Design and Implementation an Automatic Secure Control System for Entrance Ports

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Abstract—the stage of processing at port entry/exit has many shapes of obstacles such as checking a large number of passenger's documents every day. The passengers spent long time at ports until their documents have been checked by the airport's clerks since the port entry/exit procedures have been processed manually. This intern takes a long time for entrance processing and makes burdens on port's clerks. Each single sheet may contain many different names, and these names may have no relationship with each other. Ergo, the proposed technique in this paper offers the responsibility to speed and facilitate the procedure to take decision making to visa entry for any foreigner. This technique will be distributed in several ports in the country. In addition, those ports are connected to each other by using WiMAX private network. Which it is considered, the most secured open network ever. The model's pages at server side were written in PHP web language which is the most popular WEB scripting language and Apache HTTP server used to hold these pages. This proposed model has been tested and successes to track and review the foreigners' documents at real time.

Index Terms— Apache, DB, DPR, MySQL, PHP, VDMs, WiMAX

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1 INTRODUCTION

T His first airport resembling anything that we know to- day was built in 1922 at Königsberg in East Prussia (Zu- kowsky, 1996). Konigsberg's terminal was a considerable advance from the windswept military landing fields and beaches. The new terminals became bridges for the transition between land and flight. Airports captured the imagination representing a symbol of progress and technological achievement in modernity [1].

All terminal operations (ticketing, check-in, passport control, security control) are obviously characterized besides a service time and a queue waiting time too. This last time cannot be too high, but so far we need to restrain it in order to ensure all passengers having regular ticket the observance of boarding time thus avoiding the flight missing. In most the reduced times are for travelers synonymous of high quality, key element in developing a good business image. For both reasons, therefore, is crucial for an airport during the years the infrastructure adaptation due to the increasing demand passengers transportation [2].

In this paper the system designed using PHP web language which is mainly focused on server-side scripting, such as collect form data, generate dynamic page content, or send and receive cookies. But PHP can do much more. PHP (recursive acronym for PHP: Hypertext Pre-processor) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML [3].

The Apache server is a collaborative software development effort aimed at creating a robust, commercial-grade, feature rich, and freely available source code implementation of an HTTP web server. The source code for Apache is freely available, enabling one to make changes to the code to increase its

Functionality or improve its performance [4].

2 THE SYSTEM MODEL

Figure 1 shows, the flow of the program procedures. The user starts establish the connection with Apache web server from a plain web browser like chrome, Fire Fox and so on. After the connection established over the WIMAX network between user and the server, MYSQL server start streaming the information at the user side, then the user starts to handle passenger's information from user side.
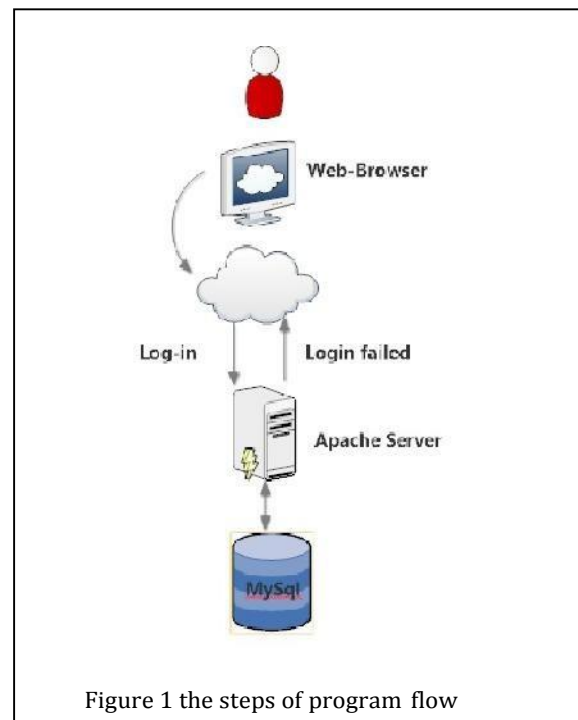

Figure 1 the steps of program flow

2.1 WiMAX Technology

WIMAX refers to interoperable implementations of the IEEE 802.16 family of wireless-networks standards ratified by the WIMAX Forum, standard designed to provide 30 to 40 megabit-per-second data rates. WiMAX gateway devices are available as both indoor and outdoor versions from several manufacturers. A higher-gain directional outdoor unit will generally result in greatly increased range and throughput but with the obvious loss of practical mobility of the unit. WIMAX networks have five fundamental architectural components: Base Station (BS), Subscriber Station SS, Mobile Station (MS), Relay Station RS and Operator Network [5].

The used topology here is point to multi point. The IEEE 802.16 standards specify two basic security services; authentication and confidentiality. Authentication involves the process of verifying the identity claimed by a WIMAX device. Confidentiality is limited to protecting the contents of WIMAX data messages so that only authorized devices can view them. The Privacy Key Management (PKM) protocol is the set of rules responsible for authentication and authorization to facilitate secure key distribution in WIMAX [6].

2.2 PHP & SQL

PHP is by far the most popular WEB scripting language. PHP is dynamically typed, which means that variables take on the type of the objects that they are assigned, and may change type as execution proceeds. While some type changes are likely not harmful, others involving function calls and global variables may be more difficult to understand and the source of many bugs. Hack, a new PHP variant endorsed by Facebook, attempts to address this problem by adding static typing to PHP variables, which limits them to a single consistent type throughout execution, PHP is a scripting language, dynamically typed with no static type checking or variable declarations, and is supported by an ecosystem of hundreds of predefined, ready to use libraries, modules and functions. Development in such a rich ecosystem is at a faster pace; there is no need to compile, no need for complicated build files, and PHP code can be interwoven directly with HTML code making it very easy to develop custom websites and web development frameworks [7].

Nowadays, databases are cardinal components of any web based application by enabling websites to provide varying dynamic content. Since very sensitive or secret information can be stored in a database, you should strongly consider p r o

tecting your databases. To retrieve or to store any information you need to connect to the database, send a legitimate query, fetch the result, and close the connection. Nowadays, the commonly used query language in this interaction is the Structured Query Language [8].

PHP is subject to the security built into most server systems with respect to permissions on a file and directory basis. This allows you to control which files in the file system may be read. Care should be taken with any files which are world readable to ensure that they are safe for reading by all users who have access to that file system. Since PHP was designed to allow user level access to the file system, it's entirely possible to write a PHP script that will allow you to read s y s t e m files such as password, modify your Ethernet c o n n e c t i o n s, send massive printer jobs out. This has some obvious implications, in that you need to ensure that the files that you read from and write to are the appropriate ones [9].

2.3 Apache Server

The Apache Server used in this system to hold web pages and make users access theme. The growth of the World Wide Web is imposing considerable strain on both networks and servers. Investigating methods of organizing multiple server machines into both local and distributed clusters is an area of current research and development. These methods focus on balancing incoming requests among multiple servers. The result is a reduced load on individual server machines and thus improved response times as seen by users. Redirection of requests from an overloaded server to a less loaded server is one method of balancing load.

The mechanisms and policies for such redirection are open areas for research. Front-end devices, such as application-level switches and specialized load-balancing routers, can be used to redirect requests between Apache servers in both local and distributed clusters. There exist no native methods (i.e., within the Apache server software) for redirection between widely distributed servers. Distributed Packet Rewriting (DPR) is one recently developed method of native redirection in a local cluster of Apache servers [10].

The worker processes are responsible for handling the communications with the Web clients, including the work required to generate the responses. A worker process handle sat most one connection at a time, and it continues to handle only that connection until the connection is terminated. Thus, the worker is idle between consecutive requests from its connected client. After recognizing the architecture of Apache, it is necessary to introduce our experimental environment. Our test-bed consists of one host connected with a server, running Apache server and related clients through VMWare at t h e same time; each client machine runs a synthetic workload generator described below that simulates the activity of many clients [11].

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3 PROGRAMME PROCEDURES

Figure 2, shows the flow of program execution

Figure 1 the flow of program execution

Figure 3 Login page
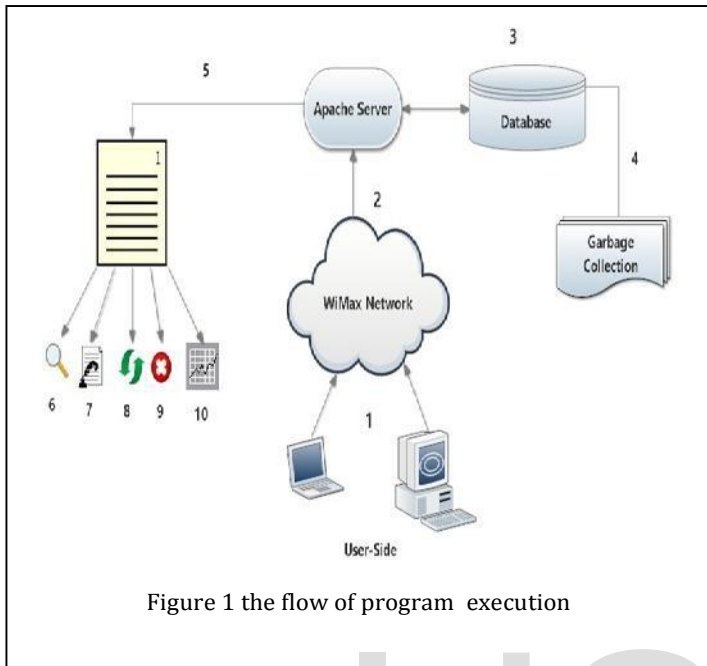
The main points of our model are illustrated in the following section:

- The user start establishing connection with Apache server using the WiMAX network and the connection stablished with the valid user.
- The WiMAX used in our model because it is considered the most secure open network ever.
- Apache server starts to connect with database to retrieve data to the allowed user.

The data delivered to the user in sheets form and each user has some of variety changes permission such as search, add, edit, delete and prints sheets.

4 SIMULATION RESULTS

The program execution starts first user login, user main page, data transfer from DB to user web page, data displays on user web page as a records, user can do any of the following :(search by different types " names – acceptance no. – date" – add new passenger with more entrance details like included second acceptance letter – exit the passenger defaults
-delete) and the database can save the passenger information.

In this section the main pages of our model. Figure 3 illustrates, the login page, which this page check first the user authentication before server accessing, and Figure 4, shows list of the all users who have a permission to work on that model.
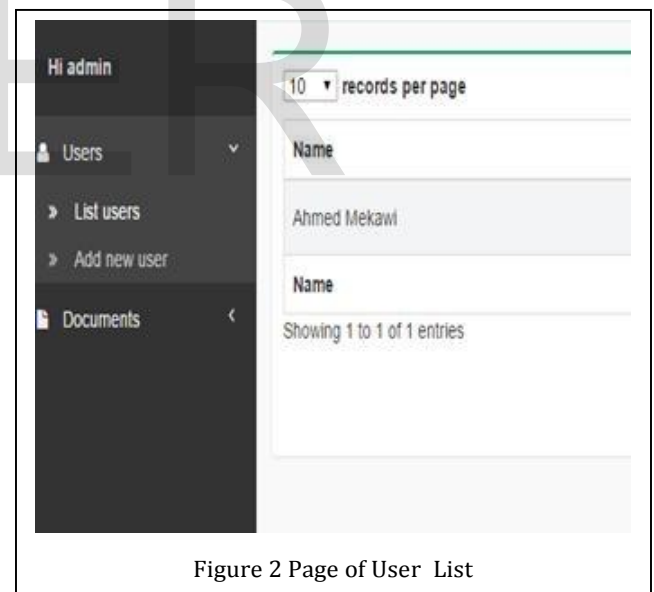

Figure 2 Page of User List

Figure 5 shows, the page which allow the administrator to add more users and this page lets administrator to give some permission to each user. Also, Figure 6 illustrates how the administrator can add some selected permission to each user

Figure 3 Add new User page

Figure 4 User Permission Page

Figure 7 shows, how the documents are displayed on the screen, in this page the data is displayed as form sheet to let user make his work easily without any problems.

Figure 5 Documents Page

Figure 8 and 9 illustrate the page which make the user to add new documents and edit any saved documents one respectily.
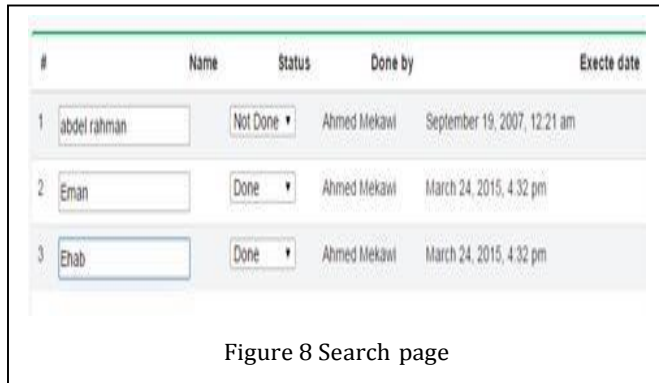

Figure 6 Add new document

Figure 7 Edit page

The following page as shown in Figure 10, illustrates how users can search on a specific documents by three different chooses ; visa date, Passenger name and number of visa.

Figure 8 Search page

5 CONCLUSION & FUTURE WORK

Passengers wait long time in ports until their documents checked by ports clerks and that seems take many time. So, that system is proposed to facilitate the checking procedure of the passengers. In this work we have discussed the following:

- The structure of our model.
- PHP web language which it is used in that model.
- Apache server which holds the pages of our model.
- The main advantages of WiMAX network and why WiMAX network used to connect ports to each other.
- The flow procedures of the model.

Finally, the proposed model has checked at some selected ports in the country and reduce the checking time and the burdens of ports' clerks. Furthermore, some additional services may be added later to make the usage of the model easier such as daily reports, Optical Character Recognition (OCR) technology and so forth.

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BIOGRAPHY

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