

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama". Belagavi - 590 018



A Mini -Project Work on

## “Online Examination System”

A Dissertation work submitted in partial fulfillment of the requirement  
for the award of the degree.

**Bachelor of Engineering**  
In  
**Computer Science & Engineering**

Submitted by

**VINAY G**  
**VINUTH R**

**1AY20CS183**  
**1AY20CS185**

Under the guidance of

**Prof.Swathi U**

Assistant Professor



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**ACHARYA INSTITUTE OF TECHNOLOGY**

(AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI. APPROVED BY AICTE, NEW DELHI,  
ACCREDITED BY NAAC, NEW DELHI)

Acharya Dr. Sarvepalli Radhakrishnan Road, Soldevanahalli, Bengaluru - 560107

**2022-23**

# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING ACHARYA INSTITUTE OF TECHNOLOGY

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Acharya Dr. Sarvepalli Radhakrishnan Road, Soldevanahalli, Bengaluru-560107



## Certificate

Certified that the Database Management Systems mini project entitled “**online examination system**” is a bonafide work carried out by **VINAY G (1AY20CS183)** and **VINUTH R (1AY20CS185)** of 5<sup>th</sup> semester in partial fulfillment for the award of degree of **Bachelor of Engineering in Computer Science & Engineering of the Visvesvaraya Technological University, Belagavi**, during the year **2022-2023**. It is certified that all corrections/ suggestions indicated for internal assessments have been incorporated in the Report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the **Bachelor of Engineering Degree**.

Signature of Guides

Signature of HOD

Name of the examiners

Signature with date

1.

2.

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**VINAY G**  
(1AY20CS183)

**VINUTH R**  
(1AY20CS185)

## **ABSTRACT**

An ONLINE EXAMINATION SYSTEM is a web-based examination system where examinations are given online. Either through the internet or intranet using computer system. If a user wants to take a online test the user can go for it. When he selects the option take quiz he can give the online test.

The purpose of this Online Examination System is to effectively evaluate the student through a totally automated system that not only reduce the required time but also obtain fast and accurate results. After giving the quiz the students can immediately check out there results.

Designing the database which enables the Student and Teachers to register for the system. Students are allowed to take the online test and see their progress. Also, to enable the Teachers to add, delete, update the test Questions and also to keep track of the Students progress.

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## CHAPTER 1

### INTRODUCTION

Over the years, educational system has evolved to a great levels and the credit majorly goes to the technologies adopted. With introduction to E-learning and smart classrooms the teachers have been given all the power to make their teaching ecosystem more interactive and easy to track the overall progress. Similarly, the advent of online examination system has brought some advantages to the conventional assessment system. This method is entirely automated, comprehensive, accurate and results can be generated quickly.

#### 1.1 Introduction to DBMS

DBMS stands for **D**atabase **M**anagement **S**ystem. We can break it like this DBMS = Database + Management System. The database is a collection of data and a Management System is a set of programs to store and retrieve those data. Basically, DBMS is a software tool to organize (create, retrieve, update and manage) data in a database.

The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient. By data, we mean known facts that can be recorded and that have embedded meaning. Normally people use software such as DBASE IV or V, Microsoft ACCESS, or EXCEL to store data in the form of a database. A datum is a unit of data. Meaningful data combined to form information. Hence, information is interpreted data – data provided with semantics. MS. ACCESS is one of the most common examples of database management software.

Database systems are meant to handle large collections of information. Management of data involves both defining structures for the storage of information and providing mechanisms that can do the manipulation of those stored information. Moreover, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.

##### 1.1.1 Why DBMS?

- To develop software applications in less time.
- Data Independence and efficient use of data.
- For uniform data administration.
- For data integrity and security.

- For concurrent access of data, and data recovery from crashes.
- To use user-friendly declarative query language.

### 1.1.2 Database applications

- **Telecom:** There is a database to keep track of the information regarding calls made, network usage, customer details, etc. Without the database systems, it is hard to maintain that huge amount of data that keeps updating every millisecond.
- **Industry:** Where it is a manufacturing unit, warehouse, or distribution center, each one needs a database to keep the records of ins and outs. For example, distribution centers should keep a track of the product units that are supplied into the centre as well as the products that got delivered out from the distribution centre on each day; this is where DBMS comes into the picture.
- **Education sector:** Database systems are frequently used in schools and colleges to store and retrieve the data regarding student details, staff details, course details, exam details, payroll data, attendance details, fees details etc. There is a hell lot of interrelated data that needs to be stored and retrieved efficiently.
- **Online shopping:** You must be aware of the online shopping websites such as Amazon, Flipkart etc. These sites store the product information, your addresses and preferences, credit details and provide you the relevant list of products based on your query. All this involves a Database management system.
- **Banking system:** For storing customer info, tracking day to day credit and debit transactions, generating bank statements etc. All this work has been done with the help of Database management systems.

### 1.1.3 Advantages of DBMS

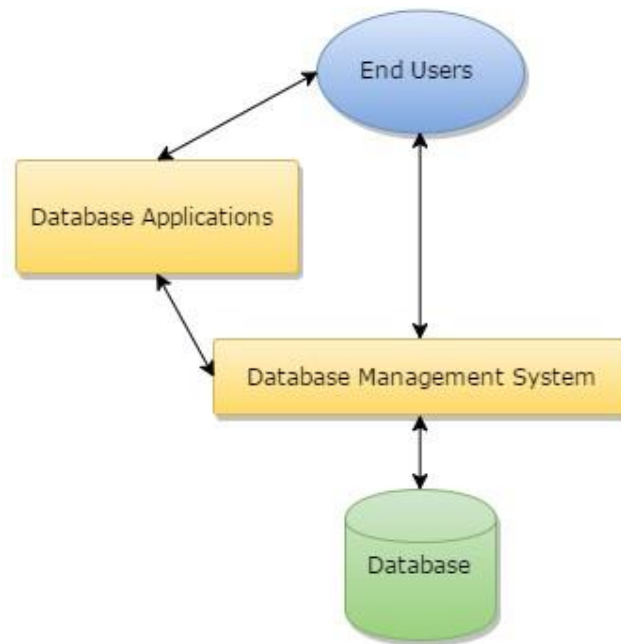
A DBMS manages data and has many advantages.

- **Data Independence:** Application programs should be as free or independent as possible from details of data representation and storage. DBMS can supply an abstract view of the data for insulating application code from such facts.



- **Efficient data access:** DBMS utilizes a mixture of sophisticated concepts and techniques for storing and retrieving data competently and this feature becomes important in cases where the data is stored on external storage devices.
- **Data integrity and security:** If data is accessed through the DBMS, the DBMS can enforce integrity constraints on the data.
- **Data administration:** When several users share the data, integrating the administration of data can offer major improvements. Experienced professionals understand the nature of the data being managed and can be responsible for organizing the data representation to reduce redundancy and make the data to retrieve efficiently.
- **Providing backup and recovery:** A DBMS must provide facilities for recovering from hardware or software failures. The backup and recovery subsystem of the DBMS is responsible for recovery.
- **Permitting inferencing and actions using rules:** Some database systems provide capabilities for defining deduction rules for inferencing new information from the stored database facts.

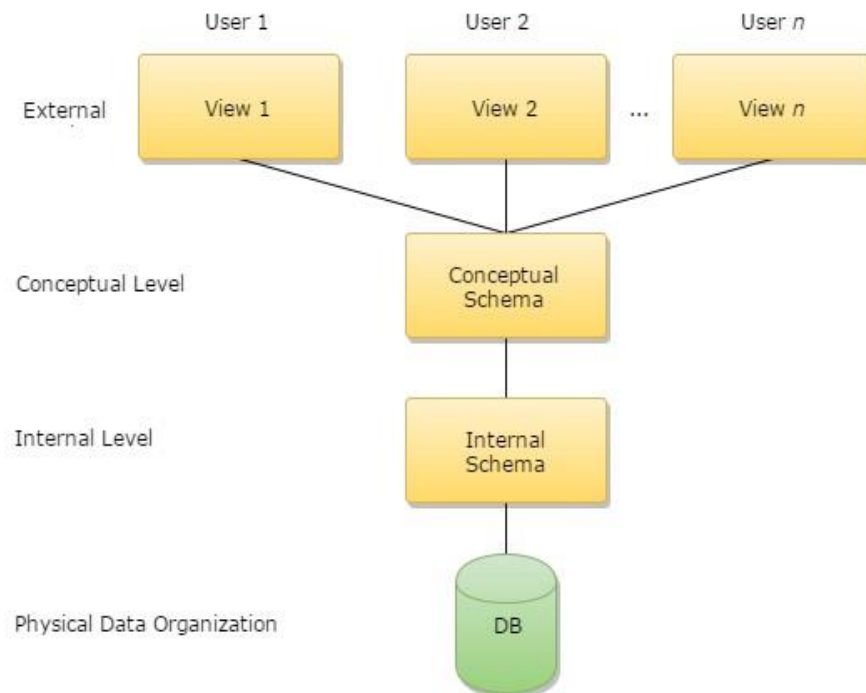
### 1.1.4 Components of DBMS



**Fig-1.1: Components of a Database Management System**

- **Users:** Users may be of any kind such as DB administrator, System developer or database users.
- **Database application:** Database application may be Departmental, Personal, organization's and / or Internal.
- **DBMS:** Software that allows users to create and manipulate database access.
- **Database:** Collection of logical data as a single unit.
- **Database access language:** This is used to access the data to and from the database, to enter new data, update existing data, or retrieve required data from databases. The user writes a set of appropriate commands in a database access language, submits these to the DBMS, which then processes the data and generates and displays a set of results into a user readable form.

### 1.1.5 Three-Schema architecture



**Fig-1.2: Architecture of database system**

The levels form a three-level architecture that includes an external, a conceptual, and an internal level. The way users recognize the data is called the external level. The way the DBMS and the operating system distinguish the data is the internal level, where the data is actually stored using the data structures and file. The conceptual level offers both the mapping and the desired independence between the external and internal levels.

## CHAPTER 2

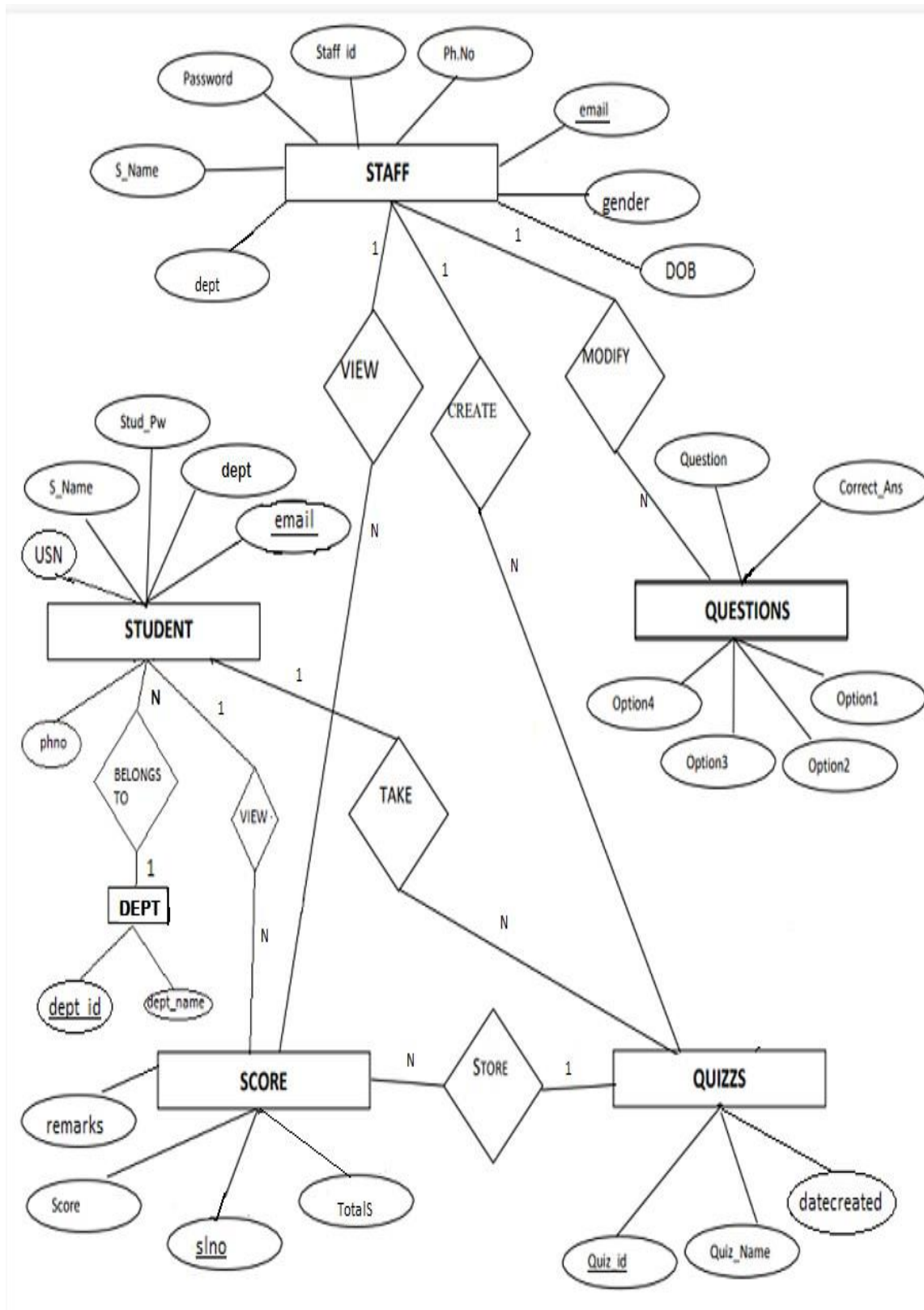
## SYSTEM REQUIREMENTS

### 2.1 Hardware Requirements

- **Processor:** Intel Core2 Quad @ 2.4Ghz on Windows® Vista 64-Bit / Windows® 7 64Bit / Windows® 8 64-Bit / Windows® 8.1 64-Bit.
- **RAM:** 2GB of RAM
- **Memory:** 256GB Hard drive
- **Keyboard:** MS-compatible keyboard ● **Mouse:** MS-compatible mouse

### 2.2 Software Requirements

- **Operating system:** Windows® Vista 64-Bit / Windows® 7 64-Bit / Windows® 8 64Bit / Windows® 8.1 64-Bit.
- **Front end:** HTML, CSS, JAVASCRIPT
- **Back end:** PHP ● **Orm:** XAMPP
- **IDE:** VS Code

**CHAPTER 3****DESIGN****3.1 ER Diagram****Fig-3.1: Entity Relationship Diagram**

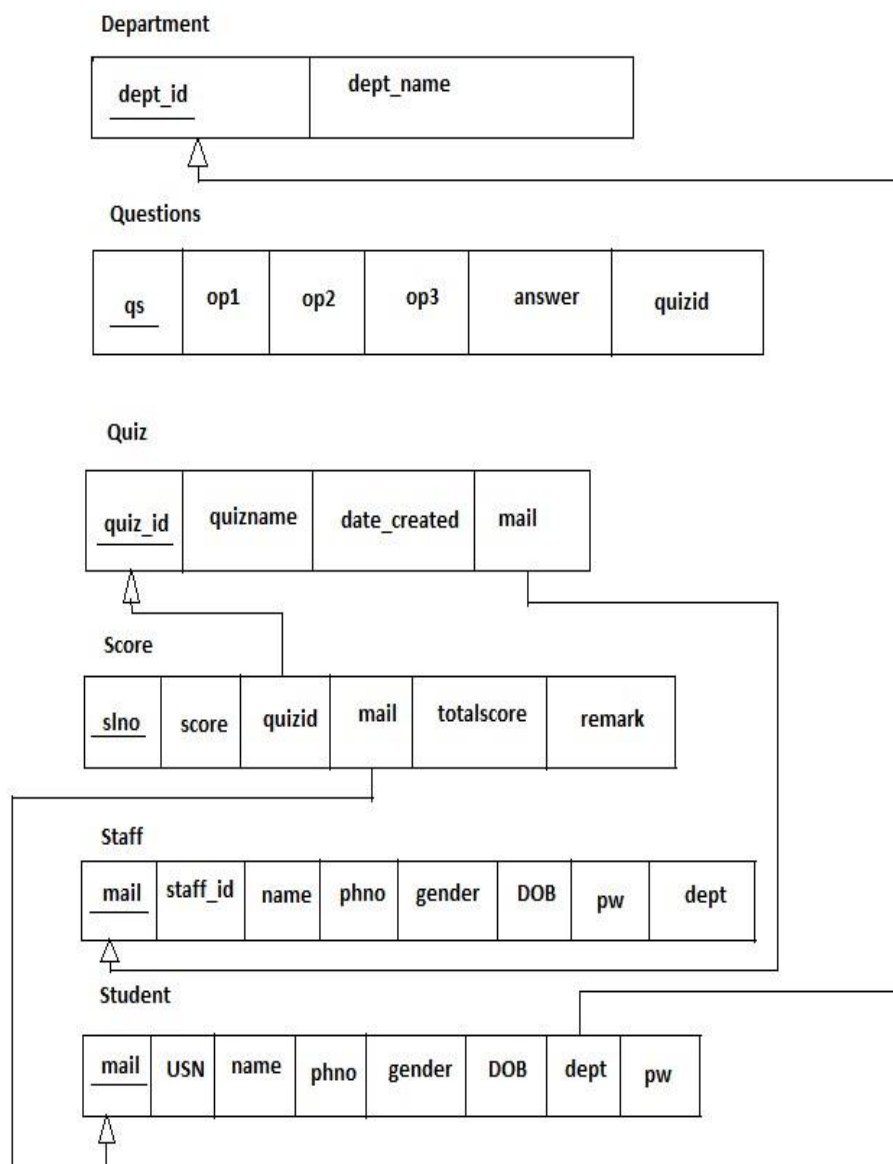
**N:1**

- Many students belong to one department.
- Many scores can be stored for one quiz.

**1:N**

- One staff can view many scores.
- One staff can create many quizzes.
- One student can attend many quizzes.
- One staff can modify many questions.

**3.2 Schema Diagram**

**Fig-3.2: Schema Diagram**

## CHAPTER 4

## IMPLEMENTATION

### 4.1 Tables

#### 4.1.1 DEPARTMENT

Entity name	ATTRIBUTES	CONSTRAINTS
<b>DEPT</b>		
	dept_id	Primary key , NOT NULL
	Dept_name	Default NULL

#### 4.1.2 QUESTIONS

Entity	ATTRIBUTES	CONSTRAINTS
<b>QUESTIONS</b>	qs	Unique key
	op1	Not null
	op2	Not null
	op3	Not null
	answer	Not null



	quizid	Not null
--	--------	----------

### 4.1.3 QUIZ

Entity	ATTRIBUTES	CONSTRAINTS
<b>QUIZ</b>	<b>quizid</b>	<b>PK , auto increment</b>
	quizname	Not null
	date_created	Not null default current time
	mail	Default null, FK

### 4.1.4 SCORE

Entity	ATTRIBUTES	CONSTRAINTS
<b>SCORE</b>	<b>sln</b>	<b>PK, Auto Increment</b>
	score	Not null
	quizid	Not null ,FK
	mail	Not null ,FK

	totalscore	Not null
	remark	Not null

#### 4.1.5 STAFF

Entity	ATTRIBUTES	CONSTRAINTS
<b>STAFF</b>	<b>mail</b>	<b>PK</b>
	staffid	Not null, Unique key
	name	Not null
	phno	Not null, Unique key
	gender	Not null
	DOB	Not null
	pw	Not null
	dept	Default Null

#### 4.1.6 STUDENT

Entity	ATTRIBUTES	CONSTRAINTS

<b>STUDENT</b>	USN	Not null, Unique key
	name	Not null
	mail	PK
	phno	Not null, Unique key
	gender	Not null
	DOB	Not null
	dept	FK, Default null
	pw	Not null

## 4.2 Triggers

```
CREATE TRIGGER `remarks`
BEFORE INSERT ON `score`
FOR EACH ROW set NEW.remark = if(NEW.score = 0, 'bad', 'good');
```

```
CREATE TRIGGER `ondeleteqs`
AFTER DELETE ON `quiz`
FOR EACH ROW DELETE FROM questions WHERE questions.quizid=old.quizid;
```

## 4.3 Stored Procedures

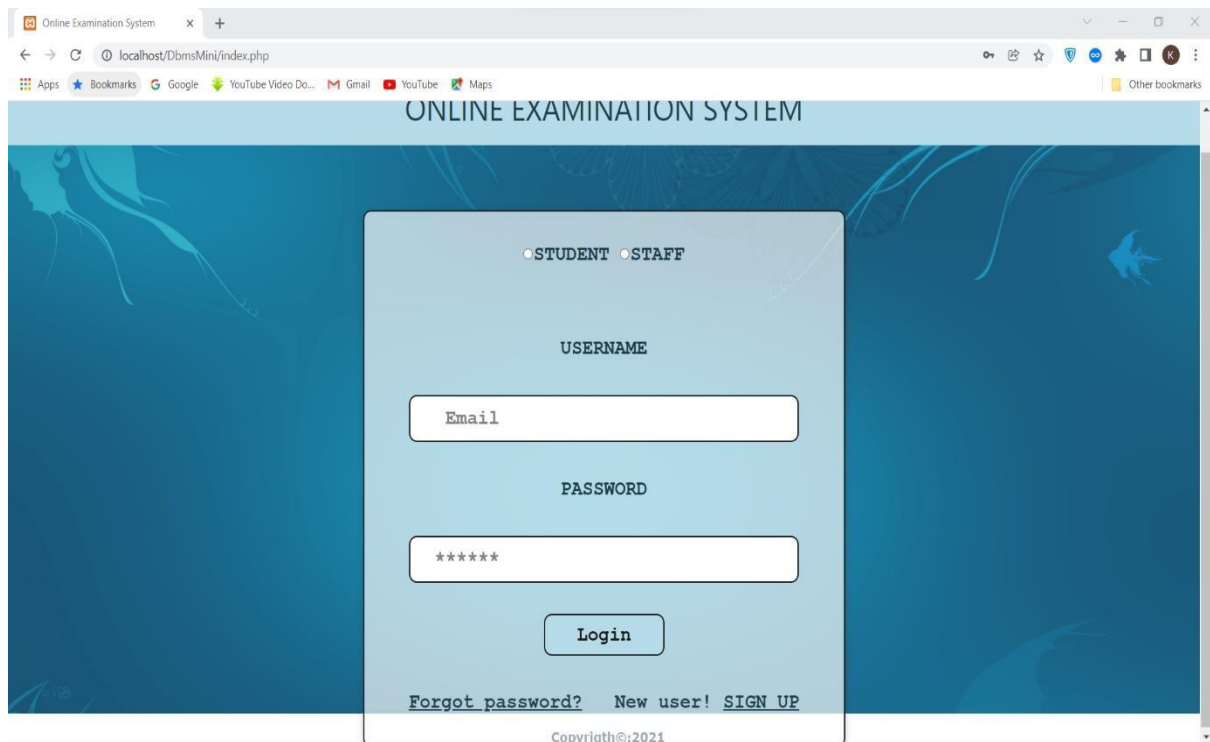
```
DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE
`leaderboard`() select q.quizname,s.score,s.totalscore,st.name,s.mail
from score s,student st,quiz q where s.mail=st.mail and
q.quizid=s.quizid order by score DESC$$
```

DELIMITER;

## CHAPTER 5

### SNAPSHOTS

The following snapshot contains the root page or launch page



**Fig-5.1: Snapshot of root page or welcome screen**

1. The welcome screen contains links for -
  - **Student • Staff • Login in • Sign up • Forgot password**
2. User can login using email and password
3. User can sign up by providing all details.
4. User can select the student and staff.
5. User can select forgot password option.

#### Validators Given

1. The Username and Password cannot be empty.
2. The Username must be of E-Mail type only.
3. Users need to enter username and password.

localhost/DbmsMini/signup.php

Apps Bookmarks Google YouTube Video Do... Gmail YouTube Maps Other bookmarks

ONLINE EXAMINATION SYSTEM

STUDENT STAFF

### Sign-Up as Student

NAME

USN

Email

Ph No.

Department

DOB

Gender

MALE FEMALE

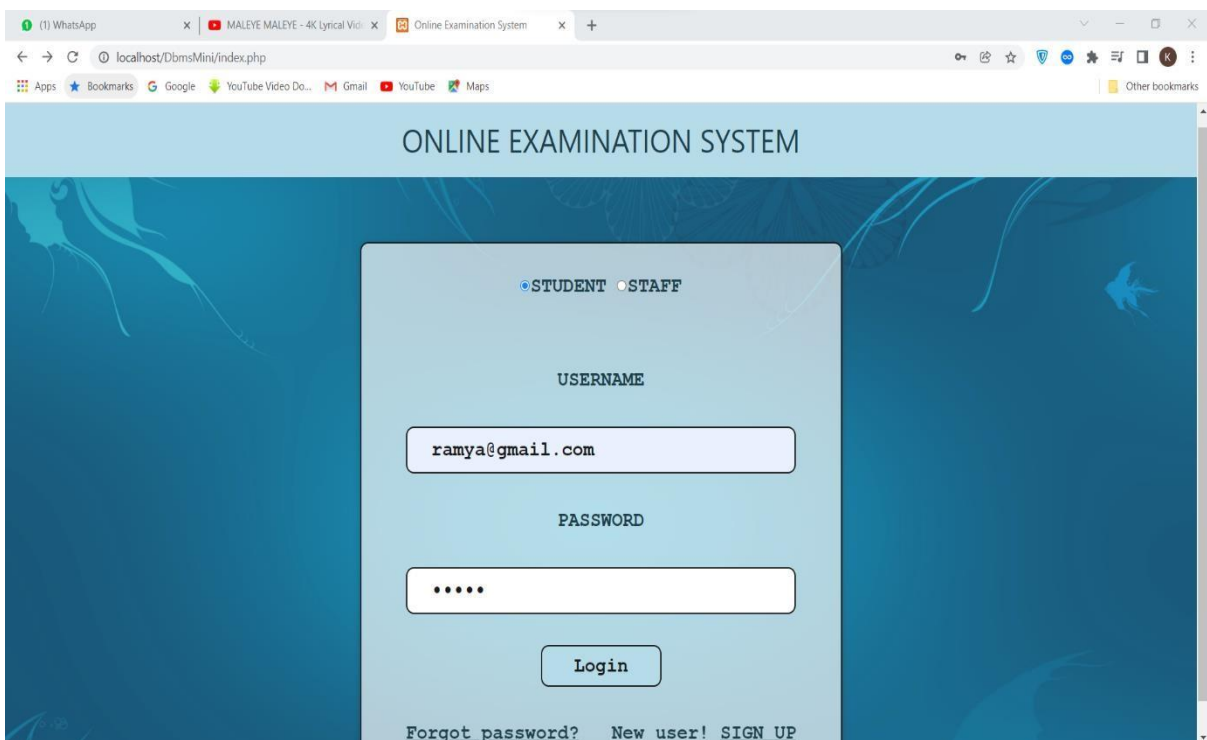
Password

**Fig-5.2: Snapshot of sign up page as student**

For giving online exam first sign up for online examination system and then login with the account. The user needs to give his email and password twice and sign up.

**Validators given**

1. User needs to enter email and a password.
2. Email validation is given by a validating with email type.
3. Password validation is given based on password.
4. If the user already has an account then there is a link for sign in.

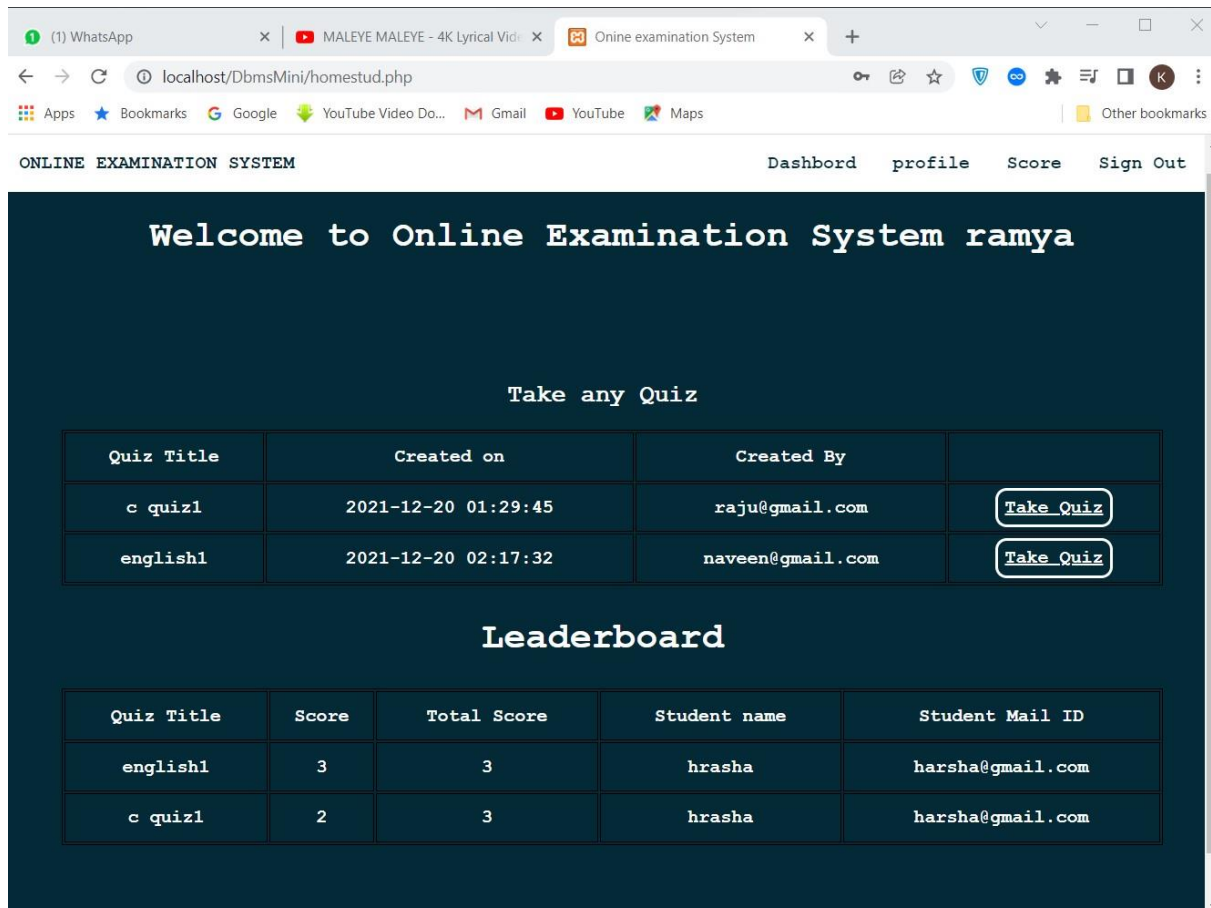


**Fig-5.3: Snapshot of Login page**

Once the user has successfully registered he can login with his register email and password.

**Validators given**

1. A user will be able to log in only when he has been registered.
2. When he completes the registration i.e sign up user will be directly redirected to this page giving a prompt of Registration done.
3. Here also there is an option to for Sign Up if the User has not registered yet.
4. After the completion of the Login the user will be directed to student home page or staff page.



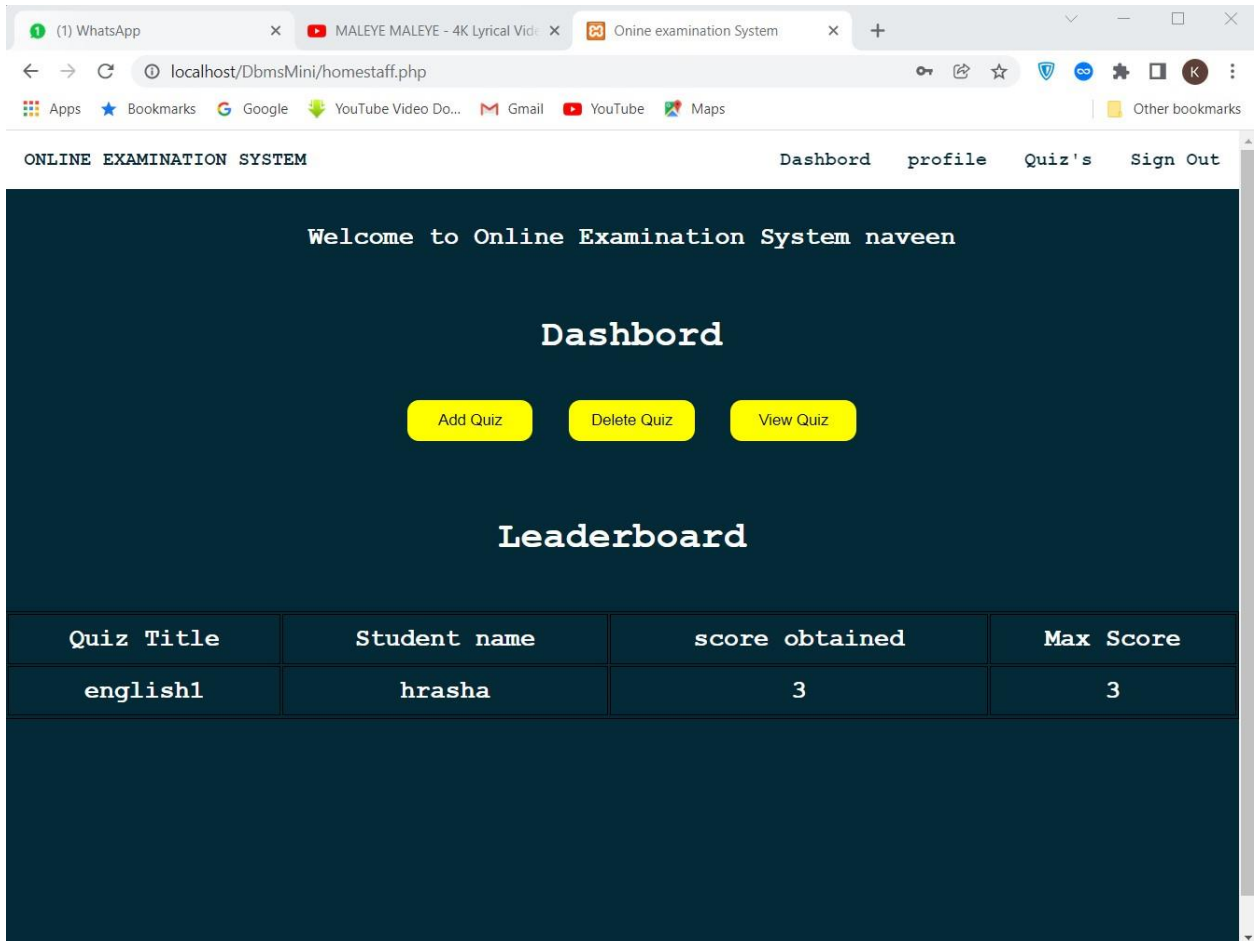
**Fig-5.4: Snapshot of index page of Student**

The above snapshot is seen as soon as the user registers for online exam through this page he will take a quiz.

- User can select Take Quiz to take a test.
- User can even view his details using Dashboard option.
- User's can view there score as soon as the test is completed.
- After giving the test and all they can Logout.
- When user Logout the User will be directed to home page.

**Validators given**

1. The following page will not be rendered if the user is not successfully logged in .



**Fig-5.5: Snapshot of index page of Staff**

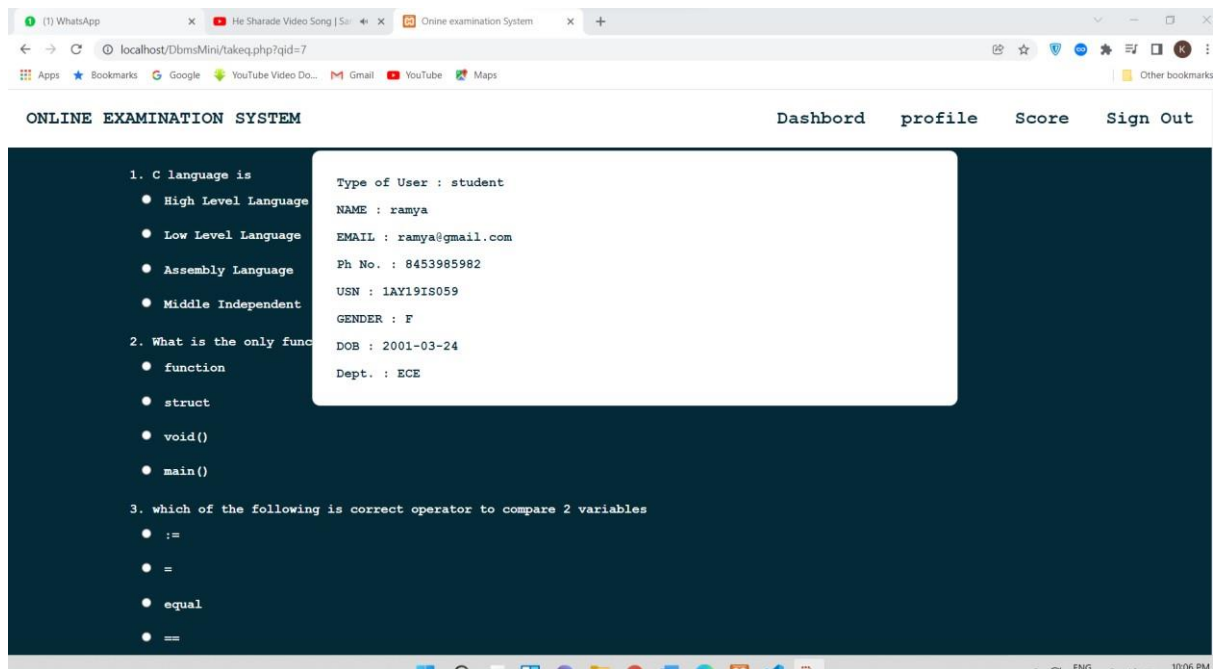
The above snapshot is seen as soon as the user registers for online exam as staff in this page the staff can add quiz, delete quiz and view quiz.

- When a user selects add quiz he can add new quiz by providing quiz name and so on.
- When the user selects delete quiz he can delete the quiz by specifying the quid\_id.
- By clicking on profile he can view his details.
- When user Logout the User will be directed to home page.

**Validators given**

- The following page will not be rendered if the user has not successfully logged in.





**Fig-5.6: Snapshot of Profile view as Student**

The is a snapshot of profile of student

- When a user clicks on profile he/she will be able to see the personal details of their own.  
For example here ramya and you can see the all her personal details.
- It shows the type of user, name, Email, ph no, USN, gender, DOB and department.

### Validators given

- The following page will not be rendered if the user has not successfully registered.

The screenshot shows a web browser window with the URL `localhost/DbmsMini/homestud.php`. The page title is "ONLINE EXAMINATION SYSTEM". The user is logged in as "ramya". The page features a "Scoreboard" section with a table showing quiz results for "c quiz1". Below this is a list of quizzes with "Take Quiz" buttons. At the bottom is a "Leaderboard" table showing the top scores.

Quiz Title	Score Obtained	Total Score	Remarks
c quiz1	1	3	good

Quiz Title	Created on	Created By	
c quiz1	2021-12-20 01:29:45	raju@gmail.com	<a href="#">Take Quiz</a>
english1	2021-12-20 02:17:32	naveen@gmail.com	<a href="#">Take Quiz</a>

Quiz Title	Score	Total Score	Student name	Student Mail ID
english1	3	3	hrasha	harsha@gmail.com
c quiz1	2	3	hrasha	harsha@gmail.com
c quiz1	2	3	hrasha	harsha@gmail.com

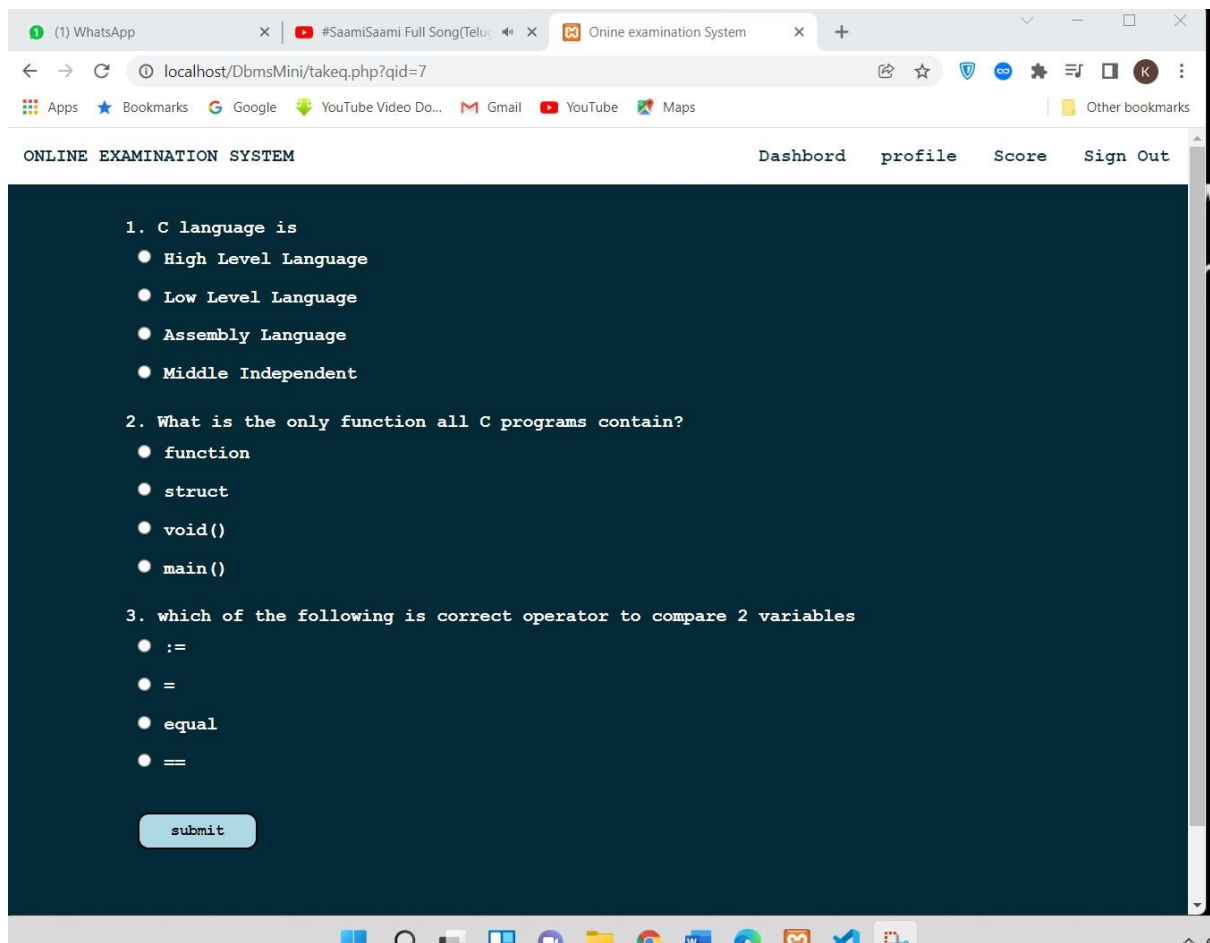
**Fig-5.7: Snapshot of Scoreboard of student**

The is a snapshot of Scoreboard of user .

- When a user selects the quiz and after giving the quiz he/she can view the scoreboard to check the results..
- It shows the quiz title, score obtained, total score and remarks .
- Remarks are based on the marks obtained.

### Validators given

- The following page will not be rendered if the user has not successfully registered.

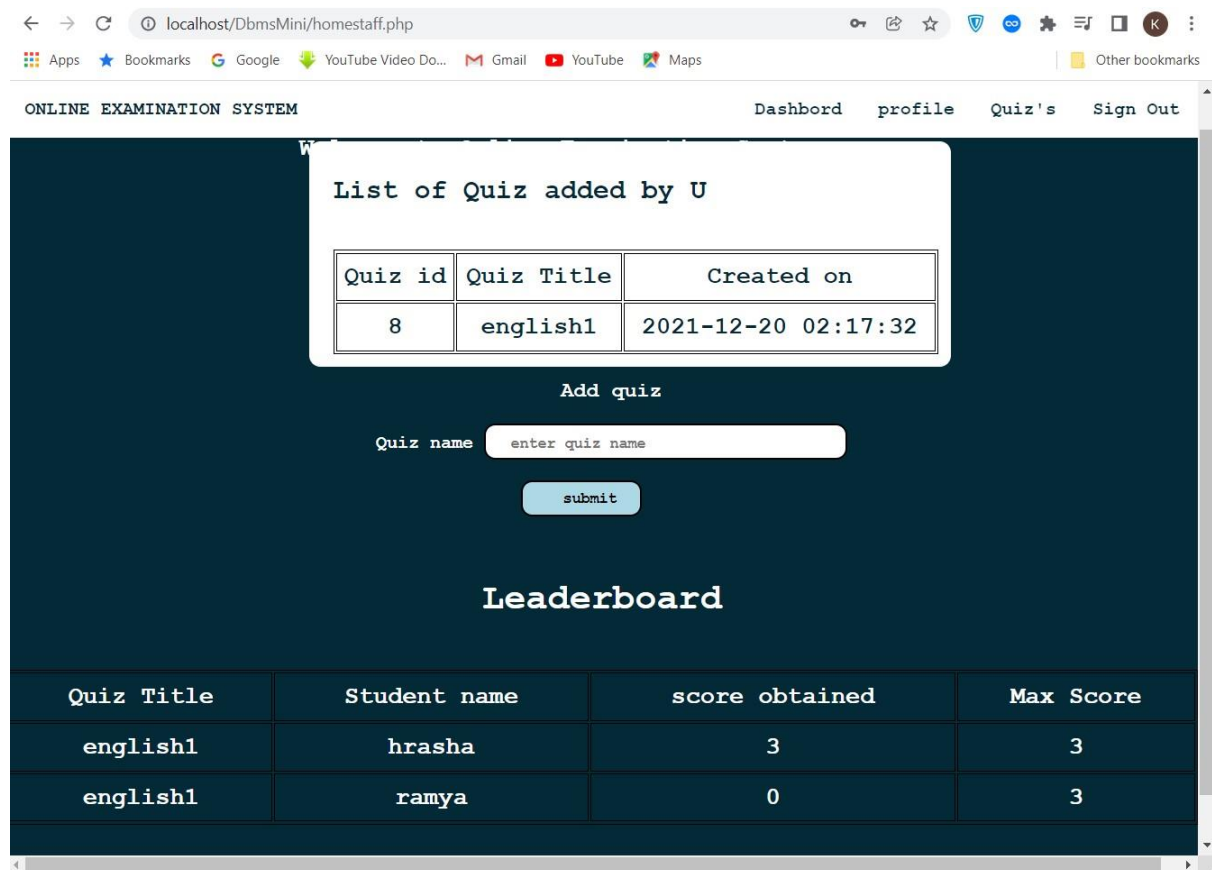


**Fig-5.8: Snapshot of Taking Quiz by Student**

- Only after user has selected to take quiz he/she can see the questions and then submit it.
- As soon as the user submit they can view the results.

### Validators given

- The following page will not be rendered if the user has not successfully registered.



**Fig-5.9: Snapshot of Quiz Added by the Staff**

The is a snapshot of the quiz added .

- When a user selects to add a quiz by specifying quiz name.
- Then he/she will be directed to add questions with options and answers.
- After adding the quiz he can see in the list of quiz.

### Validators given

- The following page will not be rendered if the user has not successfully registered.
- The following list of quiz would not display if the user haven't added any quiz.

The screenshot shows a web browser window titled 'ONLINE EXAMINATION SYSTEM' with the address bar displaying 'localhost/DbmsMini/reset.php'. The main content area features a 'Reset the Password' form. At the top of the form are two radio buttons labeled 'STUDENT' and 'STAFF'. Below these are three input fields: 'EMAIL', 'PASSWORD', and 'CONFIRM PASSWORD'. The 'PASSWORD' and 'CONFIRM PASSWORD' fields are masked with asterisks. A blue button labeled 'Get the Code' is positioned below the input fields. At the bottom of the form are two links: 'SIGN UP' and 'Cancel'. The background of the page is a close-up image of a white computer keyboard.

**Fig-5.10 : Snapshot of password resetting**

The is a snapshot of the reset password

- The above page is used to reset a password when the user has forgotten the password. •
- User need to enter the new password twice and then click on get the code so that he /she will receive a security code.
- After entering the security code he/she will be able to update the password and Login.

### Validators given

- The following page is displayed only when the user clicks on forgot password by entering a valid email id.

## **CONCLUSION & FUTURE ENHANCEMENT**

### **Conclusion**

Online Examination System is a web application that helps users to take online test and view the results immediately. It provides greater accuracy and updation can be done easily. It also provides flexibility for users to take exam anywhere. It reduces the manual paperwork as it is a automated system. 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.

### **Future 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 types of questions including MCQ's.
- Implementing programming questions where users can compile on the same site.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project.

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