VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM – 590018, KARNATAKA

Mini Project Report On

"ONLINE EXAM MANAGEMENT SYSTEM"

BACHELOR OF ENGINEERING

IN

INFORMATION SCIENCE AND ENGINEERING

Submitted by

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GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

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CERTIFICATE

This is to certify that **LIKITH D T (1GD23IS026),** has successfully submitted Mini project titled **"ONLINE EXAM MANAGEMENT SYSTEM"** in partial fulfilment for the award of Bachelor of Engineering in Information Science and Engineering of the **VISVESWARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the academic year 2024-2025. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for Bachelor of Engineering Degree

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LIKITH D T (1GD23IS026)

ABSTRACT

ONLINE EXAMINATION SYSTEM, the purpose of this management system is to assist any business with ease of access information about their inventory and to restock inventory when required without going through the hassle of manual restocking.

ONLINE EXMINATION SYSTEM gives businesses an environment where they can easily check and update the latest information about their inventory. They can manage and add items, manage and add suppliers, automatically restock on items when the items go below minimum quantity, automatically send emails to suppliers with their order by choosing the supplier who provides the item for the cheapest price.

The ONLINE EXAMINATION SYSTEM is aimed to provide the relevant information about the items and suppliers of a warehouse and eliminate manual inventorying and restocking.

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CHAPTER 1

INTRODUCTION

Database is a collection of data and Management System is a set of programs to store and retrieve those data. Based on this one can define DBMS as a collection of inter-related data and set of programs to store & access those data in an easy and effective manner.

1.1 What is the need of DBMS?

Database systems are basically developed for large amount of data. When dealing with huge amount of data, there are two things that require optimization: Storage of data and retrieval of data.

Storage: According to the principles of database systems, the data is stored in such a way that it acquires lot less space as the redundant data (duplicate data) has been removed before storage. Let's take a layman example to understand this. In a banking system, suppose a customer is having two accounts, one is saving account and another is salary account. Let's say bank stores saving account data at one place (these places are called tables we will learn them later) and salary account data at another place, in that case if the customer information such as customer name, address etc. are stored at both places then this is just a wastage of storage (redundancy/ duplication of data), to organize the data in a better way the information should be stored at one place and both the accounts should be linked to that information somehow. The same thing we achieve in DBMS.

Fast Retrieval of data: Along with storing the data in an optimized and systematic manner, it is also important that we retrieve the data quickly when needed. Database systems ensure that the data is retrieved as quickly as possible.

The choice of a database product is often influenced by factors such as:

- the computing platform (i.e., hardware, operating system)

- the volume of data to be managed

- the number of transactions required per second

- existing applications or interfaces that an organization may have

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- support for heterogeneous and/or distributed computing

- cost

- vendor support

1.2 Design and Modeling:

The first task of a database designer is to produce a conceptual datamodel that reflects the structure of the information to be held in the database. A common approach to this is to develop an entity-relationship model, often with the aid of drawing tools. Another popular approach is the Unified Modeling Language. A successful data model will accurately reflect the possible state of the external world being modeled: for example, if people can have more than one phone number, it will allow this information to be captured.
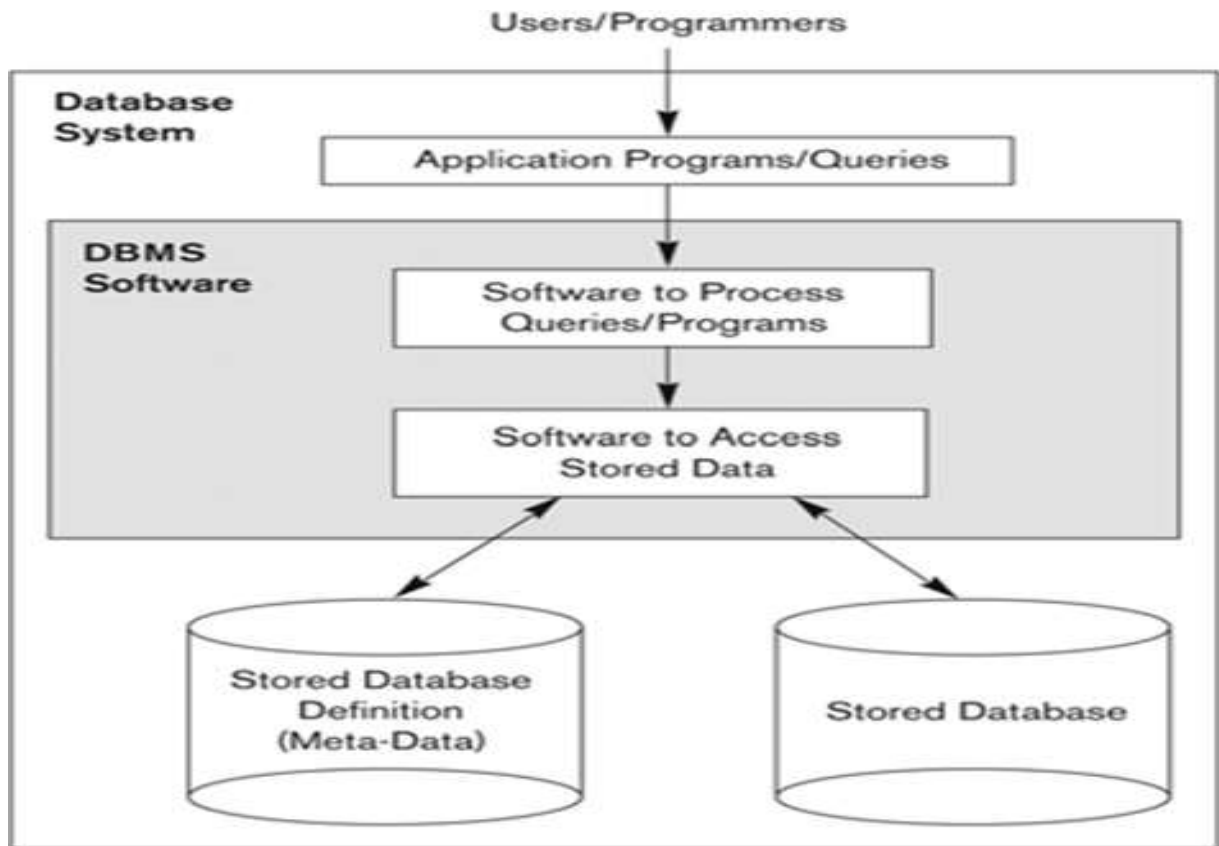

Figure 1.1: Simplified database system environment

1.3 Objective

The main objective of this project is to determine how an interactive inventory management system helps in the smooth functioning of a warehouse compared to traditional inventory management, by digitizing all the records and transacting everything on a computer rather than on paper. This project is a two-tier architecture application.

1.4 Problem Statement

Existing systems for Warehouse Inventory Management are very inefficient and mostly involve a lot of manual work to be done by the manager of the system. With this project, we want to automate as many tasks as possible using the available technology and the internet.

1.5 Scope of the report

The essential framework of this report would be to elaborate the design of E.R-diagram, Schema Diagram and to display how the modules of the program work in order to achieve the automation.

CHAPTER 2
SYSTEM AND SOFTWARE REQUIREMENTS AND SPECIFICATIONS

The program works on Desktop PC and is executed using a PHP 5 interface which interacts with a MySQL database running on localhost.

2.1 FUNCTIONAL REQUIREMENTS

A description of the facility or feature required. Functional requirements deal with what the system should do or provide for users. They include description of the required functions, outlines of associated reports or online queries, and details of data to be held in the system.

2.1.1 Interface Requirements:

- The system shall provide an option to add/delete quizzes with questions.
- The system shall provide an option to see and attend the quizzes.
- The system should give option for login for staffs and students.
- The system shall provide option to see scores.

2.2 NON-FUNCTIONAL REQUIREMENTS:

Non-functional requirements define the overall qualities or attributes of the resulting system.

2.2.1 Usability

Usability is the ease with which a user can learn to operate the online examination system and get results.

2.2.2 Security

Security requirements are included in a system to ensure:

- All questions and users are well secured
- SQL injection is prevented

2.2.3 **Reliability**

Reliability is the ability of a system to perform its required functions under stated conditions for a specific period of time. Constraints on the run-time behavior of the system can be considered under two separate headings:

- Availability: is the system available for service when requested by end-users.
- Failure rate: how often does the system fail to deliver the service as expected by end-users.

2.3 SOFTWARE REQUIREMENTS

Programming language	:	PHP, MYSQL
Operating system	:	ANY OS (Recommended**:** Windows8, Windows Vista, Windows XP)
Application required	:	Standalone desktop application & Xampp
Coding language	:	PHP,HTML,CSS,Javascript

2.4 HARDWARE REQUIREMENTS

CPU	:	Pentium IV 2.4 GHz or above
Memory (Primary)	:	512 MB, 1 GB or above
Hard Disk	:	40 GB, 80GB, 160GB or above
Monitor	:	15 VGA color

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CHAPTER: 3

ER DIAGRAM, SCHEMA DIAGRAM

This chapter of the report describes the structure of the project, followed by Entity Relationship Diagram, Schema Diagram and the table structures.

3.1 ER Diagram with relationships and cardinality ratio

An entity relationship model, also called an entity-relationship (ER) diagram, is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems. An entity is a piece of data-an object or concept about which data is stored.

The cardinality or fundamental principle of one data aspect with respect to another is a critical feature. The relationship of one to the other must be precise and exact between each other in order to explain how each aspect links together. In simple words Cardinality is a way to define the relationship between two entities.

The following are the notations of the ER diagram:
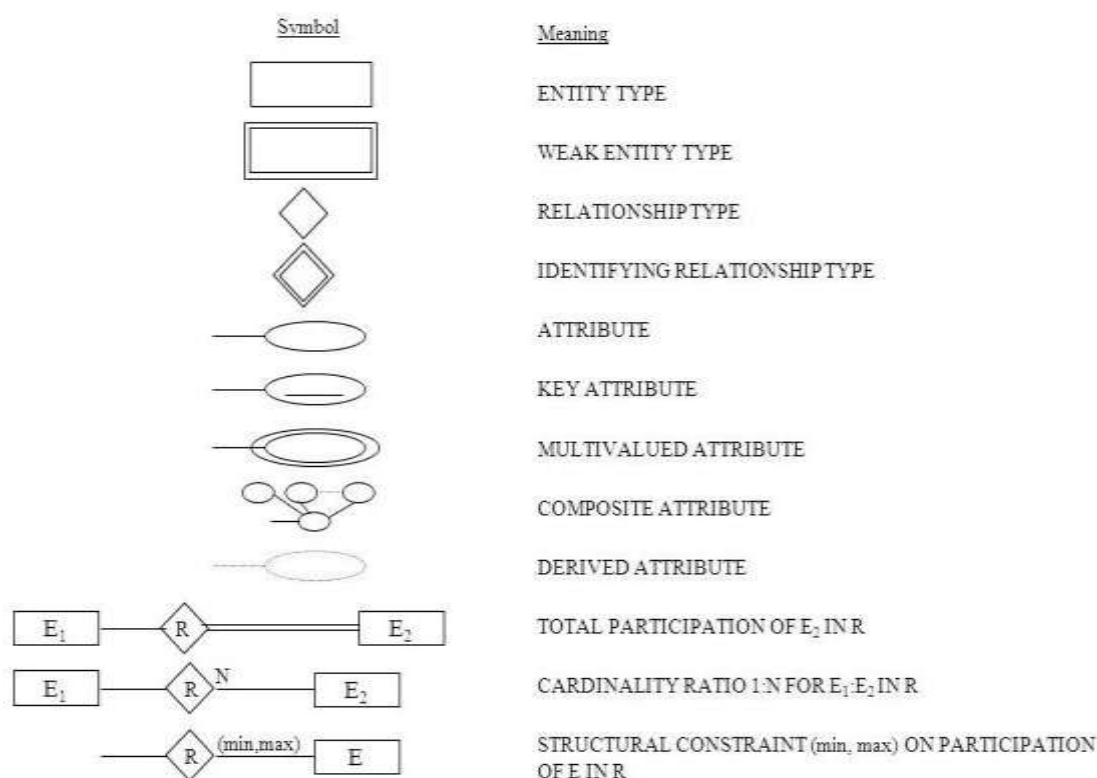
Fig 3.1: Notations for ER Diagrams

The ER diagram below shows the relationship between the many tables that exist in the database for the functioning of Warehouse Inventory Management System.
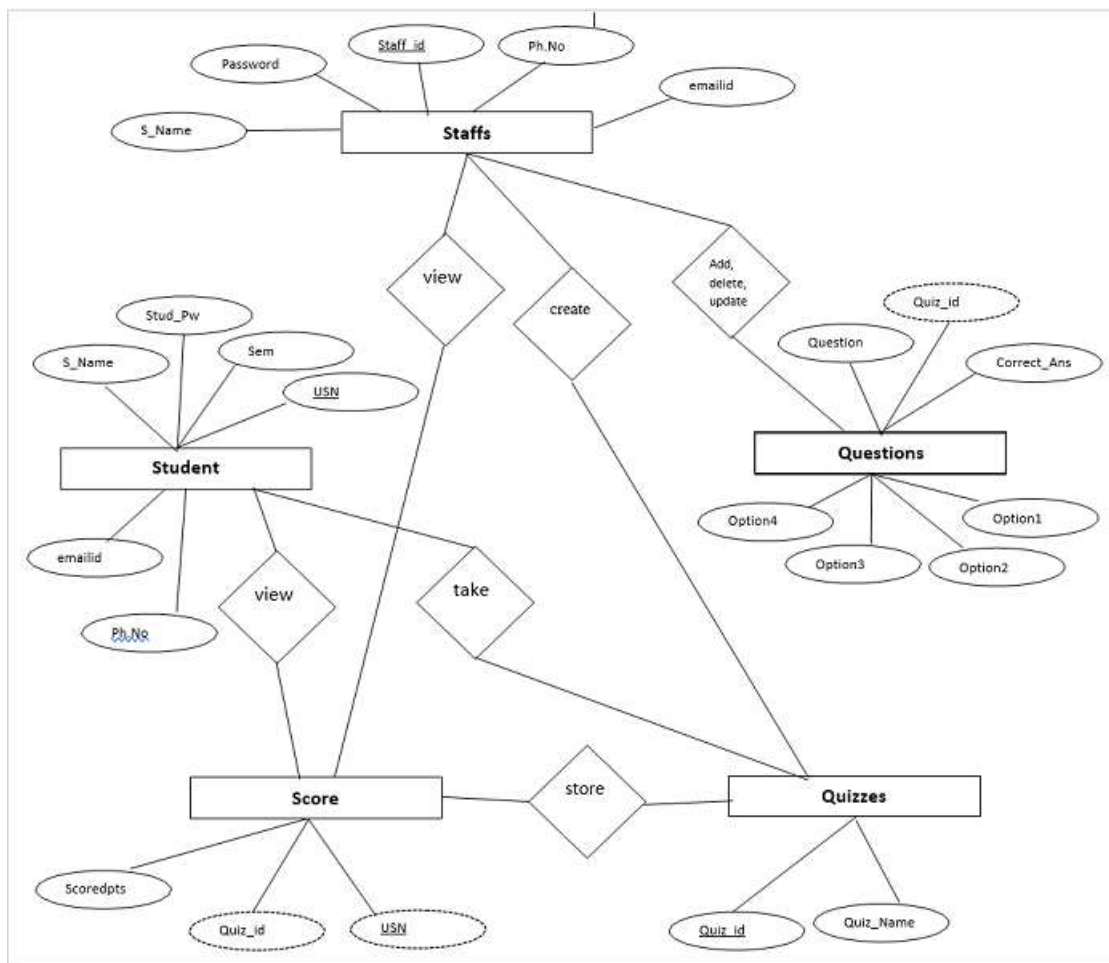
Fig 3.2: ER Diagram of Online Examination System

3.3 Schema Diagram

In any data model it is important to distinguish between the description of the database and the database itself. The description of a database is called the database schema, which is specified during database design and is not expected to change frequently.

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A displayed schema is called a schema diagram. A schema diagram displays only some aspects of a schema, such as the names of record types and data items, and some types of constraints.


Fig 3.3: Schema Diagram

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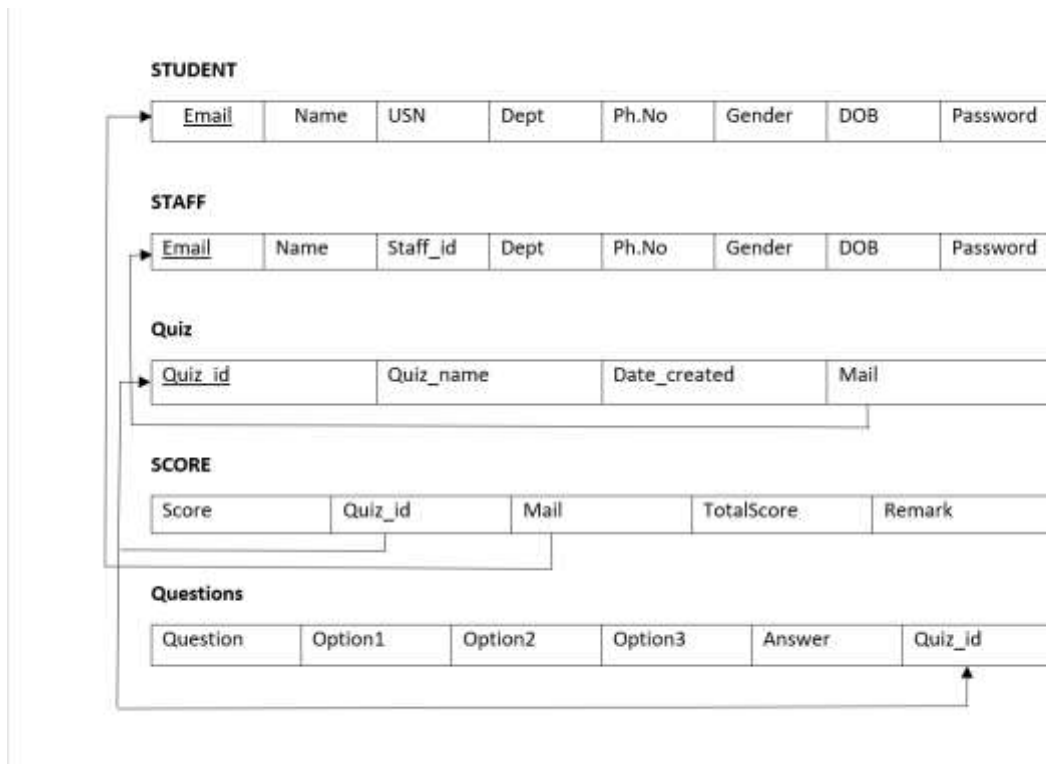
CHAPTER: 4

IMPLEMENTATIONS

4.1 Libraries and Frameworks

PHP

PHP is Hypertext Pre-processor is a general-purpose programming language originally designed for web development.

HTML

Hypertext Markup Language is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.

CSS

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. Functional Modules

JavaScript

JavaScript, often abbreviated as JS, is a high-level, interpreted scripting language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

PHPMailer

PHPMailer is a code library to send emails safely and easily via PHP code from a web server. Sending emails directly by PHP code requires a high-level familiarity to SMTP standard protocol and related issues and vulnerabilities about Email injection for spamming.

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4.2 Functional Modules

The functional modules included in the project are listed below:

Insert Module:

This module provides the functionality of collecting the required data from the designed interface and transmitting it to the appropriate table present in the database designed for this project. If the provided data does not satisfy the given constraints, it must refrain from storing it into the database.

Update Module:

This module again has the functionality of collecting the data from the designed interface, but it updates the already existing tuple that matches the provided primary key of the tuple to be updated, by replacing the existing attribute values with the newly collected data. Again, if the

newly provided data does not satisfy the given constraints, it must refrain from updating the corresponding tuple.

Delete Module:

The delete counterpart is loaded with the ability to delete a single or multiple records from the table. It searches for the tuple, in the query specified table, based on the provided value for an attribute. Admin can delete in the interface, based on which delete module searches for the record corresponding to that provided attribute value and deletes the record.

Retrieve Module:

The retrieve module has a basic functionality of accessing the entire specified table from the database and displays it.

Trigger Module:

Trigger in database is set of statements that are executed after an event occurs on the specified table. This is useful for logs wherein every change in database can be logged which helps keep a track of all changes/transactions on the database.

CHAPTER 5

MODULES IN ONLINE EXAMINATION SYSTEM

Online Examination System is that which enables the Students & Teachers to register for the system. Students are allowed to take the online test and see their progress. Also, it enables the Teachers to add, delete, update the test questions and also to keep track of the student progress.

- **Student**

- **Staff**

- **Login**

- **Add/Remove quizzes and questions**

- **Score**

Student:

Student has to log in to the system and can then view all the quizzes. Student can see the quiz list and attend the quizzes. After attending the quizzes students will get instant result and the same will be stored in the database.

Staff:

Staff also has to log in to the system first, then they can add/remove quizzes. They can see the progress and they can also update the existing quiz.

Login:

Login is must and should for both staff and student. So that all records will be safely saved to the database. If someone had forgot the password ,one can reset that password.

Add/Remove quiz and question:

Staff can add, remove the quiz. And also they can add extra questions to an existing quiz.

Score:

Staff can see the scoreboard of the quiz which is added by him/her. And student can see the score of the quiz which he/she is attended.

CHAPTER 6

CONCLUSION

The online examination system provides better functionality for an examination to be more efficient and reduce manual paperwork in order to automate all possible tasks. For implementing this system, PHP, HTML, CSS, JavaScript and MySql are used.

The system comprises of following features:

- Management of quiz.
- Automated grading.
- Adding/deleting quizzes and questions.

SCOPE OF ENHANCEMENT

There are also few features which can be integrated with the system to make it more flexible.

Below list shows the future points to be considered:

- Implementing the timer for the quiz.
- Sending mails on sign up and when student takes the quiz.
- Supporting all type of questions including MCQ's.

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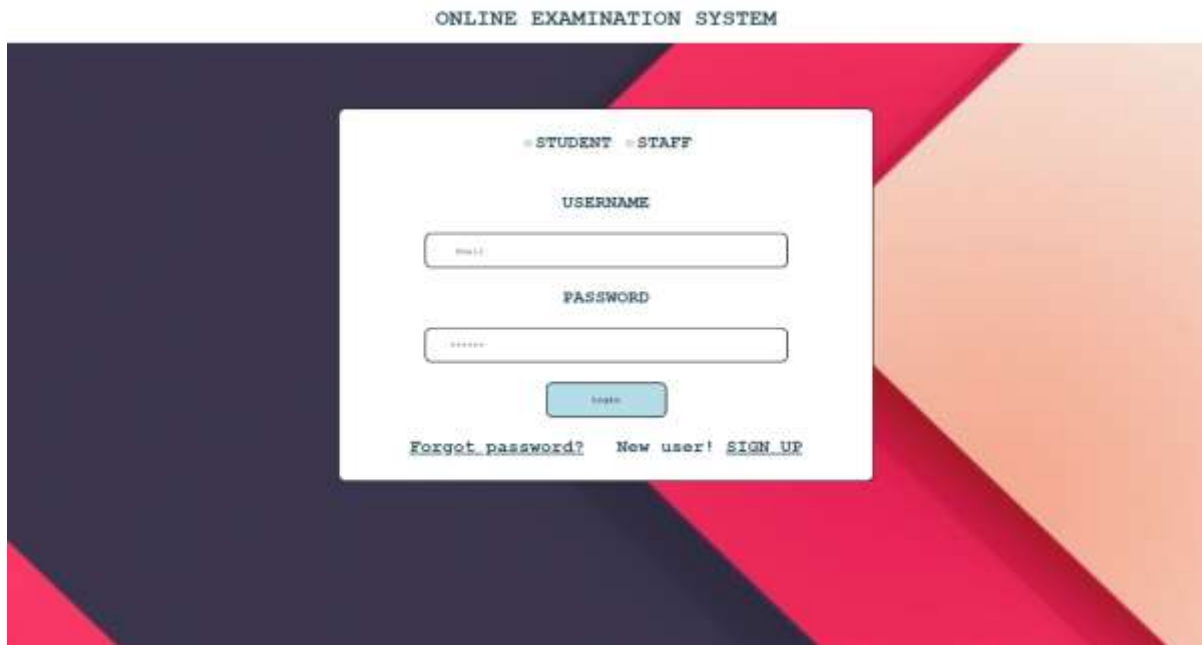
SNAPSHOTS

Snapshot 1: Start page of the project

Snapshot 2: Sign Up Page

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Snapshot 2: Dashboard for Staff

Snapshot 3: Dashboard for Students

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Snapshot 4: Profile view of Student

Snapshot 5: Scoreboard of user

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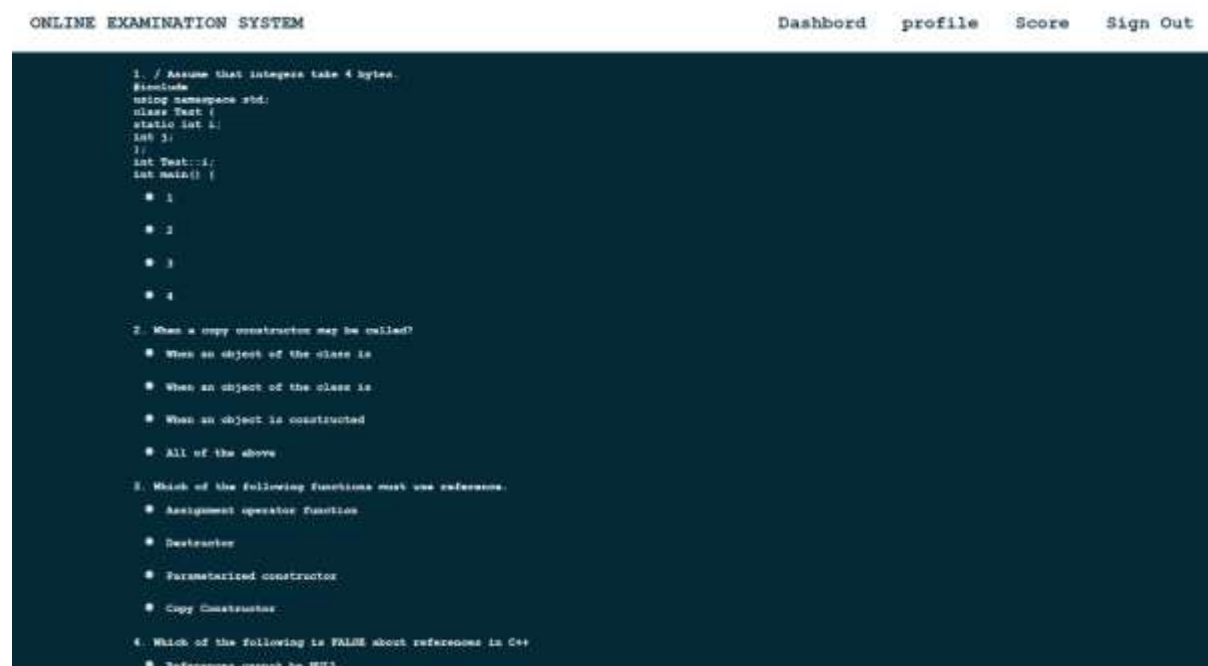
Snapshot 6: Taking Quiz by Student
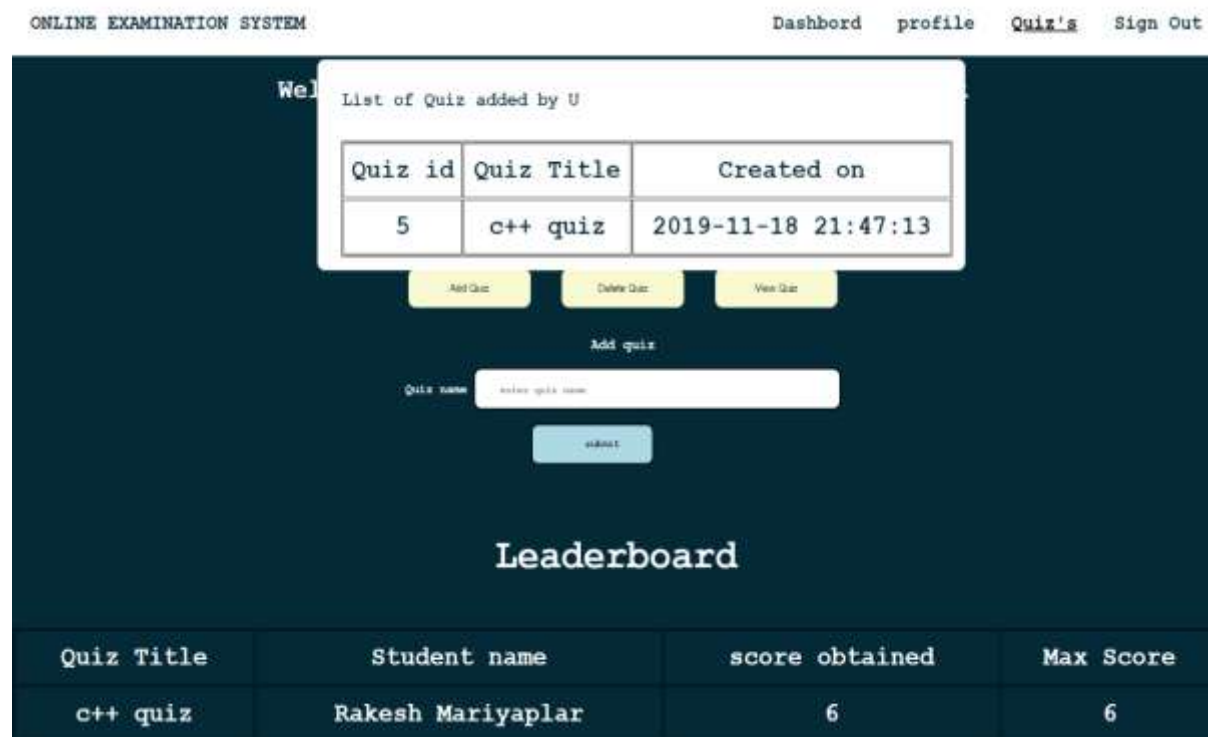
Snapshot 7: Quiz Added by The Staff

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Snapshot 8: Adding quiz page by staff

Snapshot 9: Request for security code

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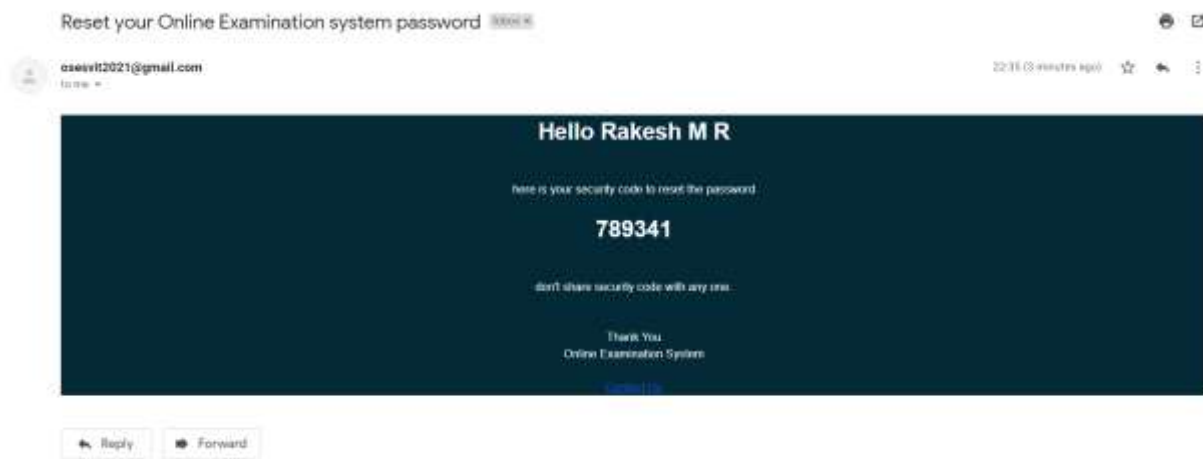
Snapshot 10: mail received by user with security code

Snapshot 11: verifying the security code and update password