Time Attendance Management System (TAMS)

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Abstract— **The main objective of this project is to develop a smart system - Time Attendance Management System (TAMS) by using XAMPP as web server package consisting mainly of the Pre Hypertext Processor (PHP) as a programming language, Apache HTTP Server, and Microsoft SQL (MySQL) as a database. The system is an online web application which has the ability to logon time in and out for lecturers every day. This system can be accessed only in Universiti Teknologi MARA (UiTM) local area network. Due to flexible working hour of lecturer, it is more efficient and easier if this system is applied as compared to the punch card method. This system provides efficient data management where the administrative staff can easily retrieved all the related information. The system is targeted to be implementing in the Faculty of Electrical Engineering (FEE).**

Keywords— **Time Attendance Management System (TAMS), PHP, XAMPP, Apache HTTP server, MySQL**

I. INTRODUCTION

Undeniably electronic system plays an important role in every day's life especially to an organization or institution. Being, the largest university in Malaysia, and to accept government challenge in upgrading the human capital, UiTM is rapidly develop an electronic system in every sector to enhance it performance in catering educational services.

Nowadays, new requirement always arises, therefore to cater that requirement new system should be developed. Time Attendance Management System (TAMS) is a proposed system that can fulfill one of the requirements in UiTM. It is an enhancement or value added for the existing system of manual punch card.

TAMS is employees punch in and out system which use internet browser from their Personal Computer or workstation in UiTM intranet only. It is user friendly and easy to use. This system is a tool in helping administrative staff to view, collect and print the staffs' attendance data. There is a rule regarding the availability of lecturer in respective working place should be at least 38.6 hours per week. Therefore this system will help the lecturer to plan on this matter and administrative staff to monitor their staffs.

II. METHODOLOGY

There are four software involve in the development of Time Attendance Management System (TAMS). The software's are XAMPP as a web server package consisting mainly of the Pre Hypertext Processor (PHP) as a programming language, Apache HTTP Server, and Microsoft SQL (MySQL) are the world's most popular open source database. Together, these four technologies provide a powerful platform for building database-driven Web applications.

Pre Hypertext Processor (PHP) is a scripting language originally designed for producing dynamic web pages. It has evolved to include command line interface capability and can be used standalone graphical applications. PHP is a widely-used general purpose scripting languages that is especially suited for web development and can be embedded into HTML (Hypertext Markup Language). It generally runs on a web server, taking PHP code as its input and creating web pages as output. It can be deployed on most web servers and on almost every operating system and platform free of charge. PHP is installed on more than 20 million websites and 1 million web servers [1][2][3].

Microsoft SQL Server is a relational database management system (RDBMS) produced by Microsoft. Its primary query languages are ANSI SQL (for unstructured blobs of data), Text (for textual data) among others. It also allows user-defined composite types (UDTs) to be defined and used. SQL Server also makes server statistics available as virtual tables and views (called Dynamic Management Views or DMVs). A database can also contain other objects including views, stored procedures, indexes and constraints, in addition to tables, along with a transaction log. [4][5].

XAMPP is a free and open source cross-platform web server package, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP and Perl programming languages. The program is released under the terms of the GNU General Public License and acts as a free web server capable of serving dynamic pages. XAMPP is available for Microsoft Windows, Linux, Solaris, and Mac OS X, and is mainly used for web development projects.

Officially, XAMPP's designers intended it for use only as a development tool, to allow website designers and programmers to test their work on their own computers without any access to the Internet. To make this as easy as possible, many important security features are disabled by

default. In practice, however, XAMPP is sometimes used to actually serve web pages on the World Wide Web. A special tool is provided to password-protect the most important parts of the package. XAMPP also provides support for creating and manipulating databases in MySQL and SQLite among others. [6].

The Apache HTTP Server, commonly referred to simply as Apache, used to serve both static content and dynamic Web pages on the World Wide Web. Many web applications are designed expecting the environment and features that Apache provides. Apache is the web server component of the popular LAMP web server application stack, alongside MySQL, and the PHP/Perl/Python (and now also Ruby) programming languages.

Apache is used for many other tasks where content needs to be made available in a secure and reliable way. One example is sharing files from a personal computer over the Internet. A user who has Apache installed on their desktop can put arbitrary files in Apache's document root which can then be shared. Programmers developing web applications often use a locally installed version of Apache in order to preview and test code as it is being developed. [7].

When developing a web application system, developers should follow System Development Life Cycle (SDLC) guideline [8]. SDLC involves several phases. The web development phases of TAMS are shown in Figure 1.

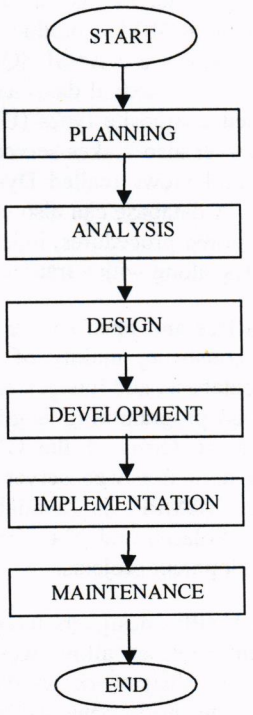

Figure 1: Web development phases

Figure 1 shows phases of the Time Attendance Management System development.

Planning starts with a concept or ideas. This stage answers the question of 'what' and 'why'. At analysis phase, developers analyze the requirement. The next phase is to design. This is where everything is put together and the actual design of the system is done. This is also where some of the flows in the original planning may appear and require some adjustment.

The work on the actual function of the website starts at development phase: writing the source code, compile, testing and display the output. Testing could mean testing the source code or testing the output by users.

Implementation phase is the time to go live. The system is implementing to the targeted users when it is ready to be use. When the system is implemented, it does not mean that it is good as it is. Maintenance is required since there are absolutely no way that the system will be working perfectly. Someone has to stay in the present system to take a look and ensure the program works perfectly.

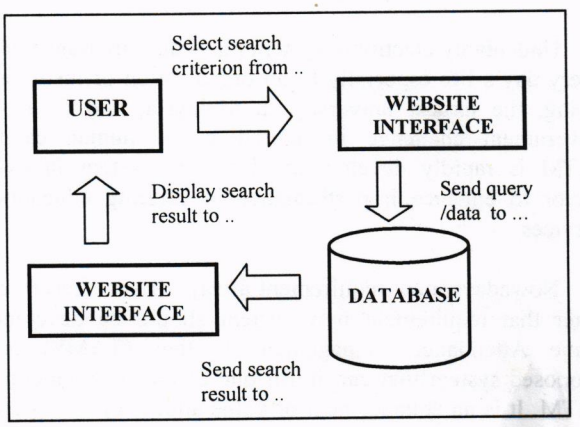

Figure 2: System user, website and database interaction

Three components describe the system complete operation: The user, website and database. Figure 2 above, illustrates the interaction between all three components and thus describes the system's function in its entirety.

Flowchart

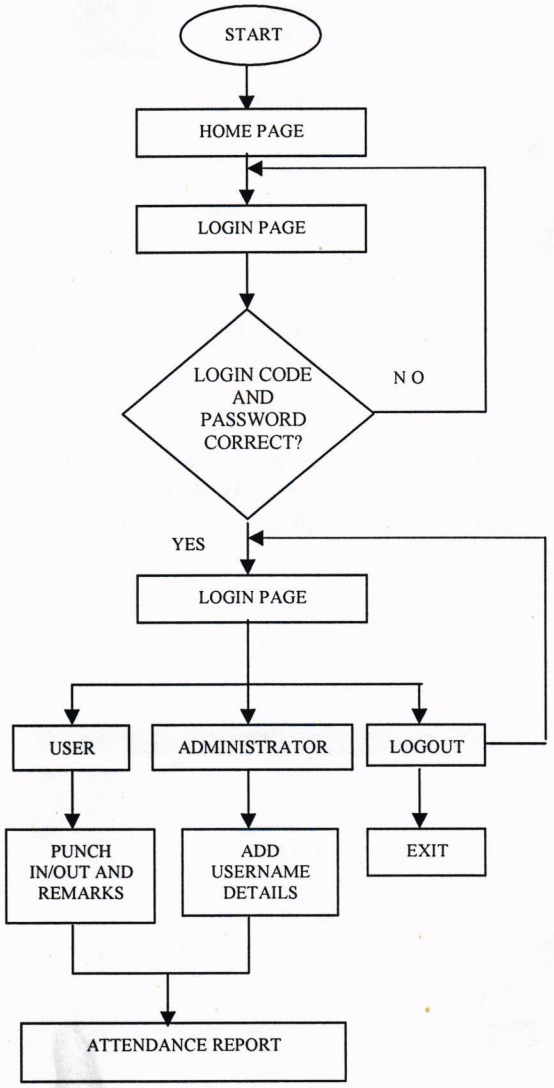

Figure 3: Flowchart of the project process

Figure 3 show the flowchart involve in Time Attendance Management System (TAMS).

III. RESULTS AND DISCUSSION

Figures

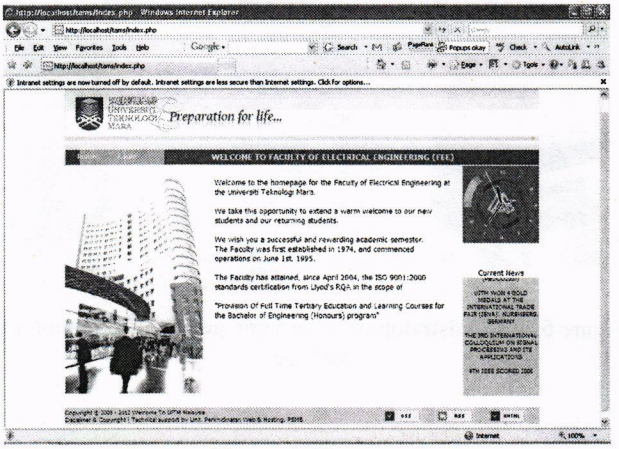

Figure 4: Home page

Figure 4 shows a home page Faculty of Electrical Engineering (FEE). Below figure will appear when user and the administrative staff click at Login.

Figure 5: Login page

Figure 5 shows a part of login page for user and the administrative staff. The administrative staff could be the dean and head of department. In order to access the system the users need to login using their unique Login Employee Code and password. Login Employee Code and password will ensure only registered user have the privilege access to enter the system. The unregistered users are not allowed to access the system. The administrative staff has the authority to view all the information of users' attendance.

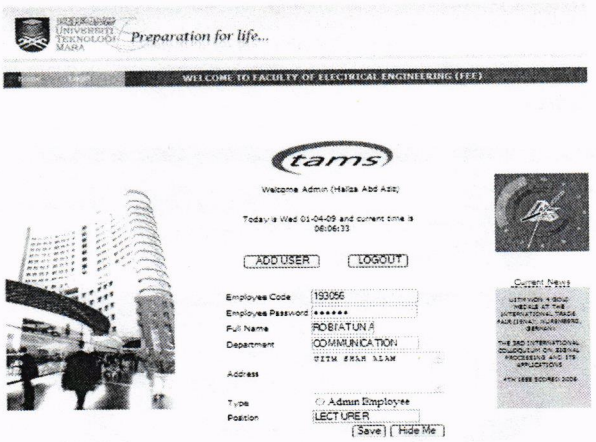

Figure 6: Administrator add username details information in database.

Figure 6 shows a page for administrator to register the details of new username. Only administrative staff can add and delete the entire user information database.

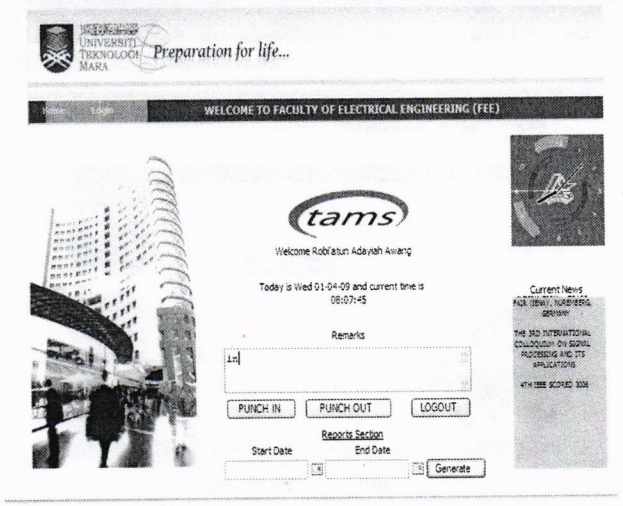

Figure 7: Punch in for time in.

Figure 7 shows a page after the user correct code and password are entered. The available parameters are punch in, punch out, logout button and remarks form. In this page, user will click the "punch in" button, which means they start their work. As for example, this figure shows the time for punch in is 08:07:45 am on Wed 01-04-09.

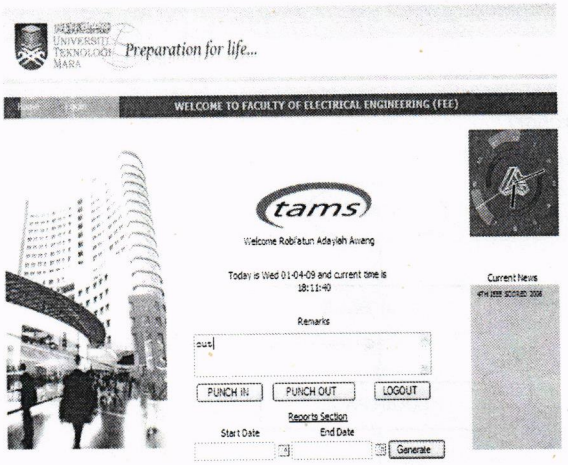

Figure 8: Punch out for time out.

On the other hand, the user will click the "punch out" button for leaving from their work. As shown in Figure 8, the users punch out at 18:11:40 pm. The time is set at 24 hours format.

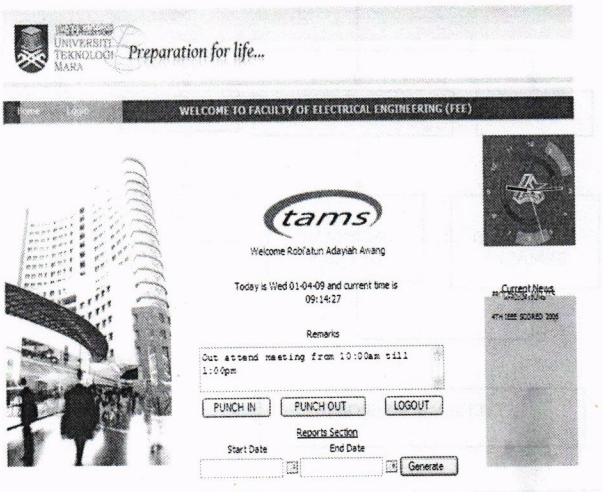

Figure 9: Remarks form parameter

The "remarks' form is filled if the users need to update their activities for that particular day. For example, in Figure 9 shows the remarks for "Out attend meeting from 10:00am till 1:00pm".

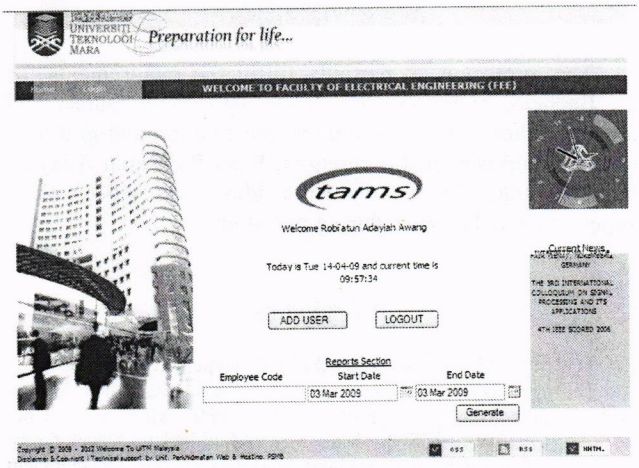

Figure 10: Reports Section to view daily report

This system also provides a daily and monthly report on lecturer's attendance. The 'generate button' in Figure 10 will generate the daily attendance report on that particular day for that particular staff as shown in Figure 11. As for FEE's lecturers, they are required to be in working place at least 38.6 hours per week. Therefore, this report will help them to calculate their working hour.

Employee Attendance Report

Back

Full Name	Att Date	Time In	Time Out	Total Hours	Remarks
Robi'atun Adayiah Awang	03-Mar-2009	07:46:00	17:47:00	10:01:00	

Generated by Robi'atun Adayiah Awang On 07-04-2009

Figure 11: Employee Attendance Report by daily

The daily and monthly attendance report for the all staff can be accessed only by the administrator. By selecting employee name, start date and end date on the page of Figure 12, they can view the report as shown in Figure 13. As for the staff, they can only view their daily and monthly attendance report too.

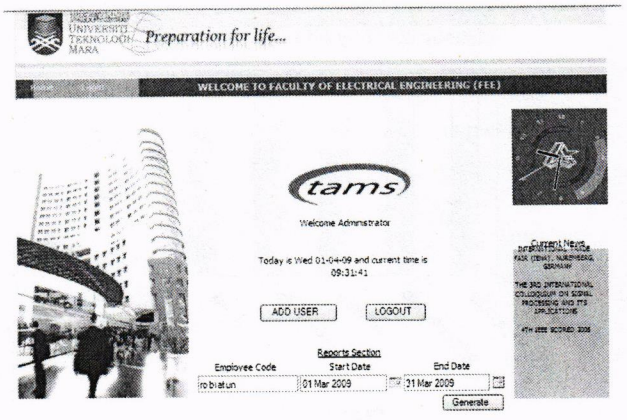

Figure 12: Reports Section to view monthly report

Employee Attendance Report

Back

Full Name	Att Date	Time In	Time Out	Total Hours	Remarks
Robi'atun Adayiah Awang	02-Mar-2009	08:09:00	17:09:00	09:00:00	
Robi'atun Adayiah Awang	03-Mar-2009	07:46:00	17:47:00	10:01:00	
Robi'atun Adayiah Awang	04-Mar-2009	00:00:00	00:00:00	00:00:00	Sick Leave
Robi'atun Adayiah Awang	05-Mar-2009	08:16:00	17:09:00	08:53:00	
Robi'atun Adayiah Awang	06-Mar-2009	07:51:00	17:40:00	09:49:00	Out at 10:00am attend meeting
Robi'atun Adayiah Awang	09-Mar-2009	00:00:00	00:00:00	00:00:00	Annual Leave
Robi'atun Adayiah Awang	10-Mar-2009	00:00:00	00:00:00	00:00:00	Annual Leave
Robi'atun Adayiah Awang	11-Mar-2009	07:21:00	16:55:00	09:34:00	
Robi'atun Adayiah Awang	12-Mar-2009	00:00:00	00:00:00	00:00:00	Attend Training
Robi'atun Adayiah Awang	13-Mar-2009	00:00:00	00:00:00	00:00:00	Attend Training
Robi'atun Adayiah Awang	16-Mar-2009	07:53:00	17:04:00	09:11:00	
Robi'atun Adayiah Awang	17-Mar-2009	08:10:00	17:09:00	08:59:00	
Robi'atun Adayiah Awang	18-Mar-2009	07:42:00	17:42:00	10:00:00	
Robi'atun Adayiah Awang	19-Mar-2009	07:52:00	17:53:00	10:01:00	
Robi'atun Adayiah Awang	20-Mar-2009	07:53:00	18:53:00	11:00:00	
Robi'atun Adayiah Awang	23-Mar-2009	07:54:00	17:04:00	09:10:00	
Robi'atun Adayiah Awang	24-Mar-2009	08:06:00	17:06:00	09:00:00	
Robi'atun Adayiah Awang	25-Mar-2009	07:56:00	17:16:00	09:20:00	
Robi'atun Adayiah Awang	26-Mar-2009	07:45:00	17:30:00	09:45:00	
Robi'atun Adayiah Awang	27-Mar-2009	07:22:00	17:02:00	09:40:00	
Robi'atun Adayiah Awang	30-Mar-2009	07:58:00	17:01:00	09:03:00	
Robi'atun Adayiah Awang	31-Mar-2009	07:53:00	17:33:00	09:40:00	

Generated by Administrator On 01-04-2009

Figure 13: Employee Attendance Report by monthly

Figure 14 and 15, shows statistic daily and monthly attendance report that administrative staff analyst from the Time Attendance Management System (TAMS).

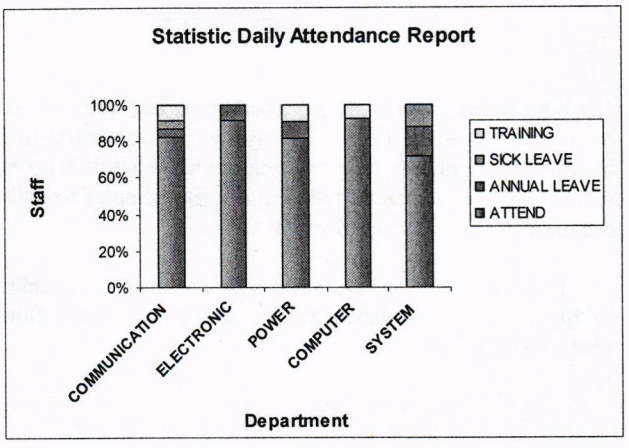

Figure 14: Statistic Daily Attendance Report

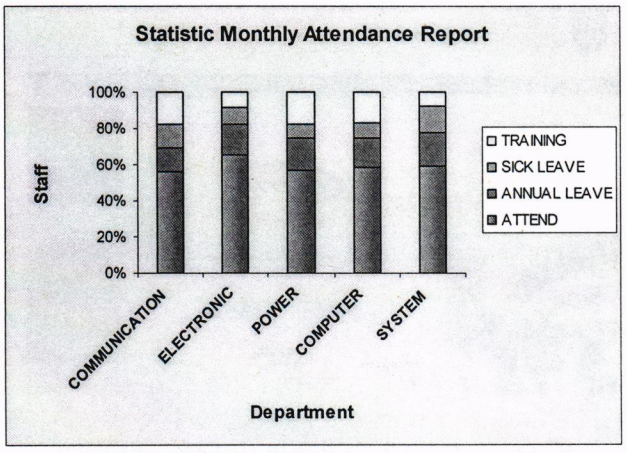

Figure 15: Statistic Monthly Attendance Report

From the results, there are a few advantages of TAMS as compared to the manual punch card. It is online and real time attendance reports. It is also a software-based time clock and attendance system that allows collecting and organizing employee time data accurately transfer to administrative. It helps the administrative staff save time processing, improves the accuracy of the data, and better manages their employees.

VI. CONCLUSION

The system is designed for easy use for all staff. No training required for this system. This project achieved its objective in terms of the performance, cost, reliability and flexibility. An easy method to find information through the efficient data management system helps the administrator to manage the academic group. This project which is electronic system base would serve as an accelerating process of expanding the e-services provided by UiTM.

V. FUTURE DEVELOPMENT

For future work, it is recommended that several improvements to be taken. The system has potential to be incorporated with any type of input devices such as bar code reader, biometric scanner and finger print scanner to gather the time and attendance information.

The future develop system can be very useful especially to higher level of administrative groups to make future planning of UiTM.

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