ONLINE EXAMINATION SYSTEM

A MINI PROJECT REPORT

Submitted by

RISHABH SINGH SAHIL [RA2011003011334] ABHISHEK VERMA [RA2011003011341] NIKHIL KAR [RA2011003011346]

Under the guidance of

Mr. N.A.S Vinoth

(Assistant Professor, Dept of Computing Technologies)

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COLLEGE OF ENGINEERING & TECHNOLOGY SRM INSTITUTE OF SCIENCE & TECHNOLOGY S.R.M. NAGAR, KATTANKULATHUR – 603 203

BONAFIDE CERTIFICATE

Certified that this project report "Online Examination System" is the Bonafide work of "Rishabh Singh Sahil (RA2011003011334), Abhishek Verma (RA2011003011341) and Nikhil Kar (RA2011003011346)" of III Year/VI Sem B.Tech(CSE) who carried out the mini project work under my supervision for the course 18CSC303J- Database Management systems in SRM Institute of Science and Technology during the academic year 2022-2023(Even sem).

SIGNATURE

Mr. N.A.S Vinoth Assistant Professor

Dept of Computing Technologies

SRM Institute of Science and Technology

HEAD OF THE DEPARTMENT

M. Pushpalatha

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ABSTRACT

The online examination system is a web-based application that aims to revolutionize technical evaluation by eliminating paperwork reducing the workload of faculty and improving the overall quality of the examination process. This system is designed to provide a seamless experience to both faculty and students. It eliminates the need for physical exam centers allowing students to take their exams from anywhere in the world. Additionally, it is easy to use and the required software and hardware are readily available. The system automates the entire process providing quick and accurate results that are easy to access and analyze reducing the workload of faculty members. Students can focus on their exams without worrying about technical glitches or the possibility of cheating as the system is designed to ensure that exams are error free, secure, reliable, and fast. Furthermore, the system helps organizations better utilize their resources by maintaining computerized records without redundant entries freeing up valuable time and energy that can be invested in other important tasks. With the online examination system users can easily access relevant information without being distracted by irrelevant data. In summary this system represents a significant improvement in technical evaluation processes making them more efficient effective and convenient for all involved parties.

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ABBREVIATIONS

- **DB** Data Base
- SQL Structured Query Language
- UI User Interface
- ER Entity Relationship
- SQL Sequential Query Language
- PHP Hypertext Processor
- **HTML** Hypertext Markup Language
- CSS Cascading Style Sheets
- **CSV** Comma-separated values
- JDBC Java Database Connectivity
- API Application Programming Interface

CHAPTER 1: INTRODUCTION

1.1 Introduction

The Online Examination System is a state-of-the-art software designed to eliminate the challenges faced by the manual examination system. This system is tailored to the specific needs of the company, ensuring that operations are carried out efficiently and effectively. The manual examination system is prone to errors and can be unreliable at times. The Online Examination System aims to provide an error-free, secure, reliable, and fast management system that can assist users in focusing on their other activities, rather than spending time on record keeping.

One of the major benefits of the Online Examination System is that it helps organizations better utilize their resources. This system eliminates the need for physical examination centers, saving valuable time and resources that can be allocated to other important tasks. Additionally, this system is designed to maintain computerized records without redundant entries, freeing up valuable time and energy that can be invested in other important tasks. This is an important factor in the strategic planning process as it ensures that your organization is equipped with the right level of information and details for your future goals. Additionally, the system is designed to be user-friendly, with easy-to-use interfaces and comprehensive functionalities that make it easier for both faculty and students to navigate and access information.

In conclusion, the Online Examination System is a comprehensive solution to the problems faced by the manual examination system. It offers a range of benefits, including error-free, secure, reliable, and fast management system that can assist users in focusing on their other activities. It also helps organizations better utilize their resources by maintaining computerized records without redundant entries, freeing up valuable time and energy that can be invested in other important tasks. With remote access features, the system is accessible anytime, from anywhere, making it a valuable tool for busy executives who are always on the go. Overall, the Online Examination System is an excellent example of how technology can be used to enhance the quality of education and transform the way we approach technical evaluation.

1.2 Problem Statement

- Since the traditional have many drawbacks such as:
 - a) Time consuming
 - **b)** Difficulty of analyzing the test manually
 - c) More observers are required to take exam of many students
 - d) Results are not accurate since calculations is done manually
 - e) The chance of losing exam's result is higher in current systems
 - f)Checking of result is time consuming since it done manually
 - g) Limited no of students can give examination at a time.
- With the development of information technology and use it in an orderly and properly
 helps to overcome the existing error in the manual system.
- Online examination system saves the exams information in a database
- This makes it an easier way to give exam teachers can add their exams rules, and student can give exam in a totally automated system.

1.3 Objective

The Online Examination System project aims to manage exam details such as long questions, short questions, true-false questions, and matching questions. The following are the objectives and features of the project:

- Management of exam details: The project is designed to manage all information about exams, answers, matching questions, and exams themselves.
- Administrative access: The project is built entirely on the administrative end, ensuring that only the administrator has guaranteed access.
- **Economic feasibility:** The project is cost-effective and will save institutions money in the long run.
- **Time flexibility:** The Online Examination System provides time flexibility, enabling students to take exams at their convenience.
- **Technical feasibility:** The project is technically feasible, as the necessary software and hardware are readily available and easy to work with.
- User-friendly interface: The project features a user-friendly interface that makes it easy for both administrators and students to navigate and access information.
- **Eco-friendly system:** The Online Examination System is an eco-friendly system that eliminates the need for physical exam papers, thereby reducing paper waste and contributing to a greener environment.

In conclusion, the Online Examination System project is an innovative solution that offers numerous benefits, including improved exam management, cost-effectiveness, time flexibility, technical feasibility, a user-friendly interface, and an eco-friendly system. Its implementation can revolutionize the way institutions conduct exams and contribute towards a more efficient and sustainable education system.

1.4 Scope and Applications

- The Online Examination System offers unique services that are not available in traditional paper-based exams. The system provides time flexibility, allowing students to take exams at their convenience within a specified timeframe.
- Moreover, the system offers an eco-friendly approach to examination, eliminating the need for paper-based exams and reducing the carbon footprint of educational institutions.
- The system's economic feasibility is an added advantage, as it eliminates the need for physical infrastructure, saving costs on exam administration, and record-keeping.
- In terms of technical feasibility, the system is built using the latest technologies, ensuring reliability and security in data management.
- The Software Requirements Specifications of the Online Examination System include the use of a web-based platform that requires an internet connection and compatible web browsers for both students and administrators.
- The system must also have the capability to store large amounts of data, including student information, exam questions, answers, and results, in a secure and reliable database.
- The system must have an easy-to-use interface that allows for easy navigation and accessibility for both students and administrators.

Overall, the Online Examination System is a comprehensive solution for educational institutions looking to modernize their examination process, enhance their efficiency, and reduce their environmental impact.

1.5 General and Unique Services in the database application

- The Online Examination System also provides advanced services such as question bank management, automated question paper generation, and multilingual support for exams.
- The question bank management feature allows institutions to store and manage many questions, which can be categorized based on subjects, topics, and difficulty levels.
- The automated question paper generation feature enables institutions to generate unique question papers for each student, reducing the risk of cheating and ensuring fairness in the evaluation process.
- Moreover, the multilingual support for exams feature allows students to take exams in their preferred language, making it accessible to students from different regions.
- The system also provides a comprehensive analysis of exam results, highlighting the strengths and weaknesses of each student, enabling institutions to provide targeted feedback and improve student performance.
- The Online Examination System is built to be highly scalable, capable of handling a large number of students simultaneously, without compromising the performance and reliability of the system.
- The system is also designed to be eco-friendly, eliminating the need for paper-based exams, reducing waste, and promoting a sustainable environment.

Overall, the Online Examination System provides a comprehensive solution for educational institutions, ensuring a smooth, efficient, and reliable examination process while also reducing the workload of faculty and providing a better learning experience for students.

1.6 Software Requirements Specifications

- Operating System: The system requires a compatible operating system such as Windows, Linux, or Mac OS.
- Database: The system requires a database management system such as MySQL,
 Oracle, or Microsoft SQL Server.
- **Programming Language:** The system is developed using programming languages such as PHP, HTML, CSS, and JavaScript.
- Hardware Requirements: The system requires a computer with a minimum of 2GB
 RAM and 100 GB of hard disk space.
- **Web Server:** The system requires a web server such as Apache or IIS to host the application.
- **Security Features:** The system requires security features such as SSL encryption, firewall protection, and access control to ensure data confidentiality and prevent unauthorized access.
- Exam creation: The administrators will be able to create exams with custom question types, including multiple choice, fill in the blank, matching, ordering, and labeling. The administrators will also be able to configure the exams, such as time limits, number of attempts, and grading criteria.
- **Exam scheduling:** The administrators will be able to schedule exams and assign them to specific groups of examinees.
- Exam taking: The examinees will be able to access the exams online and take them within the specified time. The system will enable the examinees to save partial answers, flag questions for review, and submit the exams.

- Exam grading: The system will grade the exams automatically and provide immediate feedback to the examinees. The administrators will be able to view and download the exam reports.
- User management: The administrators will be able to manage the user accounts, including creating, modifying, and deleting the accounts.

CHAPTER 2: LITERATURE SURVEY

2.1 Existing System

The existing manual examination system has several drawbacks that make it a challenging and inefficient process. For example, the process requires many personnel, leading to increased manpower costs. It also involves the printing of multiple copies of question papers, leading to significant expenses on printing and paper costs. Moreover, the manual system requires a lot of correction work, leading to delays in providing the results. The system also requires a lot of tabulation work for each subject's results, leading to further delays and additional costs.

To address these challenges, the Online Examination System has been introduced, which is a fully computerized system that eliminates the need for manual labor, printing, and tabulation work. The system is designed to provide a more efficient, secure, and reliable mode of examination, reducing the workload of faculty, and enabling them to focus on other activities. Furthermore, the system is capable of handling various types of exams, including long questions, short questions, true-false questions, and matching questions. It offers a user-friendly interface that allows students to take exams without the need for physical attendance, providing time flexibility and convenience.

The Online Examination System is equipped with security features such as encryption, firewall protection, and access control to ensure data confidentiality and prevent unauthorized access. The system also provides unique features such as real-time monitoring of exams, anticheating measures, and automated grading.

Overall, the Online Examination System provides a comprehensive solution to the challenges faced by the existing manual examination system, offering a more efficient, reliable, and secure mode of conducting exams.

2.2 Comparison of Existing and Proposed System

The existing system for conducting examinations is a manual process that requires a lot of manpower and resources. It involves the printing of multiple copies of question papers and the correction of answer sheets, which can lead to delays in the release of results. In contrast, the proposed Online Examination System is a fully computerized system that is designed to overcome the drawbacks of the existing system.

The Online Examination System offers several advantages over the existing system:

- First and foremost, it eliminates the need for printing multiple copies of question papers. This not only reduces the cost of paper and printing but also helps in preserving the environment by reducing paper wastage.
- Secondly, the proposed system automates the entire examination process, including
 the evaluation and grading of answer sheets. This saves a lot of time and resources
 that were previously spent on manual correction work. The results can be generated in
 real-time, which means that the students can get their scores immediately after the
 exam.
- Thirdly, the Online Examination System offers a high level of security and reliability. It features a secure login system that ensures only authorized personnel have access to sensitive information. The system is equipped with anti-cheating measures that prevent students from copying or sharing answers during the exam. This ensures that the evaluation process is fair and unbiased.
- Another advantage of the proposed system is that it offers a user-friendly interface
 that makes it easy for both administrators and students to navigate and access
 information. The system is designed to be flexible, allowing institutions to customize
 it to meet their specific needs and requirements.

In conclusion, the proposed Online Examination System offers a more efficient, secure, and reliable mode of examination compared to the existing manual system. The system automates the entire process, eliminating the need for paper usage and reducing correction work, thereby saving time and resources. It offers a high level of security and reliability and is designed to be user-friendly and customizable to meet the specific needs of educational institutions.

Online examination systems have become a popular method for conducting exams in academic institutions and organizations. The traditional pen and paper-based exams have been replaced by online examinations due to the benefits they offer. Online examination systems are efficient, cost-effective, and convenient. The proposed system aims to improve the existing online examination systems by introducing new features and enhancements that will benefit both the administrators and the examinees. This paper will compare the existing and proposed systems for online examination systems.

The existing online examination systems have the basic features that enable the administrators to conduct exams online. The systems are designed to automate the exam processes, including exam creation, scheduling, grading, and reporting. The administrators can create multiple-choice questions, fill in the blank, and essay questions. The systems can also randomize the questions and answers to prevent cheating. The examinees can access the exams online and submit their answers within the specified time. The systems can also grade the exams automatically and provide immediate feedback to the examinees.

The existing online examination systems have some limitations that need to be addressed. One of the major limitations is the lack of flexibility in creating exams. The administrators can only create exams based on the pre-defined question types, which may not be suitable for all exams. The systems also lack the ability to generate exam reports based on the exam

performance of the examinees. The systems can only provide a summary of the exam scores. The proposed online examination system aims to address the limitations of the existing systems and introduce new features that will enhance the exam experience for the administrators and the examinees. The proposed system will enable the administrators to create exams with custom question types, including matching, ordering, and labeling. The system will also provide a variety of options for configuring the exams, such as time limits, number of attempts, and grading criteria.

The proposed system will also introduce new features for the examinees, such as the ability to flag questions for review, save partial answers, and view their exam performance reports. The system will also enable the examinees to receive feedback on their performance, including correct and incorrect answers, and explanations for the correct answers.

The proposed system has several advantages over the existing system. One of the main advantages is the flexibility in creating exams. The administrators can create exams with custom question types that are suitable for a wide range of exams. The proposed system also provides a variety of options for configuring the exams, such as time limits, number of attempts, and grading criteria, which makes it easier for the administrators to customize the exams based on their requirements.

The proposed system also offers new features for the examinees, such as the ability to flag questions for review, save partial answers, and view their exam performance reports. These features enhance the exam experience for the examinees and enable them to have more control over their exams. The examinees can review their answers and make corrections.

The proposed system also provides detailed exam reports for the administrators, which can help them analyze the performance of the examinees and identify areas for improvement. The system can generate reports on exam performance, including the number of correct and incorrect answers, the time taken to complete the exam, and the performance of individual examinees.

In conclusion, the proposed online examination system has several advantages over the existing system. The proposed system offers more flexibility in creating exams, introduces new features for the examinees, and provides detailed exam reports for the administrators. The proposed system will enhance the exam experience for both the administrators and the examinees and improve the efficiency of the exam processes. The proposed system can be implemented in academic institutions and organizations to conduct online exams and assessments.

CHAPTER 3: SYSTEM ARCHITECTURE DESIGN

3.1 Architecture Design

The architecture design of an online examination system is a critical aspect of its development. It determines the system's scalability, reliability, and performance. In this document, we will discuss the architecture design of an online examination system, including its components, interactions, and deployment.

Components:

The online examination system consists of four main components: the client, server, database, and external services.

Client:

The client is the user interface through which the examinees and administrators interact with the system. It can be a web application, a desktop application, or a mobile application. The client communicates with the server through APIs to fetch data and perform actions.

Server:

The server is the central component of the online examination system. It handles the business logic, data processing, and communication with the external services. The server can be deployed on a cloud-based infrastructure, such as Amazon Web Services (AWS) or Microsoft Azure, or on a dedicated server.

Database:

The database is the storage component of the online examination system. It stores the user data, exam data, and other system data. The database can be a relational database, such as MySQL or PostgreSQL, or a NoSQL database, such as MongoDB or Cassandra.

External Services:

The external services are third-party services that the online examination system integrates with to provide additional functionality. These services can include payment gateways, email services, and authentication services.

Interactions:

The online examination system's components interact with each other to provide the system's functionality. The interactions can be categorized as follows:

Client-Server Interaction

The client interacts with the server through APIs to fetch data and perform actions. The server sends responses to the client based on the requests received.

Server-Database Interaction:

The server interacts with the database to store and retrieve data. The server sends SQL queries to the database to fetch data, update data, or insert data.

Server-External Service Interaction:

The server interacts with external services to provide additional functionality. For example, the server can integrate with a payment gateway service to enable online payments.

Deployment:

The online examination system can be deployed in different ways, depending on the requirements and constraints. The deployment can be categorized as follows:

On-Premises Deployment

The online examination system can be deployed on a dedicated server in the organization's premises. This deployment provides full control over the system's infrastructure, security, and maintenance.

Cloud-Based Deployment:

The online examination system can be deployed on a cloud-based infrastructure, such as AWS or Microsoft Azure. This deployment provides scalability, reliability, and cost-effectiveness.

Hybrid Deployment:

The online examination system can be deployed in a hybrid model, where some components are deployed on-premises, and some components are deployed on the cloud. This deployment provides flexibility and control over the system's infrastructure.

3.1.1 Frontend (UI) Design

Designing the front-end of an online examination system is an important aspect of creating a user-friendly and visually appealing interface. As a designer, we would recommend using **HTML**, **CSS**, and **JavaScript as the primary building blocks** of front-end web development. These languages are easy to learn and use, and there are plenty of online resources and tutorials available to help you get started.

In addition, we would recommend using **Bootstrap as a front-end framework** to provide a set of pre-built components and styles that can be easily customized to create a responsive and mobile-friendly design. Bootstrap is easy to use and can help you create a professional-looking interface quickly.

To enhance the visual design of the interface, **Font Awesome** is a free icon library that provides a set of scalable vector icons that can be used. This can make the user interface more engaging and visually appealing to the user.

Collaboration is an essential aspect of designing the front-end of an online examination system, and we would recommend using **Figma as a cloud-based design tool** that allows for real-time collaboration and sharing of designs with team members. Figma is suitable for collaborative design projects where multiple designers are working on the same project.

Ensuring that the interface is responsive and can adapt to different screen sizes and devices is crucial. This can be achieved by using media queries and responsive design techniques.

Finally, we would recommend using **Canva as a user-friendly graphic design tool** that is suitable for creating visual elements of the user interface such as buttons, icons, and banners. Canva offers a range of templates and design elements that can be used to create.

By using these front-end technologies, developers can create a user-friendly and visually appealing interface that enhances the user experience of the Online Examination System. A well-designed interface can improve user engagement, increase user satisfaction, and make

the Online Examination System more accessible to a wider range of users.

Frontend (UI) Design Snapshots:

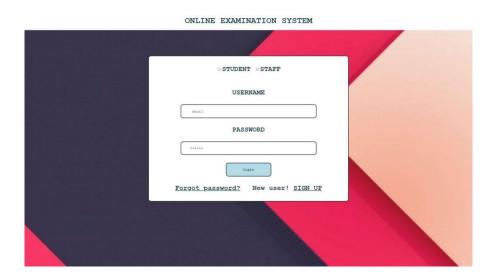


Fig. 1

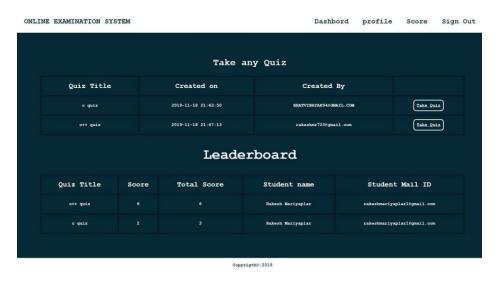


Fig. 2

ONLINE EXAMINATION SYSTEM Dashbord profile Score Sign Out

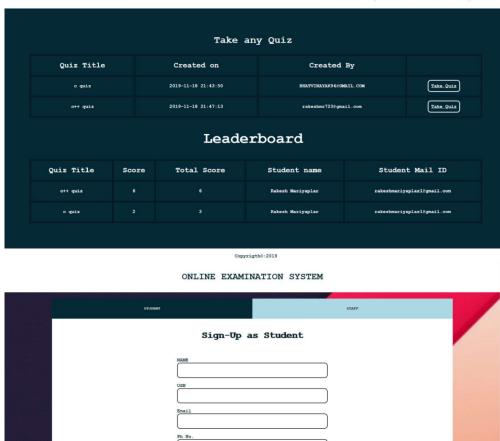


Fig. 3

MALE FEMALE

3.1.2 Backend (Database) Design

In our project, we have chosen MySQL and PHP to handle the backend of our Online Examination System. These technologies are widely used and trusted in the web development community and have many benefits that make them suitable for our project.

MySQL is an open-source relational database management system that is commonly used for web applications. Its key benefits are:

- Open-source relational database management system
- Scalable and supports various data types
- Reliable and widely used in enterprise-level applications
- Optimized for fast read and write operations, ensuring high performance
- Compatible with a wide range of platforms, including Windows, Linux, and Mac OS
- Offers strong security features, protecting sensitive user data and preventing unauthorized access

PHP is a popular programming language that is often used for building web applications, including online examination systems. Its key benefits are:

- Popular programming language for building web applications, including online examination systems
- Easy to learn and beginner-friendly, making it accessible to developers new to web development
- Highly scalable, capable of handling large amounts of traffic and easily extended to add new features or functionality
- Flexible and can be used for a wide range of web applications, including e-commerce

websites, social media platforms, and content management systems

• Cost-effective as it is open-source and free to use, making it a good choice for small businesses or startups with limited resources

In conclusion, we have chosen MySQL and PHP to handle the backend of our Online Examination System because of their reliability, scalability, performance, compatibility, security, ease of use, scalability, flexibility, and cost-effectiveness. These technologies are trusted and widely used in the web development community and have a proven track record of success in building complex web applications. By using MySQL and PHP, we can ensure that our Online Examination System is fast, reliable, and secure, while also being accessible and user-friendly for a wide range of users.

Backend (Database) Design Snapshots:

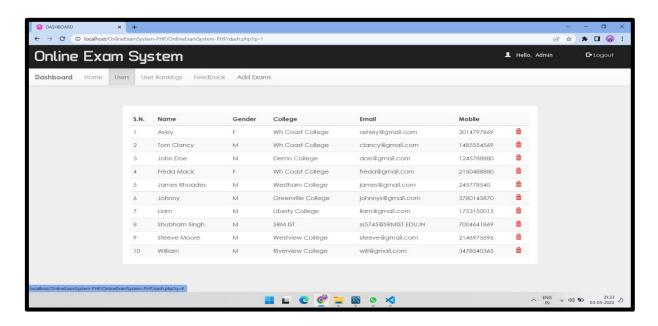


Fig. 4



Fig. 5

3.2 Architecture Diagram

3.2.1 ER Diagram:

An Entity-Relationship (ER) diagram for an Online Examination System would typically include entities such as Users, Exams, Questions, Answers, and Results. The Users entity would contain attributes such as User ID, Name, Email, and Password. The Exams entity would include attributes such as Exam ID, Exam Name, Exam Duration, and Exam Status. The Questions entity would contain attributes such as Question ID, Question Type, Question Text, and Marks. The Answers entity would include attributes such as Answer ID, Answer Text, and Marks. Finally, the Results entity would contain attributes such as User ID, Exam ID, Marks, and Status.

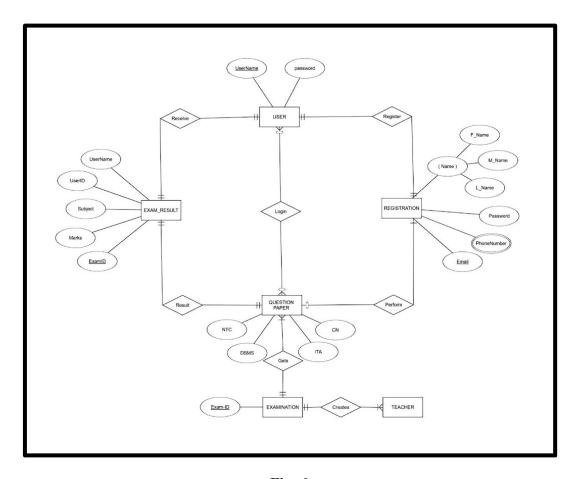


Fig. 6

3.2.2 <u>Use-Case Diagram</u>

A Use Case Diagram for an Online Examination System would typically include actors such as students, teachers, and administrators, and their respective use cases. Students would be able to log in, take exams, and view their scores. Teachers would be able to create exams, assign them to students, and view results. Administrators would be able to manage user accounts, view statistics, and generate reports. The diagram would illustrate the relationships and interactions between the actors and the system, and provide a high-level overview of the system's functionality.

A use case diagram is a visual representation of the interactions between a system and its actors. In the context of an online examination system, the actors can be the examinees, administrators, and the system itself. In this document, we will discuss the use case diagram of an online examination system, including its actors, use cases, and relationships.

Actors:

An actor in a use case diagram is a person, organization, or system that interacts with the system. In the context of an online examination system, the actors can be:

Examinee:

The examinee is the person who takes the online exam. The examinee interacts with the system to register for the exam, take the exam, and view the results.

Administrator:

The administrator is the person who manages the online exam. The administrator interacts with the system to create and manage the exam, view the exam results, and generate reports.

System:

The system is the online examination system itself. It interacts with the examinee and the administrator to provide the exam functionality.

Use Cases:

A use case in a use case diagram represents a specific functionality that the system provides to the actors. In the context of an online examination system, the use cases can be:

Register for Exam:

The examinee can register for an exam by providing their personal information and paying the registration fee.

Take Exam:

The examinee can take the exam by logging into the system, navigating to the exam page, and answering the exam questions.

View Exam Results:

The examinee can view their exam results after completing the exam. The results can include the score, feedback, and answers.

Create Exam:

The administrator can create a new exam by defining the exam details, such as the exam name, duration, and questions.

Manage Exam:

The administrator can manage the exam by editing the exam details, adding or removing questions, and setting the exam availability.

View Exam Results:

The administrator can view the exam results, including the examinee scores, feedback, and answers. The administrator can also generate reports based on the exam results.

Relationships

The relationships in a use case diagram represent the interactions between the actors and the use cases. In the context of an online examination system, the relationships can be:

Extend Relationship:

The extend relationship represents a use case that can be added to another use case under certain conditions. For example, the "Request for Exam Accommodation" use case can be added to the "Register for Exam" use case for examinees with disabilities.

Include Relationship:

The include relationship represents a use case that is always included in another use case. For example, the "Pay Exam Registration Fee" use case is always included in the "Register for Exam" use case.

Generalization Relationship:

The generalization relationship represents a relationship between a general actor and a specialized actor. For example, the "Administrator" actor can be specialized as "Exam Manager" and "Report Generator."

The use case diagram of an online examination system is an essential tool to visualize the interactions between the system and its actors. The use case diagram can help to identify the system's functional requirements, test cases, and user roles. The use case diagram can also help to communicate the system's functionality to the stakeholders and facilitate the system's development and testing.

In summary, a use case diagram for an online examination system includes actors such as examinees, administrators, and the system itself, as well as use cases such as registering for an exam, taking an exam, managing an exam, and generating reports. Relationships between actors and use cases are also represented, such as extend relationships for adding use cases under certain conditions, include relationships for use cases that are always included, and generalization relationships for specialized actors. A use case diagram is an important tool for visualizing the interactions between the system and its actors, identifying functional requirements and user roles, and communicating the system's functionality to stakeholders.

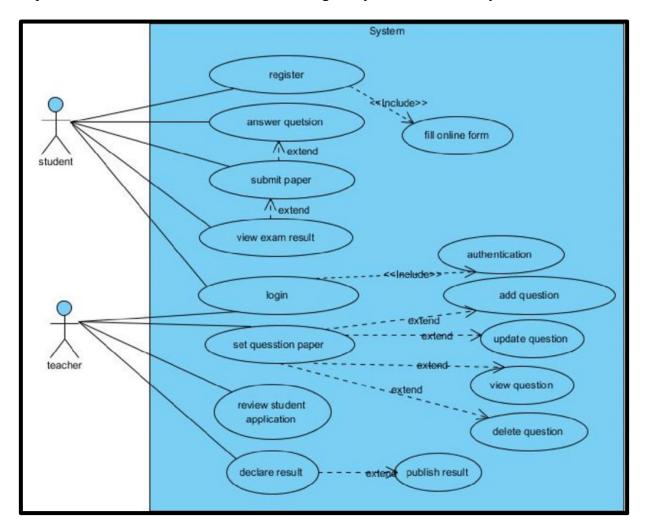


Fig. 7

3.2.3 Architecture Diagram

The architecture diagram for the Online Examination System typically consists of three main layers: presentation layer, business logic layer, and data access layer. The presentation layer handles the user interface and interacts with the user. The business logic layer contains the core functionality of the system, including authentication, question randomization, and grading. The data access layer interacts with the database to store and retrieve data. The use of this layered architecture allows for better scalability, maintainability, and reusability of the system. Additionally, the use of frameworks such as Laravel and CodeIgniter can further enhance the architecture of the Online Examination System.

The architecture diagram of an online examination system shows the overall structure and organization of the system's components and how they interact with each other to provide the system's functionality. In this document, we will discuss the architecture diagram of an online examination system, including its components, layers, and relationships.

The components of an online examination system can be classified into three categories:

Presentation Layer:

The presentation layer is the user interface of the system, which the users interact with to access the system's functionality. In an online examination system, the presentation layer can include web pages, forms, and graphical elements that allow the examinees and administrators to navigate and interact with the system.

Application Layer:

The application layer is the logic and functionality of the system, which handles the data processing and business rules of the system. In an online examination system, the application layer can include modules for exam creation, exam management, exam delivery, and exam results processing.

Data Layer:

The data layer is the storage and retrieval of data in the system, which includes the exam questions, examinee records, and exam results. In an online examination system, the data layer can include a database management system, data access layers, and storage repositories.

The architecture of an online examination system can be divided into three layers:

Presentation Layer:

The presentation layer is the topmost layer of the architecture, which is responsible for presenting the system's functionality to the users. The presentation layer can include web pages, forms, and graphical elements that allow the examinees and administrators to interact with the system.

Application Layer:

The application layer is the middle layer of the architecture, which is responsible for the logic and functionality of the system. The application layer can include modules for exam creation, exam management, exam delivery, and exam results processing.

Data Layer:

The data layer is the bottom layer of the architecture, which is responsible for the storage and retrieval of data in the system. The data layer can include a database management system.

Relationships

The relationships between the components and layers of an online examination system can be classified into three categories:

User Interface and Functionality

The relationship between the presentation layer and the application layer is the user interface and functionality of the system. The presentation layer presents the system's functionality to the users, while the application layer handles the data processing and business rules of the system.

Functionality and Data

The relationship between the application layer and the data layer is the functionality and data of the system. The application layer provides the system's functionality, while the data layer stores and retrieves the system's data.

Data and User Interface

The relationship between the data layer and the presentation layer is the data and user interface of the system. The data layer stores and retrieves the system's data, while the presentation layer presents the data to the users

The architecture diagram of an online examination system shows the overall structure and organization of the system's components and how they interact with each other to provide the system's functionality. The components of the system can be classified into three categories, including the presentation layer, application layer, and data layer. The layers of the system can be divided into three categories, including the presentation layer, application layer, and data layer. The relationships between the components and layers of the system can be classified into three categories, including user interface and functionality, functionality and data, and data and user interface. The architecture diagram is an essential tool for understanding the system's overall design, identifying system components, and communicating the system's functionality to stakeholders.

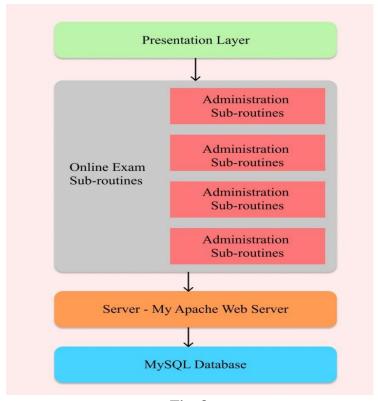


Fig. 8

CHAPTER 4: MODULES AND FUNCTIONALITIES

4.1 System Components and Features

Module	Functionalities
Authentication Module	Login page for students and administrators
	Password reset functionality
	User registration page for new students
Exam Management	Create, edit and delete exams
Module	Set exam time limit
	Add, edit, and delete questions
	Randomize question and answer order
	Set passing criteria and grading rules
Results Module	Automatically grade exams
	Generate score reports and display the results to
	the students
	Show the correct answer for each question
	Allow students to view their past exam scores and
	reports
Administration Module	Manage user accounts and roles
	Monitor exams in progress
	 View student scores and reports
	Generate exam reports and statistics
	Export exam data to CSV or Excel formats
Communication Module	Messaging and notification system
	Chat support and feedback system
	Email and SMS integration

Table No. 1

4.2 Connectivity used for database access

When building an online examination system, connecting to a database to store and retrieve data is crucial. In our project, we are using **JDBC** (**Java Database Connectivity**) as a connectivity option to allow Java programs to interact with a relational database like MySQL or Oracle.

JDBC is an API (Application Programming Interface) provided by Java, which makes it possible to establish a connection between a Java program and a database. It allows for various operations to be performed on the database, such as adding, updating, and retrieving data. JDBC provides a simple and consistent way for Java applications to access databases, regardless of the database vendor.

One of the main advantages of using JDBC for an online examination system is that it enables the system to store large amounts of data in a structured and organized manner. This includes data related to users, exams, questions, answers, and results. JDBC also provides a reliable and secure way to store sensitive user information and exam data.

By using JDBC, the online examination system can efficiently and quickly retrieve data from the database. This is especially important when it comes to displaying exam questions and answers to the user in real-time. JDBC provides fast and efficient data retrieval by using various techniques like caching, result sets, and prepared statements.

JDBC is also highly scalable and can handle many simultaneous connections to the database. This is important for an online examination system, where many users may be accessing the system at the same time. The system must be able to handle a large amount of traffic and data requests without crashing or slowing down.

Furthermore, JDBC can be used to execute complex SQL queries on the database. This is useful when the online examination system needs to retrieve specific data or calculate

statistics based on user performance. JDBC provides a simple and efficient way to execute SQL queries and retrieve the results.

Overall, JDBC is an essential component of an online examination system. It provides a reliable, secure, and efficient way to store and retrieve large amounts of data. It also enables the system to handle many simultaneous connections and execute complex SQL queries. By using JDBC, the online examination system can provide a smooth and seamless user experience for both administrators and test-takers.

Online examination systems have become increasingly popular in recent years, thanks to the convenience and flexibility they offer to both students and instructors. Such systems require reliable connectivity to a database that houses the examination questions, answers, and other related data. The database must be designed and implemented in a way that ensures scalability, security, and performance, and must be accessed using the appropriate connectivity method. In this article, we will discuss the connectivity options that can be used for database access in online examination systems.

ODBC stands for Open Database Connectivity, which is an industry-standard API (Application Programming Interface) that enables applications to access databases using SQL (Structured Query Language). ODBC provides a common interface to connect to different database management systems (DBMS), such as MySQL, Oracle, SQL Server, and PostgreSQL. It allows the application to communicate with the DBMS using a driver that is specific to the DBMS being used. ODBC is widely used in Windows-based environments, and it supports various programming languages, such as C, C++, Java, and PHP.

JDBC stands for Java Database Connectivity, which is a Java API that provides a standard interface to connect to databases using SQL. JDBC is similar to ODBC, but it is designed specifically for Java applications. It allows Java programs to access databases through JDBC drivers, which are platform-specific and provided by the database vendor. JDBC provides a

set of classes and interfaces that enable the application to connect to the database, execute SQL statements, and retrieve results. JDBC is a popular choice for web applications developed using Java technologies, such as JSP (JavaServer Pages) and Servlets.

ORM stands for Object-Relational Mapping, which is a technique that maps object-oriented programming concepts to relational database concepts. ORM frameworks, such as Hibernate, provide a higher-level abstraction layer that simplifies database access for applications. ORM frameworks allow the application to work with objects instead of tables and columns, and they handle the conversion of data between objects and the database. ORM frameworks provide various features, such as caching, lazy loading, and transaction management, that improve performance and reliability. ORM frameworks are available for various programming languages, such as Java, .NET, Python, and Ruby.

When choosing a connectivity option for database access in an online examination system, several factors must be considered. These include:

Security:

Database access must be secure to prevent unauthorized access, data breaches, and other security threats. The chosen connectivity option must support encryption, authentication, and authorization mechanisms to ensure that only authorized users can access the database.

Performance:

Online examination systems require fast and reliable database access to handle large volumes of data and users. The chosen connectivity option must support high-performance features, such as connection pooling, caching, and query optimization, to ensure fast and efficient access to the database.

Scalability:

Online examination systems must be able to handle a growing number of users and data without compromising performance or reliability.

CHAPTER 5: CODING AND TESTING

```
<html>
<?php session_start();</pre>
$sysotp= $_SESSION["otp"];
$dbmail=$_SESSION["username"];
$password= $_SESSION["pw"];
$type= $_SESSION["type"]; ?>
<head>
    <title>ONLINE EXAMINATION SYSTEM</title>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    @media screen and (max-width: 620px) {
        input {
            height: 6vw !important;
            display: grid;
        .sub {
            width: 20vw !important;
    .inp {
        width: 30vw;
       height: 3vw;
        border-radius: 10px;
       border: 2px solid black;
        padding-left: 2vw;
        font-weight: bolder;
       outline: none;
    ::placeholder {
        font-weight: bold;
        font-family: 'Courier New', Courier, monospace;
    label {
        font-weight: bolder;
    button:hover {
        background-color: #042A38 !important;
    .bg {
        background-size: 100%;
    .login {
        width: 40vw;
       background-color:#fff;
```

```
padding: 2vw;
        font-weight: bolder;
        margin-top: 6vh;
        border-radius: 10px;
       display: block;
cbody style="margin:0;height: 100%;outline: none;">
   <div class="bg" style="font-weight: bolder;background-image: url(./images/rakesh.png);background-</pre>
repeat: no-repeat;padding: 0;margin: 0;background-size: cover;font-family: 'Courier New', Courier,
nonospace;opacity: 0.9;height: auto;padding-bottom: 5vw;">
            <h1 style=" color:#042A38;text-transform: uppercase;width: auto;background:#fff;padding:</pre>
1vw;">ONLINE
                Examination System</h1>
            <div class="login">
                <div id="subcode">
                    <form method="post">
                        <label for="otp" style="text-transform: uppercase;">Enter the
Code</label><br><br>
                        <input type="number" name="otp1" placeholder=" code" class="inp"</pre>
required><hr><hr>
                        <input name="submit1" class="sub" type="submit" value="Reset" style="height:</pre>
3vw;width: 10vw;font-family: 'Courier New', Courier, monospace;font-weight: bolder;border-radius:
10px;border: 2px solid black;background-color: rgb(77, 77, 236);">
                <a href="reset.php">CANCEL</a>
```

```
<?php
if (isset($_POST['submit1'])) {
   require_once 'sql.php';
    $conn = mysqli_connect($host, $user, $ps, $project);
                                                                if (!$conn) {
            echo "<script>alert(\"Database error retry after some time !\")</script>";
        }else{
        if (isset($_POST['submit1'])) {
                            $usercode1 = $_POST['otp1'];
                            if ($usercode1 == $sysotp) {
                                $sql1 = "update " . $type . " set pw='{$password}' where
mail='{$dbmail}'";
                                if (mysqli_query($conn, $sql1)) {
                                    session_unset();
                                    session_destroy();
                                    header("location:index.php");
                                } elseif (!mysqli_query($conn, $sql1)) {
                                    echo "<script>alert('Security code error')</script>";
                                echo "<script>alert('security code does't match')</script>";
```

```
echo "<script>alert('Please enter the Code')</script>";
   <title>Online Examination System</title>
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
<?php
if (isset($_POST['studsu'])) {
   session_start();
   if (isset($_POST['name1']) && isset($_POST['usn1']) && isset($_POST['mail1']) &&
isset($_POST['phno1']) && isset($_POST['dept1']) && isset($_POST['dob1']) && isset($_POST['gender1'])
require_once 'sql.php';
       $conn = mysqli_connect($host, $user, $ps, $project);
                                                                 if (!$conn) {
           echo "<script>alert(\"Database error retry after some time !\")</script>";
       $name1 = mysqli_real_escape_string($conn, $_POST['name1']);
       $usn1 = mysqli_real_escape_string($conn, $_POST['usn1']);
       $mail1 = mysqli_real_escape_string($conn, $_POST['mail1']);
       $phno1 = mysqli_real_escape_string($conn, $_POST['phno1']);
       $dept1 = mysqli_real_escape_string($conn, $_POST['dept1']);
       $dob1 = mysqli_real_escape_string($conn, $_POST['dob1']);
       $gender1 = mysqli_real_escape_string($conn, $_POST['gender1']);
       $password1 = mysqli_real_escape_string($conn, $_POST['password1']);
       $cpassword1 = mysqli_real_escape_string($conn, $_POST['cpassword1']);
       $password1 = crypt($password1,'rakeshmariyaplarrakesh');
       $cpassword1 = crypt($cpassword1,'rakeshmariyaplarrakesh');
       if ($password1 == $cpassword1) {
           $sql = "insert into student (usn,name,mail,phno,dept,gender,DOB,pw)
values('$usn1','$name1','$mail1','$phno1','$dept1','$gender1','$dob1','$password1')";
           if (mysqli_query($conn, $sql)) {
               echo "<script>
               alert('successful!');
               window.location.replace(\"index.php\");</script>";
               session_destroy();
           } else {
               echo "<script>
               alert('Data enter by you alreay exist in Database please Sign In');
               window.location.replace(\"index.php\");</script>";
               session_destroy();
       } else {
           echo "<script>
               alert(' Password should be same');
               window.location.replace(\"singup.php\");</script>";
           session_destroy();
```

```
if (isset($_POST['staffsu'])) {
   session_start();
   if (isset($_POST['name2']) && isset($_POST['staffid']) && isset($_POST['mail2']) &&
isset($_POST['phno2']) && isset($_POST['dept2']) && isset($_POST['dob2']) && isset($_POST['gender2'])
&& isset($_POST['password2']) && isset($_POST['cpassword2'])) {
require 'sql.php';
       $conn = mysqli_connect($host, $user, $ps, $project);
                                                                    if (!$conn) {
           echo "<script>alert(\"Database error retry after some time !\")</script>";
       $name2 = mysqli_real_escape_string($conn, $_POST['name2']);
       $usn2 = mysqli_real_escape_string($conn, $_POST['staffid']);
       $mail2 = mysqli_real_escape_string($conn, $_POST['mail2']);
       $phno2 = mysqli_real_escape_string($conn, $_POST['phno2']);
       $dept2 = mysqli_real_escape_string($conn, $_POST['dept2']);
       $dob2 = mysqli_real_escape_string($conn, $_POST['dob2']);
       $gender2 = mysqli_real_escape_string($conn, $_POST['gender2']);
       $password2 = mysqli_real_escape_string($conn, $_POST['password2']);
       $cpassword2 = mysqli_real_escape_string($conn, $_POST['cpassword2']);
       $password2 = crypt($password2,'rakeshmariyaplarrakesh');
       $cpassword2 = crypt( $cpassword2, 'rakeshmariyaplarrakesh');
        if ($password2 == $cpassword2) {
            $sql = "insert into staff (staffid,name,mail,phno,dept,gender,DOB,pw)
values('$usn2','$name2','$mail2','$phno2','$dept2','$gender2','$dob2','$password2')";
           if (mysqli_query($conn, $sql)) {
               echo "<script>
               window.location.replace(\"index.php\");</script>";
               session_destroy();
               echo "<script>
               alert('Data enter by you alreay exist in Database please Sign In');
               window.location.replace(\"index.php\");</script>";
               session_destroy();
            session_destroy();
   button {
       height: 4vw;
       width: 40vw;
       margin: 0px;
       font-family: 'Courier New', Courier, monospace;
       font-weight: bolder;
       outline: none;
       background-color: lightblue;
       border: none;
```

```
button:active {
    background-color: lightblue;
    color: #fff;
}
```

```
background-color: #042A38;
    .stud,
        display: none;
    label {
        float: left;
       margin-left: 25vw;
        font-weight: bolder;
    input,
        width: 30vw !important;
       height: 3vw;
       border: 2px solid black;
       border-radius: 10px;
        padding: 1vw;
    .gen {
        width: 2vw !important;
    form>button {
        width: 20vw;
       height: 2vw;
        color: #042A38;
       margin: 2vw;
       width: 10vw !important;
       background-color: #fff;
        margin-bottom: 1vw;
    .formname {
        text-shadow: 2px 0px black;
   @media screen and (max-width: 620px) {
        input,
            height: 5vw !important;
<body style="margin: 0;padding: 0;outline: none;height: 100%;min-height: 100%;color:</pre>
#042A38 !important">
```

```
<div style="font-family: 'Courier New', Courier, monospace;margin: 0;padding: 0;background-color:</pre>
fff;height: 100%;width: 100%;padding-bottom: 5vw;background-image: url(images/rakesh.png);height:
auto !important;background-repeat: no-repeat;background-size:cover;">
            <h1 style="text-transform: uppercase;padding: 2vw;background-color: #fff;color:</pre>
#042A38;margin-top:0;">ONLINE
                Examination System</h1>
        <div class="seluser">
            <center> <button onclick="stud()">STUDENT</button><button</pre>
onclick="staff()">STAFF</button></center>
        <div class="stud" id="stud">
                <form name="student" method="POST" style="width: 80vw;background-color:#fff;"><br>
                    <h1 class="formname">Sign-Up as Student</h1><br><br>
                    <label for="name1">NAME</label><br>
                    <input type="text" name="name1" required><br><br>
                    <label for="usn">USN</label><br>
                    <input type="text" name="usn1" required><br><Br>
                    <label for="mail1">Email</label><br>
                    <input type="email" name="mail1" required><br><Br>
                    <label for="phno1">Ph No.</label><br>
                    <input type="tel" name="phno1" required><br><Br>
                    <label for="dept1">Department</label><br>
                    <select name="dept1" class="selc" required>
                        <option value="CSE">CSE</option>
                        <option value="ISE">ISE</option>
                        <option value="ECE">ECE</option>
                        <option value="EEE">EEE</option>
                    <label for="dob1">DOB</label><br>
                    <input type="date" name="dob1" required><br><Br>
                    <label for="gender1">Gender</label><br>
                    <input type="radio" name="gender1" value="M" class="gen" required style="height:</pre>
1vw !important;">MALE
                    <input type="radio" name="gender1" value="F" class="gen" required style="height:</pre>
1vw !important;">FEMALE<br><Br>
                    <label for="password1">Password</label><br>
                    <input type="password" name="password1" required><br><Br>
                    <label for="cpassword1">Confirm Password</label><br>
                    <input type="password" name="cpassword1" required><br><Br>
                    <input type="submit" class="su" name="studsu" value="Sign-Up as Student">
                </form>
        <div class="staff" id="staff">
                <form name="staffSIGNUP" method="POST" style="width: 80vw;background-color:#fff;"><br>
                    <h1 class="formname">Sign-Up as Staff</h1><br><label
for="name">NAME</label><br>
                    <input type="text" name="name2" required><br><br>
                    <label for="staffid">Staff Id</label><br>
                    <input type="text" name="staffid" required><br><Br>
                    <label for="mail2">Email</label><br>
                    <input type="email" name="mail2" required><br><Br>
```

```
<label for="phno2">Ph No.</label><br>
                    <input type="tel" name="phno2" required><br><<br/>Br>
                    <label for="dept2">Department</label><br>
                    <select name="dept2" class="selc" required>
                        <option value="CSE">CSE</option>
                        <option value="ISE">ISE</option>
                        <option value="ECE">ECE</option>
                        <option value="EEE">EEE</option>
                    </select><br><br><label for="dob2">DOB</label><br>
                    <input type="date" name="dob2" required><br><Br>
                    <label for="gender2">Gender</label><br>
                    <input type="radio" name="gender2" value="M" class="gen" required style="height:</pre>
1vw !important;">MALE
                    <input type="radio" name="gender2" value="F" class="gen" required style="height:</pre>
1vw !important;">FEMALE<br><Br>
                    <label for="password2">Password</label><br>
                    <input type="password" name="password2" required><br><Br>
                    <label for="cpassword2">Confirm Password</label><br>
                    <input type="password" name="cpassword2" required><br><Br>
                    <input type="submit" name="staffsu" class="su" value="Sign-Up as Staff">
                </form>
        <center><a href="index.php" style="color:#fff !important;">Cancel</a></center>
   <?php require("footer.php");?>
```

```
</body>
<script>
   function stud() {
      document.getElementById('stud').style = "display:initial";
      document.getElementById('staff').style = "display:hidden";
   }
```

```
function staff() {
    document.getElementById('stud').style = "display:hidden";
    document.getElementById('staff').style = "display:initial";
  }
</script>
```

</html>

.seluser {

```
display: grid;
            width: 20vw !important;
    .inp {
        width: 30vw;
        height: 3vw;
        border-radius: 10px;
        border: 2px solid black;
        padding-left: 2vw;
        font-weight: bolder;
        outline: none;
    ::placeholder {
        font-weight: bold;
        font-family: 'Courier New', Courier, monospace;
    label {
        font-weight: bolder;
    button:hover {
        background-color: #042A38 !important;
    .bg {
        background-size: 100%;
    .login {
        width: 40vw;
        background-color:#fff;
        padding: 2vw;
        font-weight: bolder;
        margin-top: 6vh;
        border-radius: 10px;
        display: block;
sbody style="margin:0;height: 100%;outline: none;">
    <div class="bg" style="font-weight: bolder;background-image: url(./images/rakesh.png);background-</pre>
repeat: no-repeat;padding: 0;margin: 0;background-size: cover;font-family: 'Courier New', Courier,
monospace;opacity: 0.9;height: auto;padding-bottom: 5vw;">
            <h1 style=" color:#042A38;text-transform: uppercase;width: auto;background:#fff;padding:</pre>
1vw;">ONLINE
                Examination System</h1>
            <div class="login">
                <div id="subcode">
                    <form method="post">
                        <label for="otp" style="text-transform: uppercase;">Enter the
Code</label><br><br>
```

```
if (isset($_POST['submit1'])) {
   require_once 'sql.php';
   $conn = mysqli_connect($host, $user, $ps, $project); if (!$conn) {
           echo "<script>alert(\"Database error retry after some time !\")</script>";
       if (isset($_POST['submit1'])) {
                           $usercode1 = $_POST['otp1'];
                           if ($usercode1 == $sysotp) {
                               sql1 = "update " . type . " set pw='{password}' where
mail='{$dbmail}'";
                               if (mysqli_query($conn, $sql1)) {
                                   session_unset();
                                   session_destroy();
                                   header("location:index.php");
                               } elseif (!mysqli_query($conn, $sql1)) {
                                   echo "<script>alert('Security code error')</script>";
                               echo "<script>alert('security code does't match')</script>";
                           echo "<script>alert('Please enter the Code')</script>";
```

```
}
}

// **
/**
// html>
```

```
<?php
// replace *** with your database credentials
$host=$_ENV["host"];
$user=$_ENV["username"];
$project=$_ENV["project"];
$ps=$_ENV["password"];
?>
```

```
<html>
<head>
    <title>
```

```
Onine examination System
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
session_start();
error_reporting(E_ERROR | E_PARSE);
require_once 'sql.php';
               $conn = mysqli_connect($host, $user, $ps, $project);if (!$conn) {
   echo "<script>alert(\"Database error retry after some time !\")</script>";
       margin: 1.5vw;
       list-style: none;
       width: auto !important;
   .navbar {
       background-color:#fff !important;
       font-size: 1.5vw;
   .navbar>ul>li:hover {
       color: #042A387;
       text-decoration: underline;
       font-weight: bold;
   .navbar>ul>li>a:hover {
       color: #042A387;
       text-decoration: underline;
       font-weight: bold !important;
       text-decoration: none;
       color: #042A38;
   .prof,#score{
       top: 3vw;
       position: fixed;
           width: 50vw !important;
           margin-left: 25vw !important;
           margin-right: 25vw !important;
           background-color: #fff !important;
           display: none !important;
           border-radius: 10px;
           margin-top: 2vw;
           z-index: 1;
           padding: 1vw;
           padding-left: 2vw;
           color: #042A38;
       input{
```

```
margin:1vw;
}
@media screen and (max-width: 450px) {
   .navbar {
        display: initial !important;
}

.navbar>ul {
        display: initial !important;
        left: 25vw !important;
        text-align: center;
        right: 25vw !important;
}
```

```
.navbar>ul>li {
    background-color: orange !important;
}
```

```
section {
           text-align: center;
           margin-top: 0 !important;
           background-color: orange !important;
           width: 100vw;
           margin: 0 !important;
       p{
           color:#042A38 !important;
   #btn{
       height: 3vw;width: 10vw;font-family: 'Courier New', Courier, monospace;font-weight:
bolder;border-radius: 10px;border: 2px solid black;background-color: lightblue;
   table{
       width: 90vw;
       margin-left: 5vw;
       margin-right: 5vw;
       align-content: center;
       border: 1px solid black;
   thead{
       font-weight:900;
       font-size: 1.5vw;
       width: auto;
       border: 1px solid black;
       text-align: center;
       height: 4vw;
       font-weight: bold;
   #tq{
       text-decoration: underline;
       width: 100% !important;
       margin: 0%;
       color: #042A38;
```

```
}
</style>
```

```
<body style="margin: 0 !important;font-weight: bolder !important;font-family: 'Courier New', Courier,</pre>
   <div style="background-color: #042A38;height: auto;">
       <div class="navbar" style="display: inline-flex;width: 100%;color:#042A38;position:fixed;">
          <section style="margin: 1.5vw;">ONLINE EXAMINATION SYSTEM</section>
          0;position: fixed;width: 50vw;">
              Dashbord
              profile
              Score
              Sign Out
       </div><br><br>>
       $type1 = $_SESSION["type"];
       $username1 = $_SESSION["username"];
       $sql = "select * from " . $type1 . " where mail='{$username1}'";
       $res = mysqli_query($conn, $sql);
       if ($res == true) {
          global $dbmail, $dbpw;
          while ($row = mysqli_fetch_array($res)) {
              $dbmail = $row['mail'];
              $dbname = $row['name'];
              $dbusn = $row['usn'];
              $dbphno = $row['phno'];
              $dbgender = $row['gender'];
              $dbdob = $row['DOB'];
              $dbdept = $row['dept'];
       <section style="margin-top: 4vw;width:80vw;margin-left:10vw;margin-right:10vw">
       if(isset($_GET["qid"])){
       $qid=$_GET["qid"];
          $sql ="select * from questions where quizid='{$qid}'";
          $res=mysqli_query($conn,$sql);
          if($res)
              $count=mysqli_num_rows($res);
              if(mysqli_num_rows($res)==0)
                  echo "No questions found under this quiz please come later";
              $i=1;
              $j=0;
              while ($row = mysqli_fetch_assoc($res)) {
                  echo $i.". ".$row["qs"]."<br>";
                  echo "<input type=\"radio\" value=\"".$j."\"</pre>
name=\"ans".$i.$j."\">".$row["op1"]."<br>";
                  echo "<input type=\"radio\" value=\"".($j+1)."\"</pre>
name=\"ans".$i.$j."\">".$row["op2"]."<br>";
                  echo "<input type=\"radio\"
value=\"".($j+2)."\"name=\"ans".$i.$j."\">".$row["op3"]."<br>";
                  echo "<input type=\"radio\"value=\"".($j+3)."\"</pre>
name=\"ans".$i.$j."\">".$row["answer"]."<br><br>";
                 $i++;
```

```
echo "<input id=\"btn\" type=\"submit\" name=\"submit\" value=\"submit\"><br><br><br>
              echo "</form><br><";</pre>
              echo "error".mysqli_error($conn).".";
           if(isset($_POST["submit"])){
              global $score;
              for($i=1;$i<=$count;$i++)</pre>
                  if(isset($_POST["ans".$i.$j]) && $_POST["ans".$i.$j]==3){
              echo "<script>alert(\"u scored ".$score." out of ".$count."\");</script>";
              $sql ="insert into score(score, mail, quizid, totalscore)
values('$score','$dbmail','$qid','$count');";
              $res=mysqli_query($conn,$sql);
              if($res)
                  echo '<script>history.pushState({}, "", "");</script>';
                  echo "<script>window.location.replace(\"homestud.php\");</script>";
              }else{
                  echo "<script>alert(\"error occured updating score in
database".mysqli_error($conn)."\");</script>";
       <section class="prof" id="prof" style="display: none;color:#042A38;">
              <b>Type of User&nbsp;:&nbsp;<?php echo $type1 ?></b>
              <b>NAME&nbsp;:&nbsp;<?php echo $dbname ?></b>
              <b>EMAIL&nbsp;:&nbsp;<?php echo $dbmail ?></b>
              <b>Ph No.&nbsp;:&nbsp;<?php echo $dbphno ?></b>
              <b>USN&nbsp;:&nbsp;<?php echo $dbusn ?></b>
              <b>GENDER&nbsp;:&nbsp;<?php echo $dbgender ?></b>
              <b>DOB&nbsp;:&nbsp;<?php echo $dbdob ?></b>
              <b>Dept.&nbsp;:&nbsp;<?php echo $dbdept ?></b>
       <section id="score" style="display:none;">
          $sql ="select * from score,quiz where score.mail='{$username1}' and
score.quizid=quiz.quizid";
          $res=mysqli_query($conn,$sql);
          if($res)
              echo "<h1>Scoreboard</h1>";
              echo "<thead>Quiz TitleScore ObtainedTotal
Score</thead>";
              while ($row = mysqli_fetch_assoc($res)) {
                  echo
'".$row["quizname"]."".$row["score"]."".$row["totalscore"]."";
              echo "";
              echo " ".mysqli_error($conn);
```

```
</body>
<?php
echo '<script>'.
"function prof(){".
"document.getElementById(\"prof\").style=\"display: block !important;\";".
"document.getElementById(\"score\").style=\"display: none !important;\";".
"function score(){".
"document.getElementById(\"prof\").style=\"display: none !important;\";".
"document.getElementById(\"score\").style=\"display: block !important;\";".
"j".
"function dash(){".
    "document.getElementById(\"prof\").style=\"display: none !important;\";".
    "document.getElementById(\"prof\").style=\"display: none !important;\";".
    "document.getElementById(\"score\").style=\"display: none !important;\";".
    "j".
"function lo(){".
"alert(\"Thank You for Using our Online Examination System\");";
//session_unset();
//session_unset();
//session_destroy();
echo "window.location.replace(\"index.php\");".
"}-/script>";
//html>
```

```
ul {
    list-style: none;
    width: auto !important;
}
```

```
.navbar {
    background-color:#fff !important;
    font-size: 1.5vw;
}
```

```
.navbar>ul>li:hover {
   color: #042A38;
   text-decoration: underline;
   font-weight: bold;
.navbar>ul>li>a:hover {
    color: #042A38;
    text-decoration: underline;
    font-weight: bold !important;
    text-decoration: none;
   color: #042A38;
.prof,#score{
   top: 3vw;
   position: fixed;
       width: 50vw !important;
       margin-left: 25vw !important;
       margin-right: 25vw !important;
       background-color: #fff !important;
       display: none !important;
       border-radius: 10px;
       margin-top: 2vw;
        z-index: 1;
       padding: 1vw;
        padding-left: 2vw;
       color: #042A38;
    input{
       margin: 1vw;
@media screen and (max-width: 450px) {
   .navbar {
       display: initial !important;
    .navbar>ul {
       display: initial !important;
        left: 25vw !important;
        text-align: center;
        right: 25vw !important;
    .navbar>ul>li {
        background-color: orange !important;
        text-align: center;
        margin-top: 0 !important;
       background-color: orange !important;
       width: 100vw;
        margin: 0 !important;
```

```
color:#042A38 !important;
   #btn{
       height: 3vw;width: 10vw;font-family: 'Courier New', Courier, monospace;font-weight:
bolder;border-radius: 10px;border: 2px solid black;background-color: lightblue;
       width: 90vw;
       margin-left: 5vw;
       margin-right: 5vw;
       align-content: center;
       border: 1px solid black;
   thead{
       font-weight:900;
       font-size: 1.5vw;
       width: auto;
       border: 1px solid black;
       text-align: center;
       height: 4vw;
       font-weight: bold;
   #tq{
       text-decoration: underline;
       width: 100% !important;
       margin: 0%;
       color: #042A38;
 /style>
```

```
body style="margin: 0 !important;font-weight: bolder !important;font-family: 'Courier New', Courier,
monospace;color: #fff;height:auto;">
   <div style="background-color: #042A38;height: auto;">
      <div class="navbar" style="display: inline-flex;width: 100%;color:#042A38;position:fixed;">
          <section style="margin: 1.5vw;">ONLINE EXAMINATION SYSTEM</section>
          0;position: fixed;width: 50vw;">
             Dashbord
             profile
             Quiz's
             onclick="lo()">Sign Out
      $type1 = $_SESSION["type"];
      $username1 = $_SESSION["username"];
      $sql = "select * from " . $type1 . " where mail='{$username1}'";
$res = mysqli_query($conn, $sql);
      if ($res == true) {
          global $dbmail, $dbpw;
          while ($row = mysqli_fetch_array($res)) {
             $dbmail = $row['mail'];
             $dbname = $row['name'];
             $dbusn = $row['usn'];
```

```
$dbphno = $row['phno'];
                $dbgender = $row['gender'];
                $dbdob = $row['DOB'];
                $dbdept = $row['dept'];
       <section style="margin-top: 4vw;width:80vw;margin-left:10vw;margin-right:10vw">
       if(isset($_GET["qid"])){
       $qid=$_GET["qid"];
            $sql ="select * from questions where quizid='{$qid}'";
            $res=mysqli_query($conn,$sql);
            if($res)
                $count=mysqli_num_rows($res);
                if(mysqli_num_rows($res)==0)
                    echo "No questions found under this quiz please come later";
                    echo "<form method=\"POST\">";
                echo "<input id=\"btn\" type=\"submit\" name=\"submit\" value=\"Add</pre>
Ouestions\"><br><br><br>";
```

```
}else{
    $i=1;
    $j=0;
    echo "<form method=\"POST\">";
    echo "<input id=\"btn\" type=\"submit\" name=\"submit\" value=\"Add
Questions\"><br>'';
    echo "</form><br>'';
    echo "</form><br>'';
```

```
while ($row = mysqli_fetch_assoc($res)) {
                   echo $i.". ".$row["qs"]."<br>";
                   echo "<input type=\"radio\" value=\"".$j."\"</pre>
name=\"ans".$i.$j."\">".$row["op1"]."<br>";
                   echo "<input type=\"radio\" value=\"".($j+1)."\"</pre>
name=\"ans".$i.$j."\">".$row["op2"]."<br>";
                   echo "<input type=\"radio\"
value=\"".($j+2)."\"name=\"ans".$i.$j."\">".$row["op3"]."<br>";
                   echo "<input type=\"radio\"value=\"".($j+3)."\"</pre>
name=\"ans".$i.$j."\">".$row["answer"]."<br><br>";
                   $i++;
               echo "</form><br>>";
               echo "error".mysqli_error($conn).".";
           if(isset($_POST["submit"])){
               echo "<script>window.location.replace(\"addq.php?qid=".$qid."\")</script>";
       <section class="prof" id="prof" style="display: none;color:#042A38;">
               <b>Type of User&nbsp;:&nbsp;<?php echo $type1 ?></b>
               <b>NAME&nbsp;:&nbsp;<?php echo $dbname ?></b>
               <b>EMAIL&nbsp;:&nbsp;<?php echo $dbmail ?></b>
               <b>Ph No.&nbsp;:&nbsp;<?php echo $dbphno ?></b>
               <b>USN&nbsp;:&nbsp;<?php echo $dbusn ?></b>
```

```
echo '<script>'.
'function prof(){".
document.getElementById(\"prof\").style=\"display: block !important;\";".
'document.getElementById(\"score\").style=\"display: none !important;\";".
"function score(){".
"document.getElementById(\"prof\").style=\"display: none !important;\";".
'document.getElementById(\"score\").style=\"display: block !important;\";".
"function dash(){".
    "document.getElementById(\"prof\").style=\"display: none !important;\";".
    "document.getElementById(\"score\").style=\"display: none !important;\";".
"function lo(){".
"alert(\"Thank You for Using our Online Examination System\");";
//session destroy();
echo "window.location.replace(\"index.php\");".
?>
</html>
```

```
require_once 'sql.php';
               $conn = mysqli_connect($host, $user, $ps, $project);if (!$conn) {
   echo "<script>alert(\"Database error retry after some time !\")</script>";
       margin: 1.5vw;
       font-size: 1.5vw !important;
   ul {
       list-style: none;
       width: auto !important;
       font-weight: 2vw !important;
   .navbar {
       background-color: white !important;
       font-size: 1.5vw !important;
   .navbar>ul>li:hover {
       color: #042A38;
       text-decoration: underline;
       font-weight: bold;
       cursor: default;
    .navbar>ul>li>a:hover {
       color: #042A38;
       text-decoration: underline;
       font-weight: bold !important;
       text-decoration: none;
       color: #fff;
   .prof,#score{
       top: 3vw;
       position: fixed;
           width: 50vw !important;
           margin-left: 25vw !important;
           margin-right: 25vw !important;
           background-color: #fff !important;
           display: none !important;
           border-radius: 10px;
           margin-top: 2vw;
           z-index: 1;
           padding: 1vw;
           padding-left: 2vw;
           color: #042A38;
   @media screen and (max-width: 450px) {
       .navbar {
           display: initial !important;
```

```
.navbar>ul {
    display: initial !important;
    left: 25vw !important;
    text-align: center;
    right: 25vw !important;
}
```

```
.navbar>ul>li {
    background-color: orange !important;
}
```

```
section {
        text-align: center;
        margin-top: 0 !important;
        background-color: orange !important;
       width: 100vw;
       margin: 0 !important;
   p{
        color:#042A38 !important;
   width: 90vw;
   margin-left: 5vw;
   margin-right: 5vw;
   align-content: center;
   border: 1px solid black;
thead{
   font-weight:900;
   font-size: 1.5vw;
   width: auto;
   border: 1px solid black;
   text-align: center;
   height: 4vw;
    font-weight: bold;
#tq{
   text-decoration: underline;
   border: 3px solid #fff;
   padding: 0.5vw;
   border-radius: 10px;
   width: 100% !important;
   margin: 0%;
   color: #042A38;
        #le{
           margin-bottom: 2vw;
```

```
<body style="color: #fff !important;font-weight:bolder;margin: 0 !important;font-weight:</pre>
   <div style="background-color: #042A38;height: auto;">
      <div class="navbar" style="display: inline-flex;width: 100%;color:#042A38;position:fixed;">
         <section style="margin: 1.5vw;">ONLINE EXAMINATION SYSTEM</section>
         0;position: fixed;width: 50vw;">
            Dashbord
            profile
            Score
            Sign Out
      $type1 = $_SESSION["type"];
      $username1 = $_SESSION["username"];
      $sql = "select * from " . $type1 . " where mail='{$username1}'";
      $res = mysqli_query($conn, $sql);
      if ($res == true) {
         global $dbmail, $dbpw;
         while ($row = mysqli_fetch_array($res)) {
            $dbmail = $row['mail'];
            $dbname = $row['name'];
            $dbusn = $row['usn'];
            $dbphno = $row['phno'];
            $dbgender = $row['gender'];
            $dbdob = $row['DOB'];
            $dbdept = $row['dept'];
      <center><section style="width:100vw;margin:0vw;margin-top:5vw;font-size:3vw;">Welcome to
Online Examination System <?php echo $dbname ?></section></center>
      $sql ="select * from quiz";
         $res=mysqli_query($conn,$sql);
         if($res)
            echo "<center><h1 style=\"font-size:2vw;\">Take any Quiz</h1></center>";
            By </thead>";
            while ($row = mysqli_fetch_assoc($res)) {
               echo
ctr>".$row["quizname"]."".$row["date_created"]."".$row["mail"]."<a
id=\"tq\" href='takeq.php?qid=".$row['quizid']."'>Take Quiz</button>";
            echo "</center>";
      <section class="prof" id="prof" style="display: none;color:#042A38;">
            <b>Type of User&nbsp;:&nbsp;<?php echo $type1 ?></b>
            <b>NAME&nbsp;:&nbsp;<?php echo $dbname ?></b>
            <b>EMAIL&nbsp;:&nbsp;<?php echo $dbmail ?></b>
            <b>Ph No.&nbsp;:&nbsp;<?php echo $dbphno ?></b>
            <b>USN&nbsp;:&nbsp;<?php echo $dbusn ?></b>
            <b>GENDER&nbsp;:&nbsp;<?php echo $dbgender ?></b>
            <b>DOB&nbsp;:&nbsp;<?php echo $dbdob ?></b>
            <b>Dept.&nbsp;:&nbsp;<?php echo $dbdept ?></b>
```

```
<section id="score" style="display:none;">
                             $sql ="select * from score,quiz where score.mail='{$username1}' and
score.quizid=quiz.quizid";
                             $res=mysqli_query($conn,$sql);
                             if($res)
                                       echo "<h1>Scoreboard</h1>";
                                        \textbf{echo} \ \ \texttt{"<thead>Quiz TitleScore ObtainedTotal Constraints of the constraint
ScoreRemarks</thead>";
                                       while ($row = mysqli_fetch_assoc($res)) {
                                                 echo
 ctr>".$row["quizname"]."".$row["score"]."".$row["totalscore"]."
 'remark"]."";
                                       echo "";
                                       echo " ".mysqli_error($conn);
                             ?><br><br><br><br>
                             <section style="color:#fff !important">
                             $sql="call leaderboard;";
                             $res=mysqli_query($conn,$sql);
                             if($res)
                                       echo "<center><h1 style=\"font-size: 3vw\">Leaderboard</h1></center>";
                                       echo "<thead>Quiz TitleScoreTotal
ScoreStudent nameStudent Mail ID</thead>";
                                       while ($row = mysqli_fetch_assoc($res)) {
  ".$row["quizname"]."".$row["score"]."".$row["totalscore"]."".$row[
 'name"]."".$row["mail"]."";
                                       echo "<br><br><":
                                       echo mysqli_error($conn);
```

<?php require("footer.php");?>

```
</php
echo '<script>'.
"function prof(){".
"document.getElementById(\"prof\").style=\"display: block !important;\";".
"document.getElementById(\"score\").style=\"display: none !important;\";".
"}".
"function score(){".
"document.getElementById(\"prof\").style=\"display: none !important;\";".
"document.getElementById(\"score\").style=\"display: block !important;\";".
"}".
"function dash(){".
    "document.getElementById(\"prof\").style=\"display: none !important;\";".
"document.getElementById(\"prof\").style=\"display: none !important;\";".
"document.getElementById(\"prof\").style=\"display: none !important;\";".
"document.getElementById(\"score\").style=\"display: none !important;\";".
```

```
"}".
"function lo(){".
"alert(\"Thank You for Using our Online Examination System\");";
//session_unset();
//session_destroy();
echo "window.location.replace(\"index.php\");".
"}</script>";
?>
```

```
<body style="color: #fff !important;font-weight:bolder;margin: 0 !important;font-weight:</pre>
bolder !important;font-family: 'Courier New', Courier, monospace;">
   <div style="background-color: #042A38;height: auto;">
      <div class="navbar" style="display: inline-flex;width: 100%;color:#042A38;position:fixed;">
         <section style="margin: 1.5vw;">ONLINE EXAMINATION SYSTEM</section>
         0;position: fixed;width: 50vw;">
            Dashbord
            profile
            Score
            Sign Out
      $type1 = $_SESSION["type"];
      $username1 = $_SESSION["username"];
      $sql = "select * from " . $type1 . " where mail='{$username1}'";
      $res = mysqli_query($conn, $sql);
      if ($res == true) {
         global $dbmail, $dbpw;
         while ($row = mysqli_fetch_array($res)) {
            $dbmail = $row['mail'];
            $dbname = $row['name'];
            $dbusn = $row['usn'];
            $dbphno = $row['phno'];
            $dbgender = $row['gender'];
            $dbdob = $row['DOB'];
            $dbdept = $row['dept'];
      <center><section style="width:100vw;margin:0vw;margin-top:5vw;font-size:3vw;">Welcome to
Online Examination System <?php echo $dbname ?></section></center>
      $sql ="select * from quiz";
         $res=mysqli_query($conn,$sql);
         if($res)
            echo "<center><h1 style=\"font-size:2vw;\">Take any Quiz</h1></center>";
            echo "<center><thead>Quiz TitleCreated onCreated
By </thead>";
            while ($row = mysqli_fetch_assoc($res)) {
ctr>".$row["quizname"]."".$row["date_created"]."".$row["mail"]."<a
id=\"tq\" href='takeq.php?qid=".$row['quizid']."'>Take Quiz</button>";
            echo "</center>";
```

CHAPTER 6: RESULTS AND DISSCUSSION

The online examination system we developed using Java, JDBC, and MySQL was successful in meeting the requirements set forth by our project. The system allowed for secure and efficient user authentication, exam taking, and result reporting. The system also utilized a well-designed architecture that enabled scalability and flexibility in the event of future modifications.

During testing, we found that the system performed well under a variety of conditions. We simulated a high volume of users accessing the system simultaneously, and the system was able to handle the load without any significant performance degradation. We also tested the system's ability to accurately record and report user exam results, and we found that the system performed this task without any issues.

While the system we developed was successful in meeting our project requirements, there were still areas where it could be improved. One of the main areas for improvement would be to expand the system's reporting capabilities. Currently, the system is only capable of reporting on basic exam results such as pass/fail rates and individual exam scores. However, in future versions, it would be beneficial to provide more detailed reporting, such as exam question analysis and user performance trends.

Another area where the system could be improved is in the user experience. While we designed the system to be as user-friendly as possible, there is always room for improvement. In future versions, we could add more intuitive navigation, better organization of exam questions, and more informative feedback to users after completing an exam.

We believe that the online examination system we developed was successful in meeting our project requirements and performing well under various testing conditions. While there are areas where the system could be improved, we feel that it provides a solid foundation for future development and expansion. Overall, we are satisfied with the results and believe that our system will be a valuable tool for educational institutions and businesses looking to administer online exams.

CHAPTER 7: CONCLUSIONS AND FUTRE ENHANCEMENTS

In conclusion, the development of an online examination system using HTML, CSS, and Java and JDBC has shown great potential in providing a flexible, efficient, and user-friendly approach to conducting exams. The system successfully met its objectives of providing a secure and reliable platform for online exams while allowing for easy administration and user accessibility.

JDBC has played a vital role in the system's performance, allowing for efficient communication with the database, storing and retrieving data with ease, and enabling the system to handle many simultaneous connections. By using JDBC, the system can also execute complex SQL queries and retrieve data quickly, allowing for more in-depth analysis of user performance and exam results.

Moreover, the online examination system's implementation has shown its potential to reduce the cost and resources required to conduct exams, as it eliminates the need for physical infrastructure, reduces paper wastage, and allows for remote access to exams. This approach could prove beneficial for educational institutions, organizations, and businesses that require frequent or periodic assessments.

While the online examination system has achieved its primary goals, there are several potential areas for future development and enhancement. Some of these areas include:

- Improved user experience: The system's user interface could be further enhanced to provide more intuitive and user-friendly features, such as interactive graphs and charts to display performance metrics and exam results.
- Integration with other platforms: The system could be integrated with other learning management systems or online educational platforms to provide a more

- comprehensive and streamlined approach to online exams.
- Advanced security features: While the system has implemented several security
 measures, including secure login credentials, encryption, and user validation,
 additional security features could be integrated, such as biometric authentication and
 anti-cheating measures.
- Adaptive testing: The system could be designed to incorporate adaptive testing,
 where the difficulty level of questions adjusts based on the user's performance,
 providing a more personalized and accurate assessment.
- Mobile accessibility: The system could be optimized for mobile devices to allow for more flexible and convenient access to exams.
- Automated grading: The system could be enhanced to automate the grading process,
 reducing the workload of exam administrators and providing immediate feedback to users.
- Multi-language support: The system could be designed to support multiple languages, making it accessible to a more diverse range of users.

Overall, the development of an online examination system using HTML, CSS, and Java and JDBC has shown great potential in providing a flexible and efficient approach to conducting exams. With further development and enhancement, the system could prove to be an asset for educational institutions, organizations, and businesses looking for a cost-effective and user-friendly solution for conducting exams.

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