on olan for Wong Kak Chung on Monday, Ja</th> <th>nuary 20, 2003 on has been validati</th> <th>_ [] ×</th>	http://caswic/test/default1.htm Coput Coput Coput Compt Parametric Mandminite Profiles) - Microsoft Internet Exp	larer on olan for Wong Kak Chung on Monday, Ja	nuary 20, 2003 on has been validati	_ [] ×
Marcine Marcine	School Site:				
Independent Chart Independent Chart Independent Chart	I Desconding	Name	Worg Roli Chilling	222	
Image: Particular Image: Particular Note and Particular * School Events // * School Events // * Note and * * School Events // * School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and * * Transmer Note School Events // * Note and *	Annalistan Contra	Lesson Plan Dat	Manday, January 39, 2019		-
Calendar School Green Vin * School Green Vin School Green Vin * Traction Vin School Green Vin		Lesson Period	fit Mare fit unem		-
Same Front File Teacher Site: Topic: Site: Topic: Site: Topic: Site: Topic: Site: Site: Topic: Site: Si	Calendar	Class	W SERVICE STREET, STREE		
Teacher Site Teach	States Frants	Subject			
Teacher She: Teacher She: Te		LastMotified	M2YXA		
Teacher Mo	Teacher Sile	Торіс	Granyost		
Emer Table Exercise	Teacher 3ido	Content	Truching on how to white a good ussay.		
Lation Part and Lation Part an	Law Table	Recuite m	Statem there is a same work work in good in some		1.1
Lesson Par and Lesson Par and Lesson Par and	1 American	Comment			11
Lesson Part					
Student site:	Cross Par	Return to the	(HOLE & HE CO		

B.1.4.4 Student Site

In this Student Site, headmaster able to search through the student profiles from the school database under the Student Profiles and Exam Records modules. He/she is not able to update the marks on the subjects.

Appendix C – Source Code

Below are some of the ASP codes used in development of E-Record Book.

1. Global.asa (file which provides the connection string to all the ASP files

from database)

1	SCRIPT LANGUAGE=VEScr	ipt RUMAT=Server>						
2								
3	'You can add special e	went handlers in this file that will get run automatically when						
4	'special Active Server	Pages events occur. To create these handlers, just create a						
5	'subroutine with a new	e from the list below that corresponds to the event you want to						
16	'use. For example, to	use. For example, to create an event handler for Session (mStart, you would put the						
7	'following code into t	his file (without the comments):						
8								
9	'Sub Session OnStart							
H	"**Put your code here							
11	'End Sub							
12								
13	'EventName	Description						
14	'Session OnStart	Runs the first time a user runs any page in your application						
25	'Session OnEnd	Runs when a user's session times out or quits your application						
16	'Application OnStart	Runs once when the first page of your application is run for the first time by any user						
17	'Application OnEnd	Runs once when the web server shuts down						
18								
19								
20								
21	CSCRIPT LANGUAGE=VBScr	ipt RUNAT=Server>						
22	'Sub Application OnSta							
23	'End Sub							
24								
25	Sub Session OnStart	Runs the first time a user runs any page in ENBMS application						
26	'set object connec	tion timeout						
27								
28								
29	'Create an ADO Con	nection						
30	Set abjConn = Serv	er.CreateObject ("ADOD8.Connection")						
31								
2	'Create a ADO Reco	rdset						
33	Set objR5 = Server	.CreateObject ("MADB.Recordset")						
34								
35	'Specify connection	n string on Open method						
35	ProvStr = "Provide	r=SQLOLEDB.1;Password=caswkc;Persist Security Info=True:User ID=wkc;Initial Catalog=ExBMS;Data Source=CASWKC;"						
37	objConn. Open ProvS	tr						
38								
39	Set Session("com") = objConn						
1.87								

41	End Sub
42	
朝	Sub Session_OnEnd * Runs when a user's session times out or quits your application
-44	"Close the data connection
45	objConn.Close
46	End Sub
47	
48	
49	
50	<script language="VESCript" runat="Servel"></script>

2. Holiday1.asp (ASP codes using session to refer to connection object and the

use of Recordset)

```
4
   'Reference the Session connection variable
24 objConn = Session("conn")
25 Dim rsHoliday
26 'select all data from RB UserProfiles
27 strSQL - "SELECT * FROM PB Calendar Order by CalDate"
29 Set rsHoliday = Server.CreateObject("ADUDB.Recordset")
11 rsHoliday.Open strSQL, objConn
0 2
33 
SA (CD)
15 A
36 For 1=0 to 2
    Response.Write "Ctd class=header)"
   If rsHoliday, Fields (1). Hame = "ID" Then
38
         Response. Write "ID"
39
   Elself rsHoliday.Fields(1).Name = "CalDate" Then
40
          Response. Write "Day & Date"
41
      Elself reHoliday. Fields(1). Name = "Holiday" Then
42
          Response. Write "Holiday"
43
    End If
45
45
     Response. Write "(/td)"
45 Bext
  $
```

48	(/tt)	
49	8	
50	Do While Not rsHoliday.EOF	
51	Response. Write "CCD"	
52	For i=0 to 2	
53	Response.Write " <td tlass='body"</th'></td>	
54	Response.Write " "	
-55	If rsHoliday.Fields(i).Name = "CalDate" Then	
56	Dim varDate	
57	varDate = rsHoliday.Fields(i).Value	
- 58	Response.Write FormatDateTime(varDate ,1)	
59	Else	
60	Response.Write rsHoliday.Fields(1).Value	
61	End If	
62	Response.Write "	
63	Next	
64	Response. Write "	
65	raHoliday. NoveWext	
66	Loop	
67	'close the recordset	
68	rsHoliday.Close	
69	0	

3. Logout.asp (session is set to nothing once the user has logout from the

system)

```
4
   Response.Expires = -1000 'Hakes the browser not cache this page
3 20
5 chtal>
6 (head)
7 cmeta http-equiv="Refresh" content="1; URL=login.asp">
8 </head>
9 chody bgcolor="squa" leftHargin="0" background="isages/chook.jpg" topHargin="0" sarginheight="0" sarginwidth="0">
10 <div align="center">
11 <1--begin the content of page-->
      (p) and sp:
      (p) anbsp;
14
     anbsp;
15 4
16 'set object connection timeout
17 Session. Timeout = 1
18
19 Set objComm = nothing
30 Set Session("UserID") = Nothing
22 Session. Abandon
23 1
14 (table)
25 <ing name="line_header" src="images/line.gif" width="100%" height="3px">
S (center)
17 ch30
28 <font face-arial colot=red Thank You.chr>You have successfully logout</font>
29 </h3>
30 (/center)
31 <ing name="line_header" src="images/line.gif" width="100%" height="3px">
32 K/table)
 3 K/tdx/TRX/TBODYD
```

4. unlock.asp (usage of ADO Command object to set value for counter and

status in RB_Login table)

```
4
 8 'Reference the Session connection variable
9 objConn = Session("conn")
11 ' Create the remove command and set its properties
D Set cmd = Server.CreateObject("ADODB.Command")
10 cmd. ActiveConnection = objConn
14
15 For i = 1 to Request. Form ("UserNo"). Count
       cad. CommandText = "Update RB Login Set Counter = 0, Status = 1 Where No = "" & Request. Form("UserNo")(i) & ""
16
      ' Execute the command on the Active Connection
17
18
       cad.Execute
19 Hext
20
21 'Output some feedback to the user to let them know which products
22 'were removed from the inventory database. >>
3 00000
24 <ing name="line_header" src="images/line.gif" width="100%" height="3px">
25
25
27 <h3>The following user account(s) have been unlocked from the database:</h3>
29 Ct FOR EACH user IN Request. Form ("Userlio")
       Response. Write "User #" 4 user 4 "@p"
       UEXT ED
```

Appendix D – Interview Questions

- What is the usage of a Buku Rekod Mengajar Guru Sekolah Menengah for teachers?
- 2. What are the requirements in writing a record book?
- 3. What is the format in preparing a good and standard lesson plan?
- 4. How are the marks and grades of subjects being recorded in the record book?
- 5. Who are the people in the school that have been given the authority to access the record book?
- 6. What is the level of security for the information recorded in the record book?
- 7. Can the teachers be allowed to update their record book other than school hours?
- 8. Do teachers need to bring along their record books when they are attending classes?
- 9. Is the record book need to be validate by the school headmaster?
- 10. When do the teachers hand out the record book to the headmaster for validation?
- 11. How long will the validation process take in your school?
- 12. What do you think of the existing manual record book in the school?
- 13. Do you think the existing record book has fulfilled the requirements of the teaching and learning process in the school nowadays?
- 14. What is your suggestion in improving this record book?
- 15. How do you find an electronic record book management system will help the teachers and headmaster to manage the record book?
- 16. Are the teachers in the school prepared to learn in using the electronic record book management system when it is implemented?

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