

ONLINE EXAMINATION SYSTEM

A COURSE PROJECT REPORT

18CSC303J-Database Management Systems

Submitted by

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SCHOOL OF COMPUTING

COLLEGE OF ENGINEERING AND TECHNOLOGY SRM

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SHUBH SHARMA , of III Year/VI Sem B.Tech Degree in the 18CSC303J - Database Management
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ABSTRACT

ONLINE EXAMINATION SYSTEM is a web-based examination system where examinations are given online, either through the internet or intranet using computer system. The main goal of this online examination system is to effectively evaluate the student thoroughly through a totally automated system that not only reduce the required time but also obtain fast and accurate results.

ONLINE EXAMINATION SYSTEM is an online test simulator is to take online examination, test in an efficient manner and no time wasting for manually checking of the test paper. The main objective of this web based online examination system is to efficiently evaluate the student thoroughly through a fully automated system that not only saves lot of time but also gives fast and accurate results. For students they give papers according to their convenience from any location by using internet and time and there is no need of using extra thing like paper, pen etc.

Functional Specification:

1. Registering new Student
2. Getting the student and staff info and storing it to databases
3. Getting the type and number of question paper
4. Generating result after the exam.

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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 inDBMS.

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

- 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.

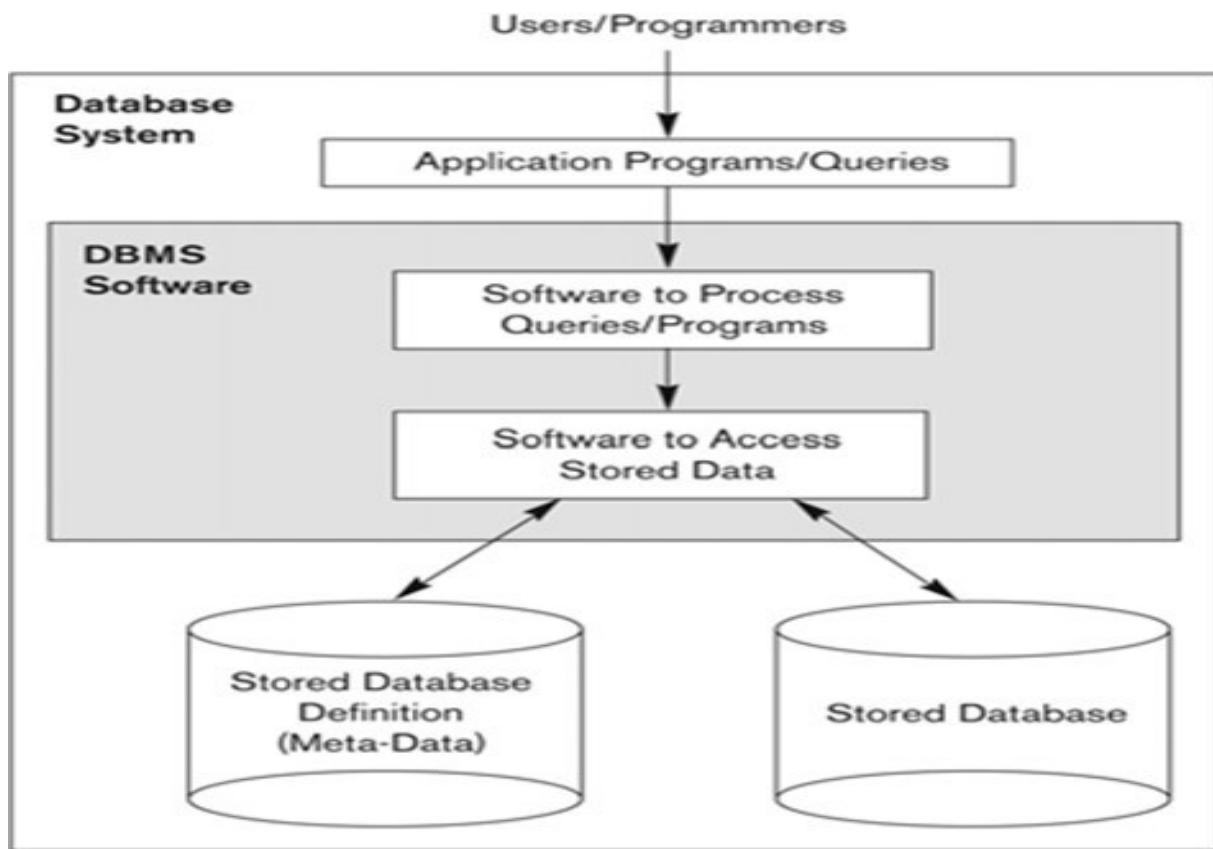


Figure 1.1: Simplified database system environment

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

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:

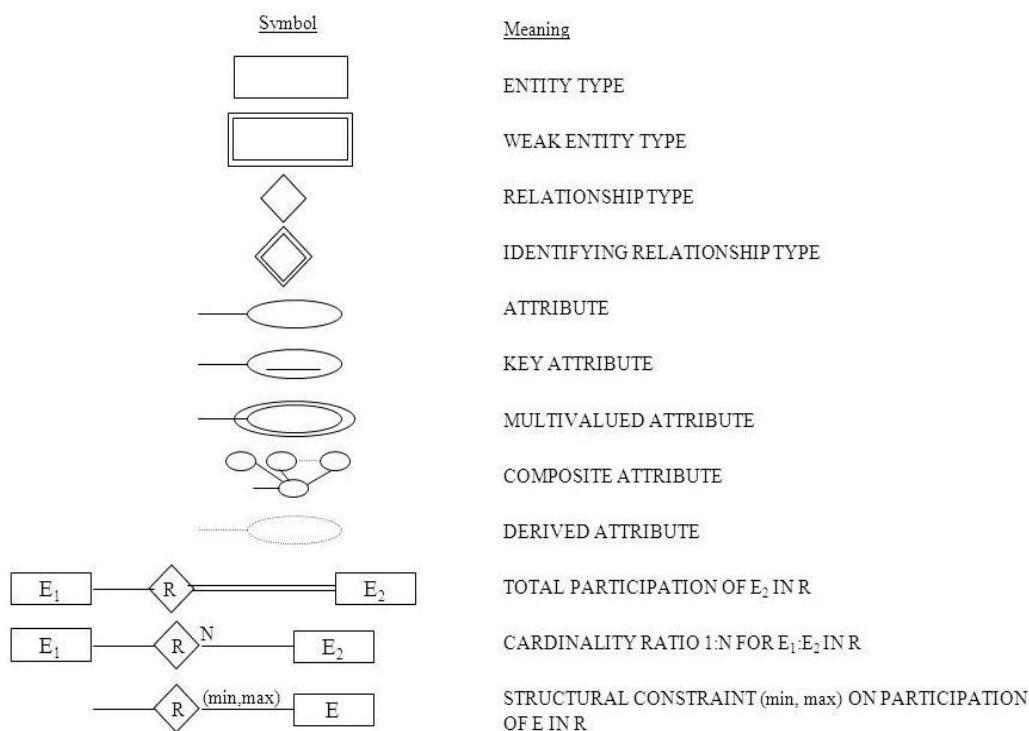


Fig 3.1: Notations for ER Diagrams

The ER diagram below shows the relationship between the many tables that exist in the database for the functioning of Warehouse Inventory Management System.

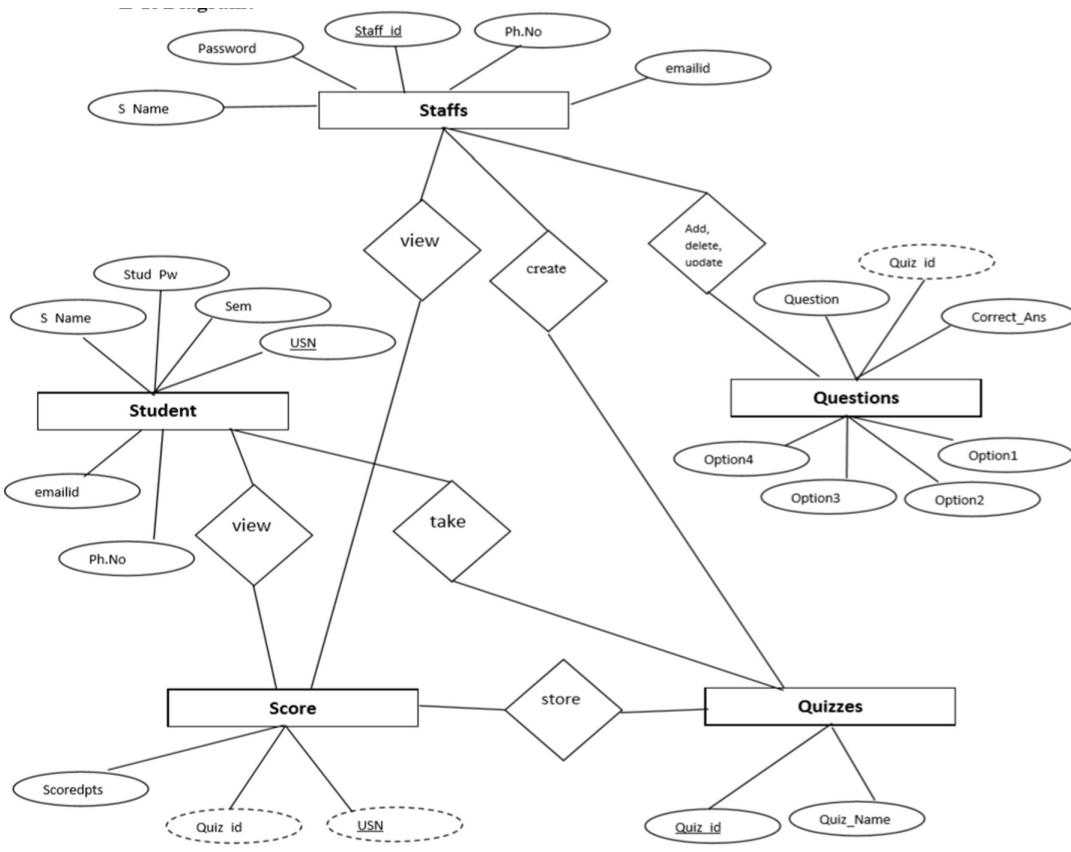


Fig 3.2: ER Diagram of Online Examination System

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.

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.

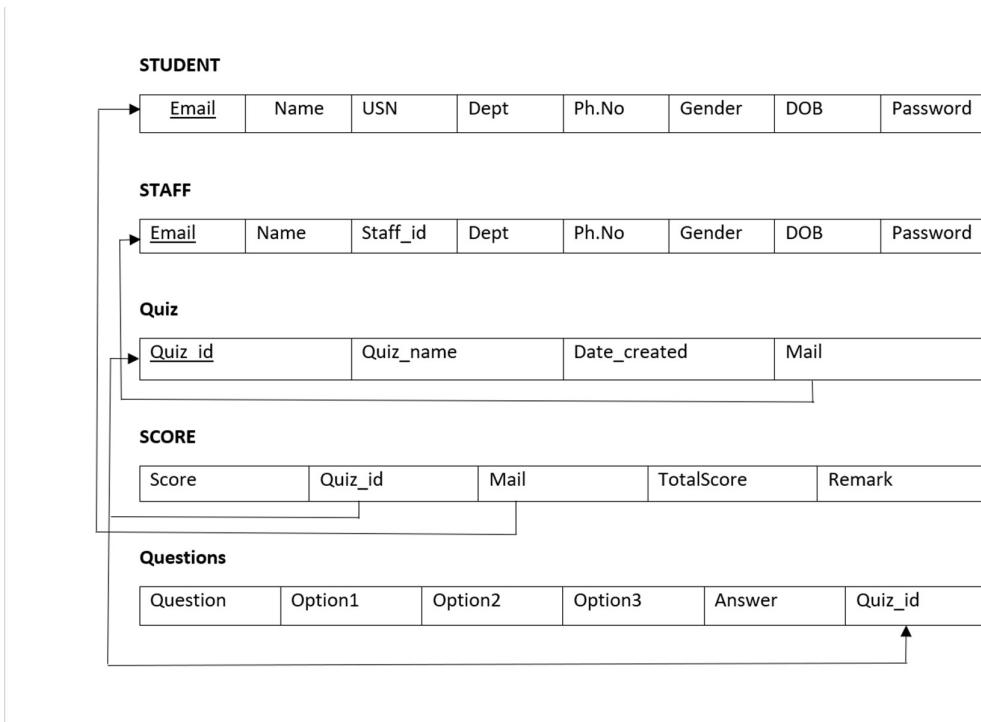


Fig 3.3: Schema Diagram

CHAPTER: 4

IMPLEMENTATIONS

This chapter of the report describes the Functions, packages and modules used in the project:

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.

PHP Mailer

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. So, we used PHP Mailer

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.
- Including Programming Questiond where user can compile or interpret on site only.

BIBLIOGRAPHY

BOOK REFERENCE

- [1] Database System Models, Languages, Ramez Elmasri and Sham Kant B. Navathe, 7th Edition, 2017 Pearson.
- [2] Fundamentals of Web Development, Randy Connolly and Ricardo Hoar ,First Impression, 2016 Pearson

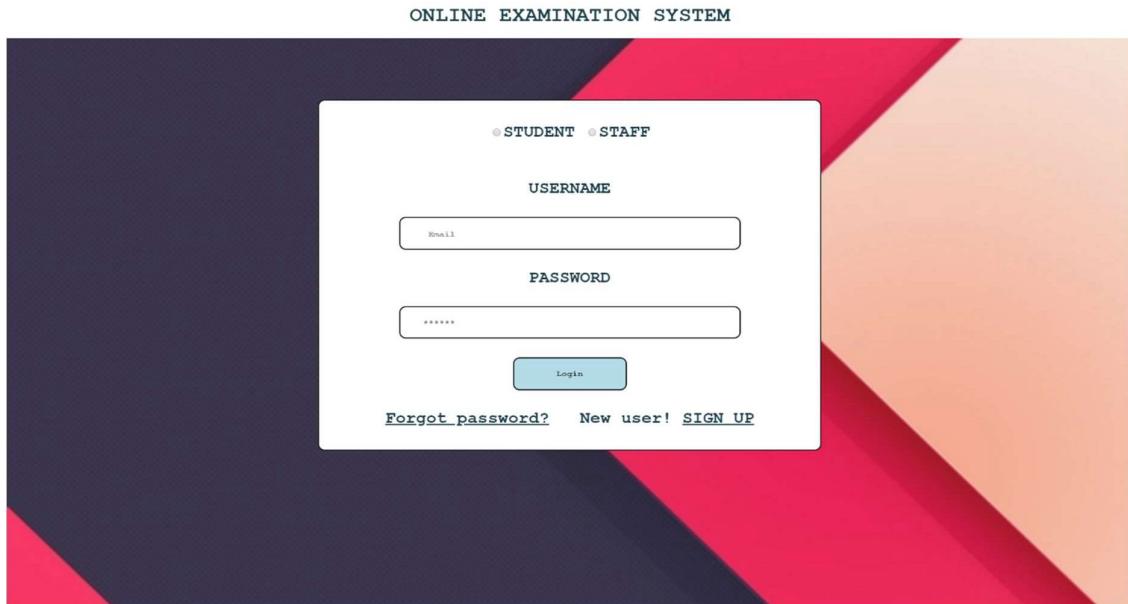
WEBSITES

- [1] www.stackoverflow.com
- [2] www.youtube.com
- [3] <https://www.php.net>
- [4] www.google.com
- [5] <https://www.w3schools.com>



APPENDIX A

SNAPSHOTS



Snapshot 1: Start page of the project

The screenshot shows the "Sign-Up as Student" form. The top navigation bar has "STUDENT" and "STAFF" tabs. The main form fields include: "NAME" (text input), "USN" (text input), "Email" (text input), "Ph No." (text input), "Department" (dropdown menu with "CSF" selected), "DOB" (text input with placeholder "mm/dd/yyyy"), "Gender" (radio buttons for "MALE" and "FEMALE" with "MALE" selected), and "Password" (text input). The background features a dark blue sidebar and red/orange diagonal stripes.

Snapshot 2: Sign Up Page

ONLINE EXAMINATION SYSTEM

Dashboard profile Quiz's Sign Out

Welcome to Online Examination System Rakesh M R

Dashboard

Add Quiz Delete Quiz View Quiz

Leaderboard

Quiz Title	Student name	Score obtained	Max Score
c++ quiz	Rakesh Mariyaplar	6	6

Snapshot 2: Dashboard for Staff

ONLINE EXAMINATION SYSTEM

Dashboard profile Score Sign Out

Take any Quiz

Quiz Title	Created on	Created By	
c quiz	2019-11-18 21:43:50	BHATVINAYAK94@GMAIL.COM	Take Quiz
c++ quiz	2019-11-18 21:47:13	rakeshmr723@gmail.com	Take Quiz

Leaderboard

Quiz Title	Score	Total Score	Student name	Student Mail ID
c++ quiz	6	6	Rakesh Mariyaplar	rakeshmariyaplar1@gmail.com
c quiz	2	3	Rakesh Mariyaplar	rakeshmariyaplar1@gmail.com

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Snapshot 3: Dashboard for Students

1. / Assume that integers t
`#include
using namespace std;
class Test {
 static int i;
 int j;
};
int Test::i;
int main() {
 ● 1
 ● 2
 ● 3
 ● 4`

Type of User : student
 NAME : Rakesh Mariyaplar
 EMAIL : rakeshmariyaplar1@gmail.com
 Ph No. : 6360300095
 USN : 1va17cs140
 GENDER : M
 DOB : 1999-10-07
 Dept. : CSE

2. When a copy constructor may be called?
 ● When an object of the class is
 ● When an object of the class is
 ● When an object is constructed
 ● All of the above

3. Which of the following functions must use reference.
 ● Assignment operator function
 ● Destructor
 ● Parameterized constructor
 ● Copy Constructor

4. Which of the following is FALSE about references in C++
 ● References cannot be NULL

Snapshot 4: Profile view of Student

1. / Assume that integers t
`#include
using namespace std;
class Test {
 static int i;
 int j;
};
int Test::i;
int main() {
 ● 1
 ● 2
 ● 3
 ● 4`

Scoreboard		
Quiz Title	Score Obtained	Total Score
c quiz	2	3
c++ quiz	6	6

2. When a copy constructor may be called?
 ● When an object of the class is
 ● When an object of the class is
 ● When an object is constructed
 ● All of the above

3. Which of the following functions must use reference.
 ● Assignment operator function
 ● Destructor
 ● Parameterized constructor
 ● Copy Constructor

4. Which of the following is FALSE about references in C++
 ● References cannot be NULL

Snapshot 5: Scoreboard of user

ONLINE EXAMINATION SYSTEM

Dashboard profile Score Sign Out

```

1. / Assume that integers take 4 bytes.
#include
using namespace std;
class Test {
static int i;
int j;
} Test::i;
int main() {
    ● 1
    ● 2
    ● 3
    ● 4

2. When a copy constructor may be called?
    ● When an object of the class is
    ● When an object of the class is
    ● When an object is constructed
    ● All of the above

3. Which of the following functions must use reference.
    ● Assignment operator function
    ● Destructor
    ● Parameterized constructor
    ● Copy Constructor

4. Which of the following is FALSE about references in C++
    ● References cannot be NULL

```

Snapshot 6: Taking Quiz by Student

ONLINE EXAMINATION SYSTEM

Dashboard profile Quiz's Sign Out

Welcome List of Quiz added by U

Quiz id	Quiz Title	Created on
5	c++ quiz	2019-11-18 21:47:13

Add Quiz Delete Quiz View Quiz

Add quiz

Quiz name

Leaderboard

Quiz Title	Student name	score obtained	Max Score
c++ quiz	Rakesh Mariyaplar	6	6

Snapshot 7: Quiz Added by The Staff

ONLINE EXAMINATION SYSTEM

Welcome to Online Examination System Rakesh M R

Dashboard

Add Quiz Delete Quiz View Quiz

Add quiz

Quiz name: enter quiz name

submit

Leaderboard

Quiz Title	Student name	score obtained	Max Score
c++ quiz	Rakesh Mariyaplar	6	6

Snapshot 8: Adding quiz page by staff

ONLINE EXAMINATION SYSTEM

Reset the Password

STUDENT STAFF

EMAIL

PASSWORD

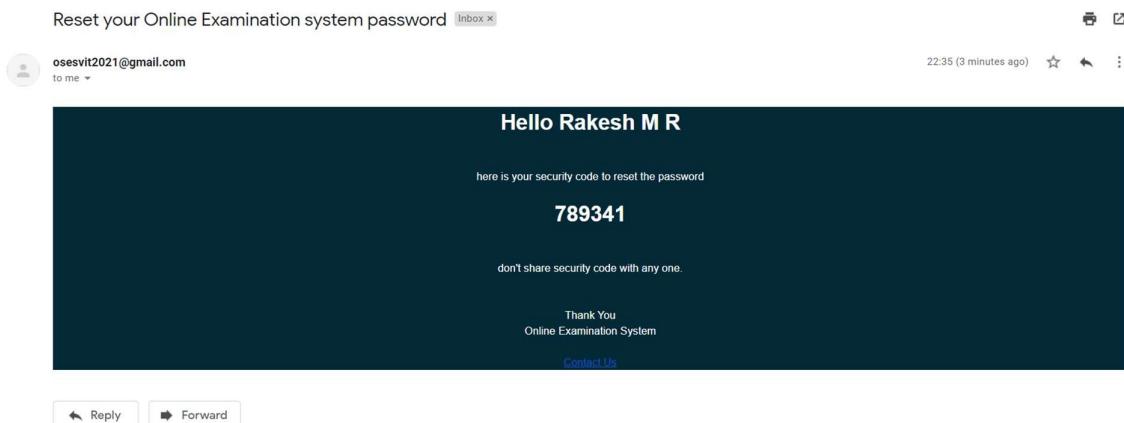
PASSWORD

Get the Code

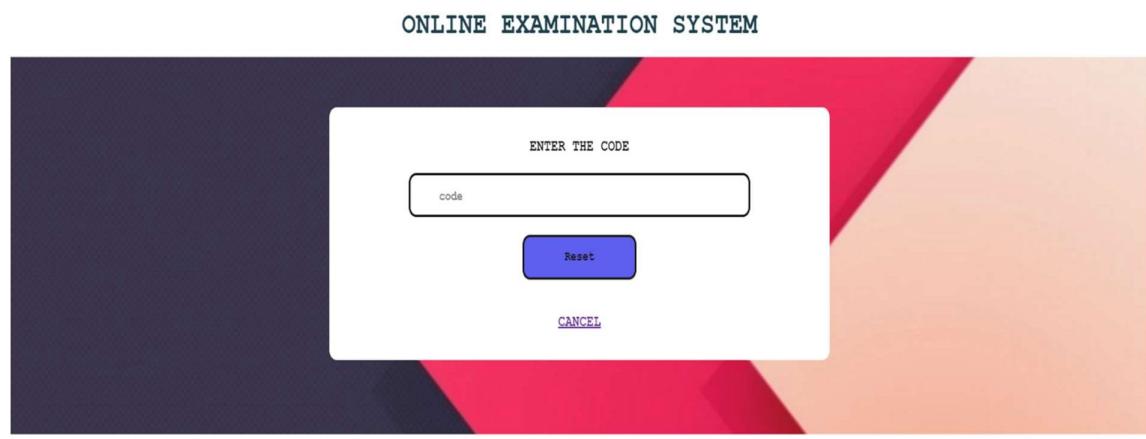
[SIGN UP](#) [Cancel](#)

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Snapshot 9: Request for security code



Snapshot 10: mail received by user with security code



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Snapshot 11: verifying the security code and update password