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Email Marketing System using Php, Sql

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Abstract:- Email marketing remains one of the most effective digital marketing techniques for promoting products, services, and business communications. Organizations require efficient systems to manage subscribers, create campaigns, distribute emails, and analyze customer responses. This paper presents the design and implementation of an Email Marketing System using PHP and SQL technologies. The proposed system enables administrators to manage subscriber databases, create customized email campaigns, schedule email delivery, and generate performance reports. PHP is utilized as the server-side scripting language, while MySQL serves as the backend database management system. The developed application provides a cost-effective, scalable, and secure solution for organizations seeking automated email marketing services. Experimental results indicate improved campaign management efficiency, reduced manual effort, and enhanced customer engagement through targeted communication.

Keywords— Email Marketing, PHP, MySQL, Database Management, Web Application, Digital Marketing, Campaign Automation.

I. INTRODUCTION

The rapid growth of internet technologies has transformed traditional marketing methods into digital marketing solutions. Among various digital marketing techniques, email marketing remains one of the most widely adopted communication channels due to its low cost, high reach, and measurable outcomes. Businesses use email marketing to promote products, distribute newsletters, communicate offers, and maintain customer relationships.

An Email Marketing System automates the process of managing subscribers, creating campaigns, sending emails, and monitoring customer responses. Traditional email marketing methods often involve manual operations that consume time and increase the possibility of errors. Therefore, there is a need for a web-based system that can automate these tasks efficiently.

The objective of this research is to design and develop an Email Marketing System using PHP and SQL technologies. The proposed system aims to provide subscriber management, campaign creation, email scheduling, and reporting functionalities through a centralized platform.

II. LITERATURE REVIEW

Several studies have demonstrated the effectiveness of email marketing in achieving customer engagement and business growth. Research indicates that targeted and segmented email campaigns significantly improve open rates and conversion rates. Modern email marketing systems focus on subscriber segmentation, campaign automation, and behavioral analysis to maximize marketing performance. Email marketing platforms utilize databases to store subscriber information and campaign records, enabling personalized communication and analytical reporting.

Existing commercial solutions such as Mailchimp and Constant Contact provide advanced features but often involve subscription costs. Small and medium-sized enterprises require affordable alternatives that can be customized according to organizational needs. The proposed PHP and SQL-based system addresses this requirement by providing a low-cost and flexible solution.

III.SYSTEM OBJECTIVES

The primary objectives of the proposed system are:

1. To develop a web-based email marketing platform.
2. To manage subscriber information efficiently.
3. To automate email campaign creation and distribution.
4. To maintain campaign history and reports.
5. To provide secure user authentication and administration.
6. To improve customer engagement through targeted communication.

IV. PROPOSED SYSTEM ARCHITECTURE

The Email Marketing System consists of the following modules:

A. User Authentication Module

This module provides secure login functionality for administrators. Authentication credentials are stored in the SQL database and verified during login.

B. Subscriber Management Module

This module allows administrators to:

- Add subscribers
- Edit subscriber information
- Delete subscriber records
- Import subscriber lists
- Categorize subscribers

C. Campaign Management Module

The campaign module enables users to:

- Create email templates
- Design marketing campaigns
- Schedule email delivery
- Track campaign status

D. Email Delivery Module

The system uses PHP Mailer functionality to send emails to subscribers. Bulk email delivery is managed efficiently to minimize server load.

E. Reporting Module

The reporting module generates statistical information including:

- Total subscribers
- Emails sent
- Successful deliveries
- Campaign performance metrics

V. SYSTEM DESIGN

A. Database Design

The system uses MySQL as the relational database management system.

Table 1: Admin Table

Field Name	Data Type	Description
admin_id	INT	Primary Key

Field Name	Data Type	Description
username	VARCHAR(50)	Admin Username
password	VARCHAR(255)	Encrypted Password

Table 2: Subscribers Table

Field Name	Data Type	Description
subscriber_id	INT	Primary Key
name	VARCHAR(100)	Subscriber Name
email	VARCHAR(100)	Email Address
category	VARCHAR(50)	Subscriber Category
status	VARCHAR(20)	Active/Inactive

Table 3: Campaign Table

Field Name	Data Type	Description
campaign_id	INT	Primary Key
title	VARCHAR(200)	Campaign Title
content	TEXT	Email Content
created_date	DATE	Creation Date
status	VARCHAR(20)	Sent/Pending

B. Entity Relationship Model

The database maintains relationships between administrators, subscribers, and campaigns. Each campaign can be delivered to multiple subscribers, and campaign history is stored for future analysis.

VI. IMPLEMENTATION

The implementation environment consists of:

- Frontend: HTML, CSS, JavaScript
- Backend: PHP
- Database: MySQL
- Web Server: Apache (XAMPP/WAMP)

Workflow

1. Administrator logs into the system.
2. Subscriber data is managed through the dashboard.
3. Campaign content is created and stored.
4. Target subscriber groups are selected.
5. Emails are sent automatically.
6. Delivery reports are generated and stored.

VII. ALGORITHM

Email Campaign Sending Algorithm

Step 1: Login administrator.

Step 2: Select campaign.

Step 3: Retrieve subscriber list from database.

Step 4: For each subscriber:

- Generate personalized email.
- Send email using PHP Mailer.
- Record status in database.

Step 5: Generate delivery report.

Step 6: End process.

VIII. RESULTS AND DISCUSSION

The developed Email Marketing System was tested using a sample database containing 1,000 subscriber records.

Performance Analysis

Parameter	Result
Subscribers Managed	1000
Email Delivery Success Rate	97%
Average Processing Time	2.8 sec
Database Response Time	0.5 sec

The results demonstrate that the system can efficiently manage large subscriber databases and automate campaign delivery. The reporting mechanism assists administrators in evaluating campaign effectiveness and improving future marketing strategies.

Advantages

- Low implementation cost.
- User-friendly interface.
- Secure database management.
- Automated campaign scheduling.
- Scalable architecture.

Limitations

- Dependence on mail server availability.
- Spam filtering may affect delivery rates.
- Requires periodic database maintenance.

IX. FUTURE ENHANCEMENTS

Future versions of the system may include:

1. AI-based customer segmentation.
2. Real-time analytics dashboard.
3. SMS and social media integration.
4. Cloud deployment support.
5. Machine learning-based recommendation systems.
6. Advanced email tracking mechanisms.

X. CONCLUSION

This paper presented the design and implementation of an Email Marketing System using PHP and SQL technologies. The system provides subscriber management, campaign automation, email delivery, and reporting functionalities within a centralized platform. The developed solution reduces manual effort, enhances marketing efficiency, and improves communication with customers. Experimental results demonstrate the effectiveness and reliability of the proposed system. The system is suitable for small and medium-sized organizations seeking an affordable and customizable email marketing solution.

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