SECURE AND EFFICIENT
ONLINE EXAM MANAGEMENT SYSTEM
FOR THIAGARAJAR COLLEGE

A Major Project Submitted to Thiagarajar College (Autonomous)

Affiliated to Madurai Kamaraj University

In partial fulfillment of the require for the degree of

BACHELOR OF COMPUTER APPLICATION

Submitted by

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BONAFIDE CERTIFICATE

This is to certify that this Major Project work entitled **"ONLINE EXAMINATION WITH SECURITY FOR THIAGARAJAR COLLEGE"** submitted by **M. SriHarish Kumar (20SUCA24), A. Hepsy Joannah (20SUCA35) and S. Sangeetha (20SUCA42)** studentw of Bachelor of Computer Application degree course in the Department of Computer Application and Information Technology, Thiagarajar College (Autonomous), Madurai, affiliated to Madurai Kamaraj University, Madurai, is a bonafide record of work carried out by them, under my guidance and supervision as a partial fulfillment of the course.

It is further certified that to the best of my knowledge, this Project report or any other part of this project has not been submitted in this university or elsewhere for any other degree or diploma.

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DECLARATION

DECLARATION

This Major Project work entitled **"SECURE AND EFFICIENT EXAM MANAGEMENT SYSTEM FOR THIAGARAJAR COLLEGE"** has been carried out by us in the **Department of Computer Application and Information Technology**, Thiagarajar College (Autonomous) Madurai, affiliated to Madurai Kamaraj University, Madurai, in partial fulfillment of the requirements for the Degree of Bachelor of Computer Application.

We further declare that this project work or any part of this work has not been submitted in this university or elsewhere for any other degree or diploma.

Date: Signature

Place: Thiagarajar College, Madurai   **M. SRIHARISH KUMAR (20SUCA24),**

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CONTENTS

TABLE OF CONTENT

INTRODUCTION

ABSTRACT

OBJECTIVE:

This "*Secure and Efficient Online Exam Management System*" is a software solution that allows any industry or institute to arrange, conduct, and manage examinations via an online environment which covers planning, execution, maintenance and monitoring progress. It can be done through the Internet. The main goal of this online examination system is to effectively evaluate the students through an automated system which reduces the time and obtains accurate results. Whenever an unauthorized person attempts to login, the system will send an OTP as an alert notification to the registered admin's email id. Once the OTP is verified, the login is successful. Students cannot login into multiple devices. Replication of data by copy paste is not possible.

MODULE DESCRIPTION:

✔ **Security Module**

(Captcha verification, Secure browser, OTP verification)

✔ **Admin Module**

(Login, student modifying details, departments modifying details, instructor modifying details)

✔ **Instructor Module**

(Register, Login, change & forgot password, Add and Update questions, Create and Update Exams, View exam details- View number of registered students and number of attended students, Evaluate questions- multiple choice/True or False)

✔ **Student Module**

(Register, login, Attend exams, View results, Logout)

SECURITY MODULE

    Security module prevents a student who attempts to open any other tab or any browser during exam. The user is allowed to access only the exam page. The keyboard shortcuts like copy & paste is completely restricted.

LOGIN MODULE

    It's a multiple login interface where you can login as admin, faculty or as a student. This module is designed to manage access permissions for different users to prevent misuse and mismanagement of legal and official data by an unauthorized user for not only exam info but various other data as well.

ADMIN MODULE

1. LOGIN: The Registered Admin Can be Allowed to view inner details for which he Permitted

2. STUDENT -MODIFING DETAILS: Admin can be modified to change status of each student.

3. DEPARTMENTS-ENTERING/MODIFYING DETAILS: New departments adding and old department deletions are spend by this user.

4. INSTRUCTOR DETAILS-MODIFYING DETAILS: According to Admin he can add or delete Instructors for specific platforms.

5.

INSTRUCTOR MODULE :

1. REGISTER: To be authenticated first have to be registered.

2. LOGIN: The Registered instructor Can be Allowed to view inner details for which he Permitted

3. CHANGE PASSWORD & FORGOT PASSWORD: Instructor has rights to modify his login details & also be informed through mails if he is unable to login

4. ADD QUESTIONS: Instructor can add questions into the database as per the course and subject.

5. UPDATE QUESTIONS: If any corrections in questions Instructor can modify them

6. CREATE EXAMS: Instructors will be prepared schedule for exams periodically.

7. UPDATE EXAMS: Instructors has rights to modify exam schedule.

8. VIEW EXAM DETAILS- VIEW NO OF REGISTERED STUDENTS, VIEW NO OF ATTENDED STUDENTS: Instructor Can view the attended students who has registered.

9. EVALUATE QUESTION:MULTIPLE CHOICE/TRUE OR FALSE: Evaluation of marks based on his initiations when adding questions

STUDENT MODULE :

1) REGISTER: To be authenticated, first have to be registered

2) LOGIN: The Registered User Can be allowed to view inner details for which he Permitted

3) ATTEND EXAM- MULTIPLE CHOICE/TRUE OR FALSE: The registered student allowed to start the exam

4) VIEW RESULTS: After Completion of exam he can view at his result.

5) LOGOUT: After the process of examination he turned to Logout page.

1.2 ACKNOWLEDGEMENT

SYSTEM ANALYSIS

2.1. EXISTING SYSTEM

➤ Time management becomes an issue for students who live far from campus during offline examinations.

➤ Appropriate and distinct resources, exam centers, furniture, and other accessories are required to conduct offline examinations.

➤ There is also a possibility for the paper to get leaked while passing it to different examination centers; this risk is mitigated by the use of an online examination system.

2.2. PROPOSED SYSTEM

➤ An online exam provides flexibility and security to the examination process. Once all the questions are uploaded in the system, the system can shuffle and give questions in different orders to different students. This minimizes the chance of cheating. However, this is not possible for a paper-based exam.

➤ Another benefit of online assessment is greater security, as all online exam papers, candidate details, marks, and results are digitally stored. In addition, only the people who should be able to access online exam information can be granted the appropriate system access. It is much harder to control access, storage, and results in management with paper-based exams.

➤ When an exam is conducted remotely, students can appear for the exam, without the need to spend on travel and accommodation. This also solves the problem of scheduling exams across various exam centers, hiring invigilators, providing security to these centers, etc.

➤ In an online exam, the results are calculated instantly and accurately.

SYSTEM CONFIGURATION

3.1. HARDWARE SPECIFICATION

Processor	:	INTEL CORE I3
Core	:	Quad Core Processor
Cache Memory	:	258 KB
Processor Speed	:	2.00 GHz
RAM	:	4.00 GB (DDR4)
Hard Drive	:	1 TB

3.2 SOFTWATE SPECIFICATIONS

Operating System	:	Windows 10 Pro
Technology Used	:	Hyper Text Preprocessor PHP
Database	:	MYSQL 8.1.6

ABOUT THE LANGUAGE

PHP: HYPERTEXT PREPROCESSOR

➢ PHP is an open-source, interpreted, and object-oriented scripting language that can be executed at the server-side. PHP is well suited for web development. Therefore, it is used to develop web applications (an application that executes on the server and generates the dynamic page.).

➢ PHP was created by **Rasmus Lerdorf in 1994** but appeared in the market in 1995. **PHP 7.4.0** is the latest version of PHP, which was released on **28 November**.

➢ PHP stands for Hypertext Preprocessor.

➢ PHP is an interpreted language, i.e., there is no need for compilation.

➢ PHP is faster than other scripting languages, for example, ASP and JSP.

➢ PHP is a server-side scripting language, which is used to manage the dynamic content of the website.

➢ PHP can be embedded into HTML.

➢ PHP is an object-oriented language.

➢ PHP is an open-source scripting language.

➢ PHP is simple and easy to learn language.

➢ PHP runs on various platforms (Windows, Linux, Unix, Mac OS X, etc.)

➢ PHP is compatible with almost all servers used today (Apache, IIS, etc.)

➢ PHP supports a wide range of databases

➢ PHP is free. Download it from the official PHP resource: www.php.net

➢ PHP is easy to learn and runs efficiently on the server side

ADVANTAGES OF PHP

➢ PHP can generate dynamic page content.

➢ PHP can create, open, read, write, delete, and close files on the server.

➢ PHP can collect form data.

➢ PHP can send and receive cookies.

➢ PHP can add, delete, modify data in your database.

➢ PHP can be used to control user-access.

➢ PHP can encrypt data.

MySQL

➢ MySQL is currently the most popular database management system software used for managing the relational database. It is open-source database software, which is supported by Oracle Company. It is fast, scalable, and easy to use database management system in comparison with Microsoft SQL Server and Oracle Database. It is commonly used in conjunction with PHP scripts for creating powerful and dynamic server-side or web-based enterprise applications.

➢ It is developed, marketed, and supported by MySQL AB, a Swedish company, and written in C programming language and C++ programming language. The official pronunciation of MySQL is not the My Sequel; it is My Ess Que Ell. However, you can pronounce it in your way. Many small and big companies use MySQL. MySQL supports many Operating Systems like Windows, Linux, MacOS, etc. with C, C++, and Java languages.

➢ MySQL is a Relational Database Management System (RDBMS) software that provides many things, which are as follows:

➢ It allows us to implement database operations on tables, rows, columns, and indexes.

➢ It defines the database relationship in the form of tables (collection of rows and columns), also known as relations.

➢ It provides the Referential Integrity between rows or columns of various tables.

➢ It allows us to updates the table indexes automatically.

➢ It uses many SQL queries and combines useful information from multiple tables for the end-users.

➢ MySQL creates a database that allows you to build many tables to store and manipulate data and defining the relationship between each table.

➢ Clients make requests through the GUI screen or command prompt by using specific SQL expressions on MySQL.

➢ Finally, the server application will respond with the requested expressions and produce the desired result on the client-side.

ADVANTAGES OF MySQL

- MySQL handle a large set of functionality of the most expensive and powerful database packages.
- MySQL is easy to use.
- MySQL consists of a solid data security layer that protects sensitive data from intruders.
- MySQL supports a large number of embedded applications, which makes MySQL very flexible.
- Its efficiency is high because it has a very low memory leakage problem.
- MySQL is an open-source database, so you don't have to pay a single penny to use it.
- MySQL is a very powerful program that can handle a large set of functionality of the most expensive and powerful database packages.
- MySQL is customizable because it is an open-source database, and the open-source GPL license facilitates programmers to modify the SQL software according to their own specific environment.
- MySQL is quicker than other databases, so it can work well even with the large data set.
- MySQL supports many operating systems with many languages like PHP, PERL, C, C++, JAVA, etc.
- MySQL uses a standard form of the well-known SQL data language.
- MySQL is very friendly with PHP, the most popular language for web development.
- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).

SYSTEM DESIGN

5.1 DATA FLOW DIAGARAM

The Data flow diagram is a graphical tool. It is used to describe and analyses the movement of the data through a system manual or automated. They focus on the data flowing into system between processed and in out of data stores. This is a central tool and the basis from which other components are developed. The system models are termed as Data Flow Diagram. The Data flow Diagram is also known as Data Flow graph or a bubble chart.
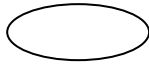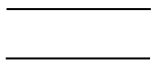
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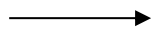
- Indicates the Flow of Data.
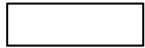
- Indicate the form.

- Indicate the Process being carried out by the form.

- Indicate the database to store and retrieve data.

5.2 DATABASE DESCRIPTION

Database Name: **ADMIN**

Table1 name: **password**

FIELD NAME	DATATYPE	CONSTRAINT
ROLE	VARCHAR(200)	NOT NULL
PASSWORD	VARCHAR(200)	NOT NULL

Table2 name: **postcir**

FIELD NAME	DATATYPE	CONSTRAINT
CNUM	INT(4)	NOT NULL
CTHEME	VARCHAR(200)	NOT NULL
CDAT	DATE	DEFAULT CURRENT_TIMESTAMP()
FILE	VARCHAR(80)	NOT NULL
HEAD	VARCHAR(4)	NOT NULL
FACU	VARCHAR(4)	NOT NULL
STUD	VARCHAR(5)	NOT NULL
PRNT	VARCHAR(5)	NOT NULL
NONT	VARCHAR(5)	NOT NULL
ACYR	VARCHAR(10)	NOT NULL
SEME	VARCHAR(5)	NOT NULL

Table3 name: **flashdb**

FIELD NAME	DATATYPE	CONSTRAINT
FNO	INT(10)	NOT NULL
FNEWS	VARCHAR(200)	NOT NULL
DATE	DATE	NOT NULL
FILE	VARCHAR(100)	NOT NULL
AYEAR	VARCHAR(20)	NOT NULL
SEMESTER	VARCHAR(10)	NOT NULL