

Web Mailing System for College

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ABSTRACT

In this paper, we describe how to design and implement Web Mailing System for limited Users. The System is divided into four discrete modules – Admin, TPO (Training and Placement Office), Staff and Student. Each module has its services to control and monitor with Admin being the HEAD. System has all the tools to including Compose, Read, and Reply, Forward, Delete, Mark Spam [1] and even file transfer via email attachments which makes it on par to other systems. Each bit of data sent is stored securely so in cases user lost or needs it again, he can get it. Unlike other systems we also implement a Notification panel on every user's main pages so it becomes real easy to not if each entity. It also includes automatic message block system that classifies messages into SPAM or NOT SPAM so reduce waste of time.

Keywords: Mailing; file transfer; notification.

1. INTRODUCTION

This system facilitates mailing among a group of users of any number. Now-a-days organizations are growing fast and are increasing in size also. So these organizations are divided into departments. In the fast growing world the information is needed as fast as possible. This can be accomplished by passing the information quickly. Quick passing of mails is not possible in manual systems. This is because the information is passed through persons of one department to another department. This leads to the inconsistency and delay in delivering information. So we need a system which is simple, quick and accurate. This can be achieved by developing a web-based Mailing System.

II. STRUCTURE

For the sake of simplicity system is divided into 4 Modules-Admin, TPO (Training and Placement Office), Staff and Student. All the modules are equipped with necessary tools for all basic Mailing functions.

A. Admin: It has the highest level of authority. It can add user, remove user, block user access, unblock user, spam user, un-spam user use notification tools, etc. It is his responsibility to maintain user info and to update the system with latest entries. Also Admin provides unique User ID and Password for the Users which makes it exclusive for the College/Organization.

B. TPO: This module has full access to notification tools and thus can use it accordingly.

C. Staff: Staff can be teaching or non-teaching. They have full access to notification tools and thus can use it accordingly.

D. Student: It can use the system for normal mail and file transfer.

III. MAILING

This is the primary function of our system and all entered clients including Admin has access to it. User can Compose, Read, Reply, forward, delete, spam, un-spam a mail. User if wish to compose a mail needs to enter the composer. If it wishes to reply or forward mail is redirected to composer with required fields auto filled.

Composer is equipped with all the features of a text editor for a mail that suites his/her style. At last it has option to add attachment which indeed is used for file transfer thus making it multipurpose.

IV. IMPLEMENTATION

Languages used are HTML, PHP, and SQL. Supporting software used are My SQL, Apache, File Zilla (all of which are included in XAMPP). PHP is the main language used. My SQL is used from within PHP. A database is maintained containing tables having records of all the necessary information. A Table mainly has records regarding serial number, general register number, Name, email address, etc. All the basic transactions are done between the My SQL Database and PHP. To connect to the database the Host name, Table name, Username, password should be entered accurately using PHP syntax. Login and Logout are session based. That is once a person is logged in; the session will be continued until he/she hits logout. It has the advantage to get into your mailbox directly without wasting time in reentering the email address and password. [2]

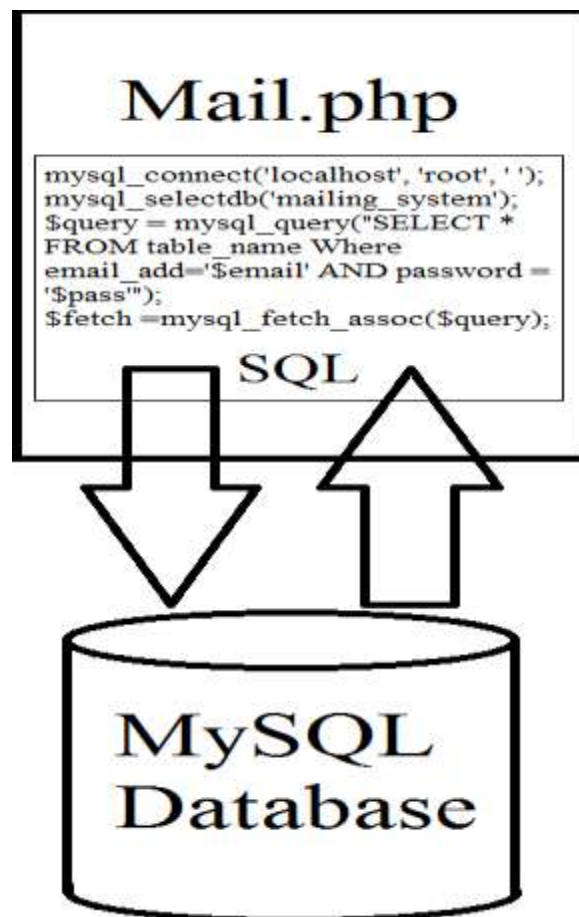


Figure I. Php – Mysql Communication [2]

V. GETTING ACCESS

This system is purely designed for college internal use. This increases the interaction between students and college staff. So this is limited only for valid college related entities. User needs a User ID and correct password to enter. Admin is responsible for providing User with his ID and Password. Once logged in User is free to change password to his/her will. User of any kind when has correct ID and Password can enter system. For security purpose the user can reenter password only 3 times before its account gets block for limited time.

The Procedure will be:

- a) Enter correct link on your Web Brower.
- b) If first timer than enter the required details including your exclusive User ID and Password.



- c) If regular than simply enter your User ID and Password.
- d) If User Id and Password don't match look for displayed error type and try again.

NOTE: System has limit of 3 retries so don't exceed the limit to avoid temporary block.

VI. SENDER REPUTATION

The basic idea of a reputation system is to try and classify mail based upon who is sending the email rather than on what the content of the email is. Both SPF and Domain Key authentication are used to identify who the sender of the mail is. The reputation of sender is rated on certain scale and when it reduces under a limit all future mails are considered spam and automatically thrown into clients spam box. [1]

Service works as follows:

- a) Use the connecting IP address to represent the sender. The IP address is a crude form of authentication.
- b) If the sender is in the white list, put all messages from that sender to the inbox.
- c) If the sender is on a block list, then reject all messages from that sender and put them in a spam folder.
- d) Otherwise, send the message to a statistical spam filter that makes a final judgement.

Also Users are part of the system. They have option of reporting a mail spam which decreases sender's reputation i.e. spamming mail or do the opposite mail thus increasing sender's reputation. [1]

VII. NOTIFICATION

WHY DO WE NEED IT? – Suppose an event is to be organized in the college. If in other systems Even Organizer wants to notify students of it the need to mail it to every student which is time-consuming even buy using any method. Also the important mail will get lost in the students inbox. By use of this tool organizer with right access just needs to insert its event details and he is done. The event details will be displayed directly on the student's screen catching his/her attention immediately. Like other system this system displays new mails count (if any). It can separately show which module has send a message. Having so many modules often makes it very confusing to identify the importance of a message. And thus saving time. It is very useful in times of hustle. This tool is available only for the Admin, staff and TPO.

VIII. FILE UPLOAD AND SHARING

It is an important feature in this system. Every User is able to Transfer files to other. For Security purpose none of the file is executed when in system. Every file is first check for its extension. For example: .exe, .zip, .jpeg, etc. Here a type of file is predefined. Any file except the predefined are directly discarded and user is asked to upload a valid file. Also the Files should be within a maximum size limit of 5 Mb but can be changes. One File can be sent per email, but this can also be changed. [5]

IX. FILE STORAGE

All Data transferred within the system is solely stored in the Server Machine. It includes all Emails sent, Pictures Uploaded, and Files Transferred. This data is always present on the system. This can also be said as "Cloud Storage". Whenever a person sends an email, an entry is created having all data regarding the sender, receiver, department, file sent, etc. This is permanently stored. So even if a User accidently or intentionally deletes data, it is always present on the server and can be easily recovered. [5]

A. DFD

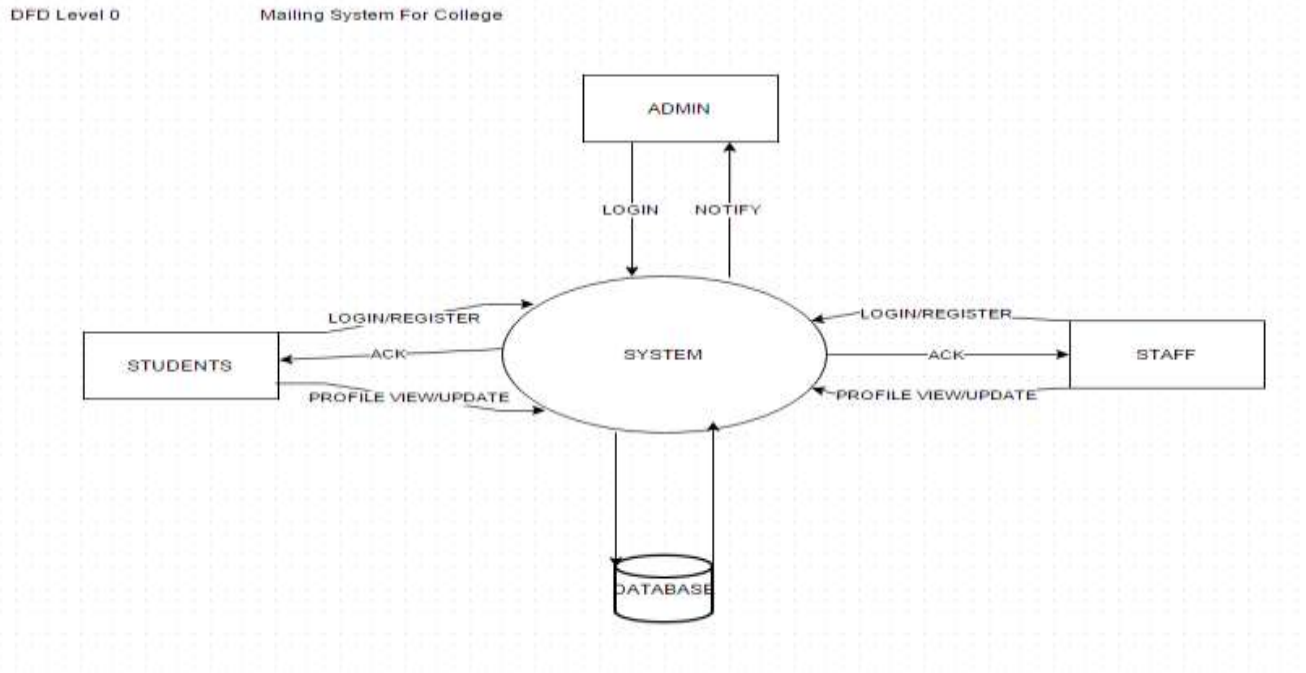


Figure II. DFD

B. Architecture

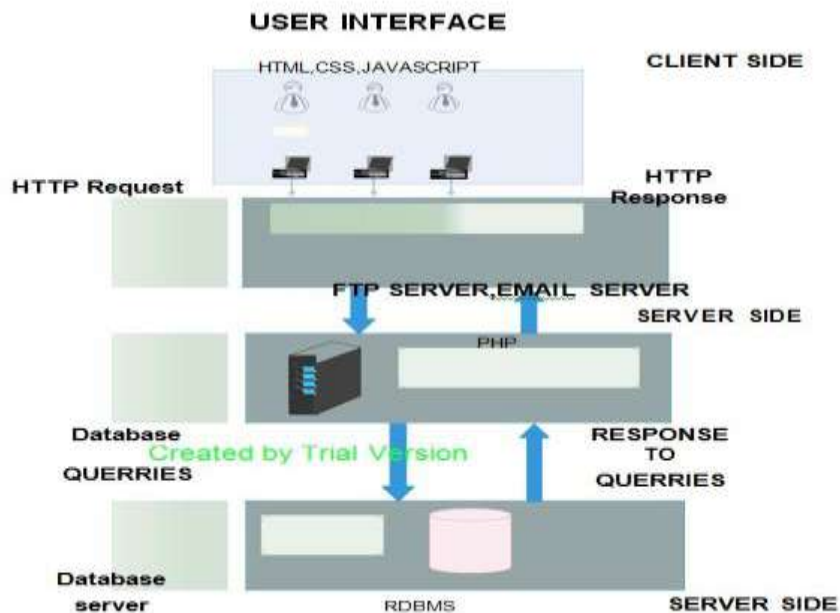


Figure III. Architecture

X. SECURITY

A. CAPTCHA

It is very useful to avoid Brute Force Attack. When someone wants to register to the system it is used to avoid some machine to register. A remote machine may be used to send request and overload the server. To identify such attempts CAPTCHA is used. We display a number of images and ask the user entity to identify the required characteristics. Or a single image containing image of highly distorted text is displayed and user entity is asked to enter the above text. It is easy for human but extremely difficult for machines to enter correct answer. [3]



Figure IV. CAPTCHA [3]

B. DATA INPUT LIMIT

It is the Basic Security we can provide to avoid BUFFER OVERFLOW ATTACK. When someone enter data in a given text box, the data is stored in a buffer to execute it for the predefined purpose. But when they entered data exceeds the Buffer limit and Buffer Overflow Attack takes place. In it the attacker inserts malicious codes outside the buffer limit which get executed by machine Kernel. [6]

C. SQL INJECTION

In our system, the basic transactions are done between the Server and MySQL Database. So it is obvious that SQL language is used. It makes our system perfect target for SQL Injection attack. It is a technique where malicious users can inject SQL commands into a SQL statement, via web page input. Injected SQL commands can alter SQL statement and compromise the security of the web application. [4] Thus to protect the system we use PHP "Prepared" statement which is a feature used to execute the same (or similar) SQL statements repeatedly with High efficiency. It basically work like this:

- Prepare: An SQL statement template is created and sent to the database. Certain values are left unspecified, called parameters (labeled "?"). Example: INSERT INTO PERSON VALUES(?, ?, ?).
- The database parses, compiles, and performs query optimization on the SQL statement template, and stores the result without executing it.
- Execute: Later, the application binds the values to the parameters, and the database executes the statement. The application may execute the statement as many times as it wants with different values

This insures that entered data is secure and does not get executed by the Database server. [4]

CONCLUSION

In this way we are going to develop college mailing system, which is helpful for Reduction in manual work so less manpower required. Students' records can be accessed within few seconds. It has all basic mailing features good security Clarity in account section. Our system primarily focuses on building an efficient and user friendly communication system for the educational institutions. And also the student gets notified for current notices in college by the web mail system for college developed by us.

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