



# Nitte Meenakshi Institute of Technology



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## Department of Information Science and Engineering

### MINI- PROJECT REPORT ON ONLINE EXAMINATION SYSTEM

*Submitted by*

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**CERTIFICATE**

Certified that the project work titled **Online examination System** is carried out by **Darshan P Hegde(1NT18IS405), Prabhulinga(1NT18IS412), Vidyasree M(1NT17IS193), Chandini E.C(1NT18IS404)**, who are bonafide students of NMIT, Bangalore, as a partial fulfillment of the curriculum requirement of 5<sup>th</sup> Semester DBMS Laboratory Mini Project during the academic year **2019-2020**. It is certified that all corrections/suggestions indicated for the internal Assessment have been incorporated in the report deposited in the departmental library. The report has been approved as it satisfies the academic requirements in all respect of laboratory mini-project work prescribed by the institution.

**Signature of Faculty Incharge:**

**Head of the Department**

**Dept. of ISE, NMIT**

**External Examination**

**Name of Examiners**

**Signature with date**

**1**

**2**

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## 1. Introduction

Online Examination System is technology driven way to simplify examination activities like defining exam pattern with question bank, defining exam timer, objective/ subjective question sections, conducting exams using computer or mobile devices in paperless manner.

Online Examination System is cost effective ,scalable way to convert traditional pen and paper based exams to online and paperless mode.

Candidates can appear for the exam using any desktop, laptop or mobile device with browser. Exam results can be generated instantly for objective type of questions.

It can simplify overall examination management and result generation activity.

## 2. Software Requirement Specifications

### 2.1 Overall Description

Purpose of the web based online examination system is to eliminate the traditional style pen and paper exam and start modern computer and laptop based exam, it will consumes the time, and effort. It is well secured than the traditional exam system, do not need any examiners, student can write it anywhere by using there laptop and computer.

#### 2.1.1 SCOPE:

- Scope of this project is very broad in terms of other manually taking exams.
- This can be used in educational institutions as well as in corporate world.
- Can be used anywhere any time as it is a web based application(user Location doesn't matter).
- No restriction that examiner has to be present when the candidate takes the test.

#### 2.1.2 OVEVIEW:

The online test created for taking online test has following stages

- Login
- Test
- Result

### **2.1.2.1 Login:**

Login Page is Very important in a security factor. In our project we make a very secured login page. The student have to register for the exam first by click on the create new account button, Fill all the information of that page, after that login for the exam by giving username, university seat number and password.

Note that if you not give the correct username, password and usn you have not allowed to take an exam.

### **2.1.2.2 Test:**

Test page is handled by the admin, admin have all rights to adding a question and removing a question. The exam contain any number of questions it's based on the admin. You have to answer all the question which are appear on the display screen. Question is multiple choice question you have to select one of the four options, at the end you will get your result.

### **2.1.2.3 Result:**

It shows the overall performance of the student, In our project there is no grade or percentage showing option, it simply shows the total correct answer that the question student attended.

## **ABOUT THE EXAMINATION SYSTEM:**

Our examination system project is secure, user-friendly, fast and accurate. User have to login by giving username, password and university seat number(usn). One of these information's are incorrect than student will not get next page.

All the questions are multiple choice question, student have to choose one of the four options, and student have must attend all the questions. The admin have ability to Enter and delete the questions, so there is no guarantee about the total number of questions.

Our web project instantly gives the result, after completion of the project. It will not show the percentage, grade or pass or fail it will show the total correct answer in the available questions.

## **2.2 Specific Requirements**

### **2.2.1 Software Requirements**

This web application requires a web browser.

### **2.2.2 Hardware requirements**

Any computer that can run a web browser and an internet connection can run this application.

### **2.2.3 Functional Requirement**

- Student can register before they take a exam.
- The system consists of WAN or internet connection
- System should handle multiple exam at the same time
- Admin manage the question bank
- Only registered student can take an exam

### **2.2.4 Non-Functional Requirement**

To ensure that if there is crash during examination system the data will be lost, and the student can restart the exam from the beginning.

## **2.2.5 TECHNOLOGIES USED**

### **Front end:**

HTML, CSS, Java Script

### **Back end as:**

Node Js

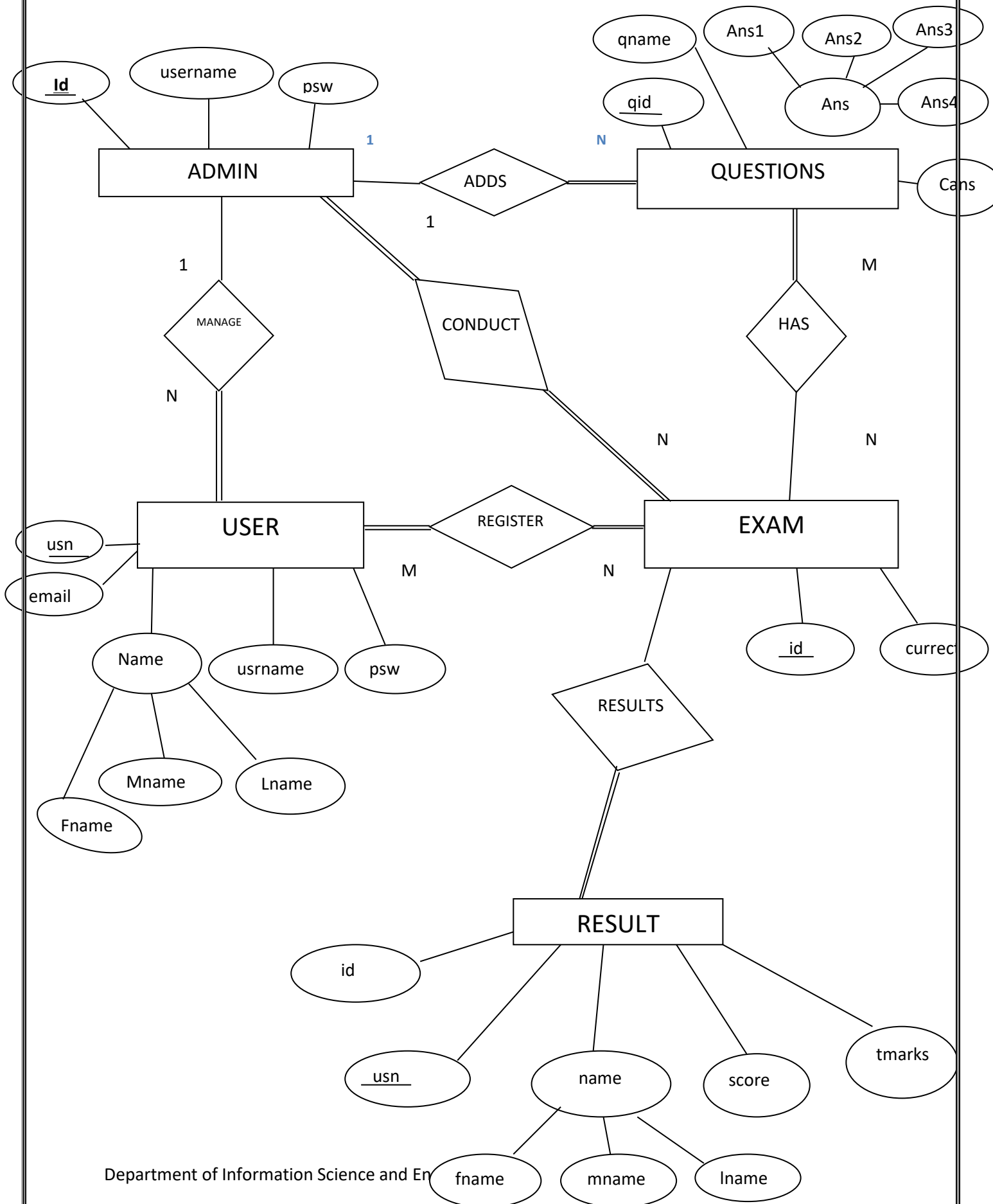
### **Server:**

Node js Express Server

### **Querying language:**

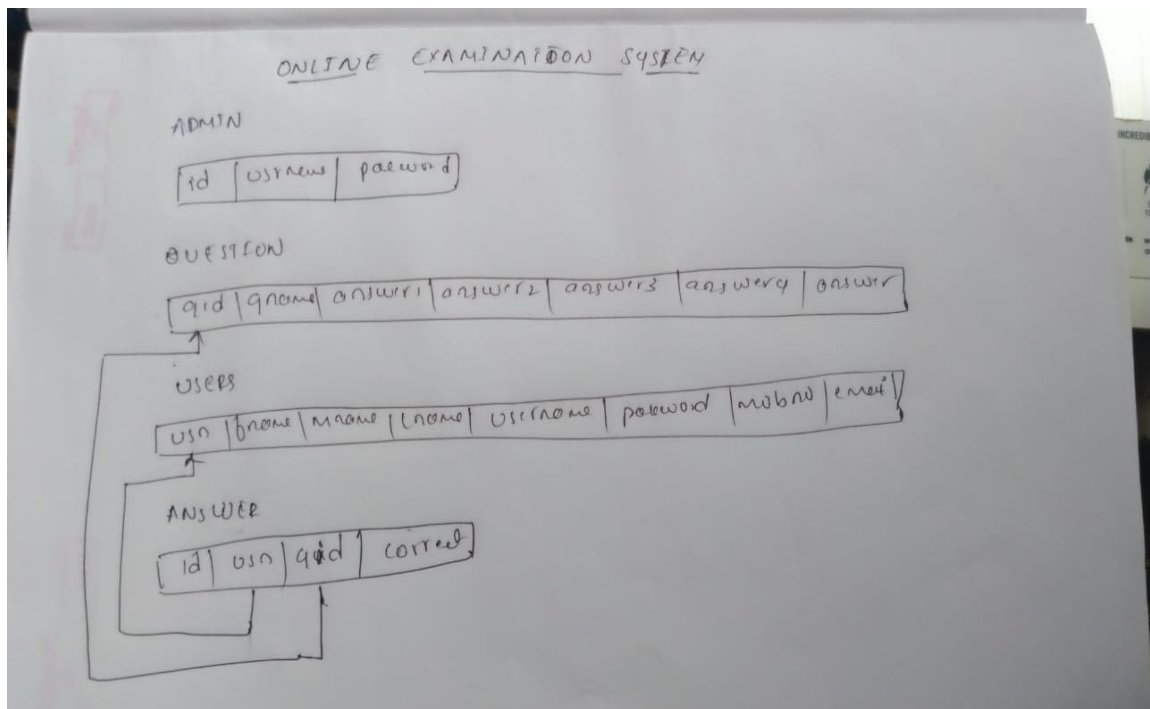
Sql

### 3 E.R Diagram for Online Examination System





### 3. Schema diagram of online examination system



## 5.Implementation

### 5.1 Implementation tools

- NodeJs, Express, HTML, CSS, Bootstrap, EJS and MySql
- IDE (any we used IDE ex: sublime, vs code editor)
- MySql Workbench for easier access with MySql database.

### 5.2 RDBMS TABLES AND DESRIPTION:

```
Tables_in_exam
admin
answer
question
users
```

#### Admin Table:

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	
username	varchar(20)	YES		NULL	
password	varchar(20)	YES		NULL	

3 rows in set (0.01 sec)

#### Users table:

Field	Type	Null	Key	Default	Extra
usn	varchar(30)	NO	PRI	NULL	
fname	varchar(30)	NO		NULL	
mname	varchar(30)	YES		NULL	
lname	varchar(40)	YES		NULL	
username	varchar(20)	YES		NULL	
password	varchar(30)	YES		NULL	
mbln	varchar(10)	YES		NULL	
email	varchar(50)	YES		NULL	

8 rows in set (0.00 sec)

**Question table:**

Field	Type	Null	Key	Default	Extra
qid	int(11)	NO	PRI	NULL	
qname	varchar(300)	NO		NULL	
answer1	varchar(200)	NO		NULL	
answer2	varchar(200)	NO		NULL	
answer3	varchar(200)	NO		NULL	
answer4	varchar(200)	NO		NULL	
answer	int(4)	NO		NULL	

7 rows in set (0.01 sec)

**Answer table:**

Field	Type	Null	Key	Default	Extra
qid	int(11)	NO	PRI	NULL	
qname	varchar(300)	NO		NULL	
answer1	varchar(200)	NO		NULL	
answer2	varchar(200)	NO		NULL	
answer3	varchar(200)	NO		NULL	
answer4	varchar(200)	NO		NULL	
answer	int(4)	NO		NULL	

7 rows in set (0.00 sec)

**5.3 Code snippets:****Sql Tables:**

```
mysql> create table admin(id int(20) not null,username varchar(20),password varchar(20),primary key(id));
```

Query OK, 0 rows affected (0.08 sec)

```
mysql> create table question(qid int(20) not null,qname varchar(300) not null,answer1 varchar(300) not null,answer2 varchar(300) not null,answer3 varchar(300) not null,answer4 varchar(300) not null,answer int(4) not null,primary key(qid));
```

ot null,answer4 varchar(300) not null,answer int(4) not null,primary key(qid));

Query OK, 0 rows affected, 5 warnings (0.17 sec)

**mysql>** create table users(usn varchar(30) not null,fname varchar(40) not null,mname varchar(30),lname varchar(30),username varchar(30) not null,password varchar(30) not null,mblno varchar(10) not null,email varchar(50) not null,primary key(usn));

Query OK, 0 rows affected (0.14 sec)

**mysql>** create table answer(id int(20) not null auto\_increment,usn varchar(20) not null,qid int(20) not null,correct int(20) not null,primary key(id));

Query OK, 0 rows affected (0.11 sec)

**mysql>** alter table answer add constraint foreign key(usn) references users(usn) on delete cascade;

Query OK, 0 rows affected (0.35 sec)

Records: 0 Duplicates: 0 Warnings: 0

**mysql>** alter table answer add constraint foreign key(qid) references question(qid) on delete cascade;

Query OK, 0 rows affected (0.19 sec)

Records: 0 Duplicates: 0 Warnings: 0

## 6.SOURCE CODE

### BACKEND:

```
const express = require('express'), /* express import */

app = express(),

port = 3000;

bodyParser = require('body-parser');

var session = require('express-session');

/*****DATABASE CONNECTION START FROM HERE
*****/

const mysql = require('mysql');

const connection = mysql.createConnection({

  host: 'localhost',

  user: 'root',

  password: 'dp123',

  database: 'exam'

});

app.use(session({

  secret: 'secret',

  resave: true,

  saveUninitialized: true

}));

connection.connect();

/*****DATABASE CONNECTION COMPLETED HERE
*****/
```

```
app.use(bodyParser.urlencoded({ extended: true }));
```

```
app.use(express.static("bootstrap"));
```

```
app.set("view engine", "ejs");
```

## FRONT END:

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <title></title>
```

```
</head>
```

```
    <link rel="stylesheet" type="text/css" href="stylesheet/css/bootstrap.css">
```

```
<link rel="stylesheet" type="text/css" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css">
```

```
<body style="background-color: #cccccc">
```

```
<style type="text/css">
```

```
    body,html{
```

```
        background-image: url("https://images.unsplash.com/photo-1549122728-f519709caa9c?ixlib=rb-1.2.1&auto=format&fit=crop&w=925&q=80");
```

```
        /* width: 100%;
```

```
        height: 100%;*/
```

```
        background-size: cover;
```

```
        background-attachment: fixed;
```

```
        color: white;
```

```
    }
```

```
</style>
```

```
<nav class="navbar">
```

<h3> Online Examination System </h3>

<a href="handle">Admin</a>

</nav>

<div class="line" style="background-color: white; width: 100%; height: 5px;"></div><br>

<form action="/login" method="POST" style="margin-left: 30%;">

<div class="container content\_container login">

<div class="row">

<div class="col-sm-6 col-sm-offset-3 col-xs-12 col-xs-offset-0">

<form name="login\_form" id="login\_form" method="post"  
action="https://account.genndi.com/login" class="form\_login">

<div class="white\_block">

<header class="clearfix">

<h3 class="pull-left"><u>Plase Sign In Here</u></h3>

</header>

<div class="block-inner">

<div class="form-group">

<label>

Username

</label>

<i class="fa fa-user"></i> <input type="text" name="username" class="required form-control"  
value="" placeholder="Enter your username..." required>

</div>

<div class="form-group w\_margin">

<label>

Password

</label>

<i class="fa fa-key"></i> <input name="password" type="password" class="required form-  
control" style="" placeholder="Enter your password..." required>

</div>

<div class="form-group w\_margin">

```
<label>

    Enter USN

</label>

<i class="fa fa-bell" aria-hidden="true"></i><input name="usn" type="password"
class="required form-control" style="" placeholder="Enter your usn" required>

</div>

<button type="submit" class="btn btn-black_new btn-large btn-block btn-error text-uppercase "
id="submit_login" style="background-color: black;color: white;">

    <span class="btn-title">Sign in</span>

    <span id="countdown-wrapper" class="circle-outline" style="display: none;">

        <span id="countdown">3</span>

    </span>

</button>

</div>

</div>

<a href="signup" class="pull-left" style="color: white;">

    <b> Create a new account </b>

</a>

</form>

</div>

</div>

</div>

</form>

</body>

</html>
```



## 7. Testing

### 7.1 Forms and Validation (UI Testing)

- Forms are used in Sign Up, Login, submit answer
- Each form field is validated accordingly  
Eg. EmailID should be a valid one. Mobile number should be 10 digit and it should not start with 0.
- Input fields which are made REQUIRED in HTML are mandatory fields.

### 7.2 Test Cases (Both Success and Failures)

- **Success:** When data provided is valid according to the field condition given. Eg. [Darshanhegde5@gmail.com](mailto:Darshanhegde5@gmail.com) is accepted.
- **Failures:** When data provided is invalid or incorrect according to the field validation given. Eg. 'Prabhu' in email field would be invalid.

### 7.3 System Testing

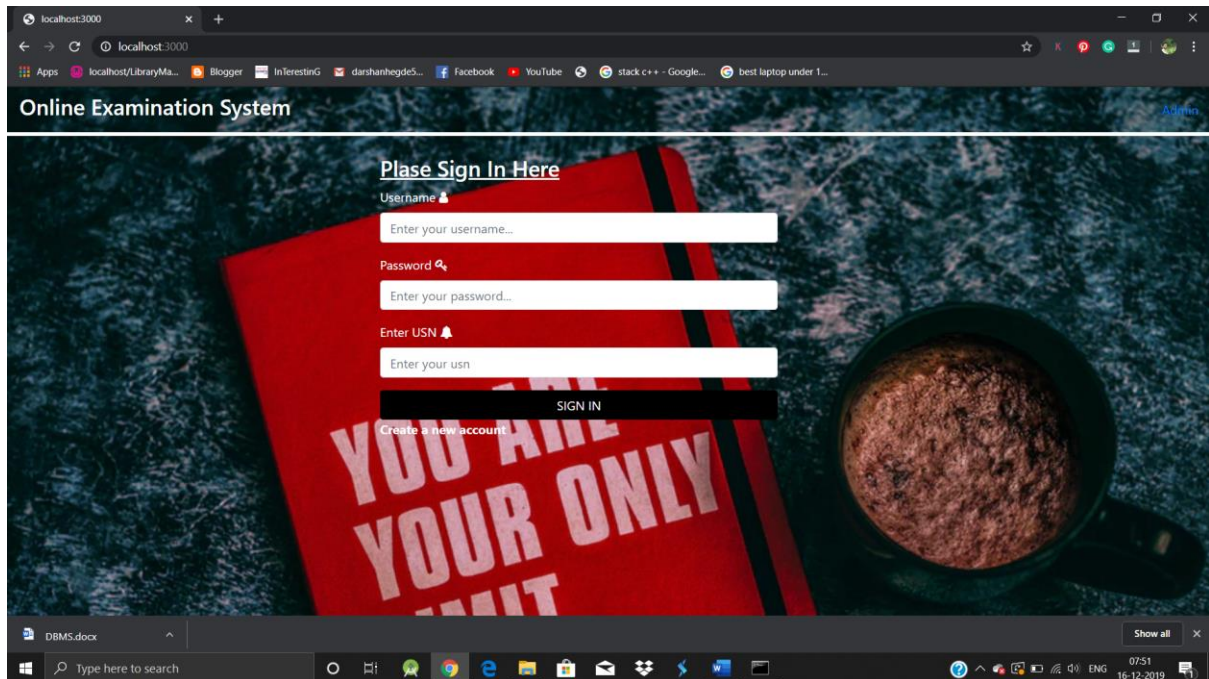
- The project runs on <http://127.0.0.1:3000>
- MySql server which is also hosted locally in the computer is connected by NodeJs (session establishment).
- It is tested on Windows, Ubuntu and Mac systems.

## 8. Conclusion

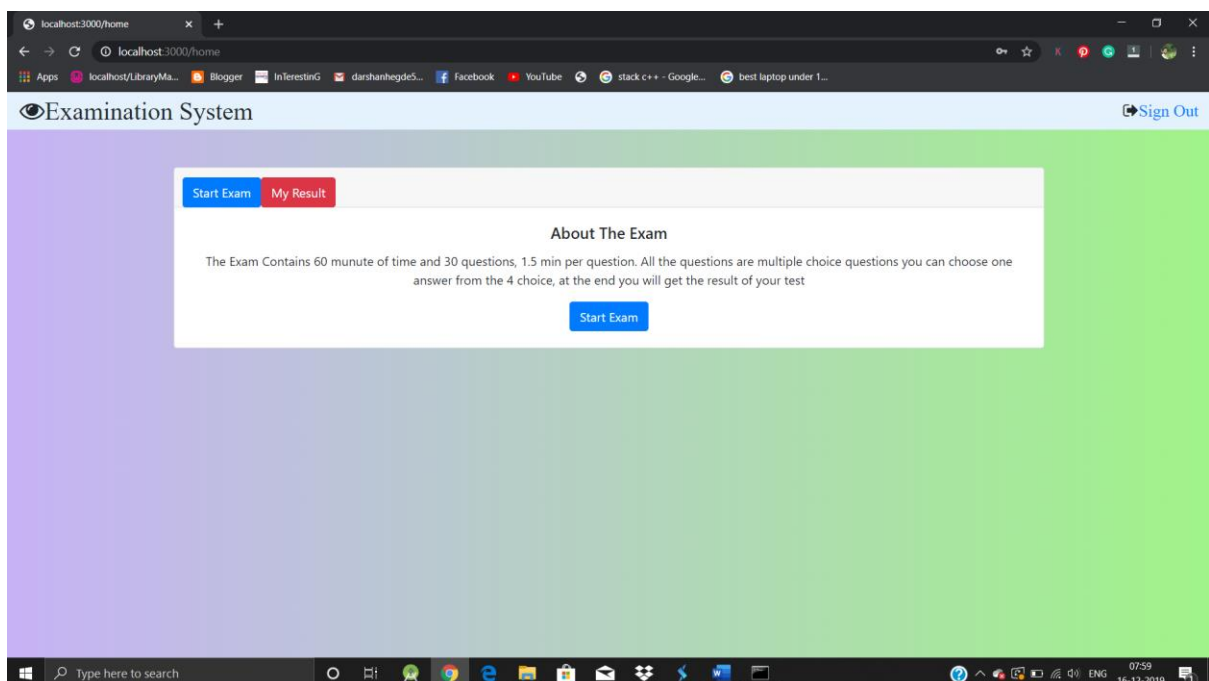
- This web application provides facility to conduct online examination worldwide. It saves a time as it allow number of students to give the exams at a time and display the result as the test gets over so no need to wait for the result it is automatically generated.
- Admin has to rights to add, delete, modify the questions. And they have a view of all operations that are available in this project.

## 9.ScreenShots

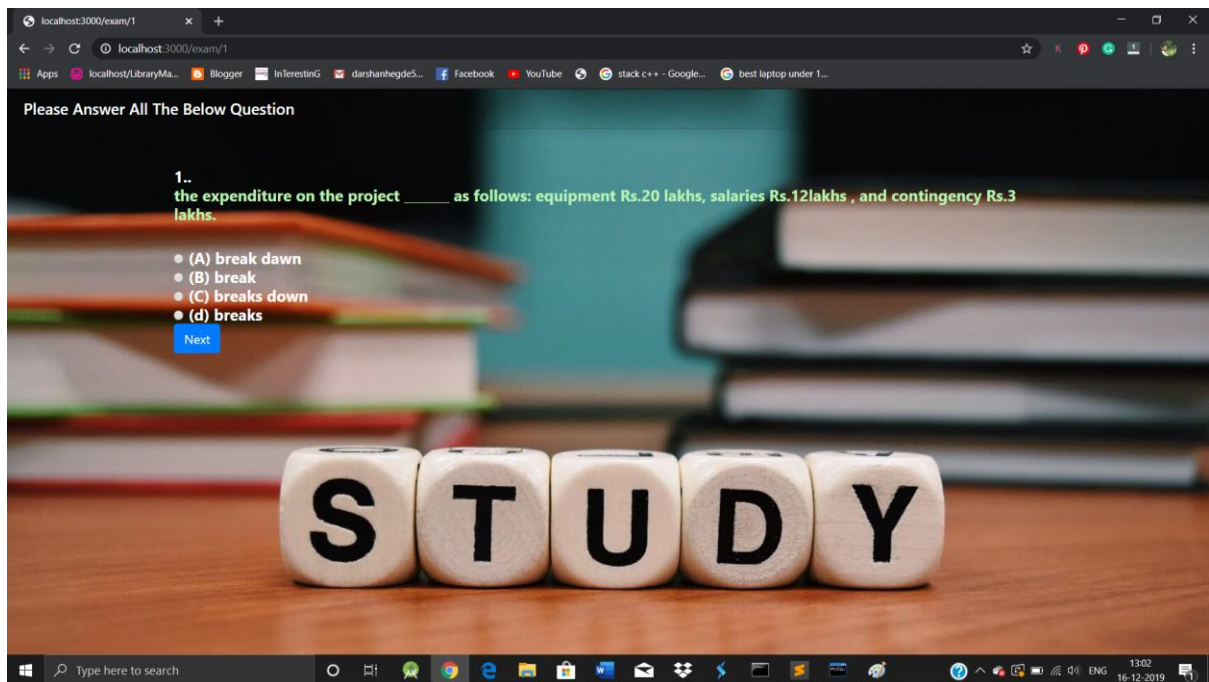
### Login Page:



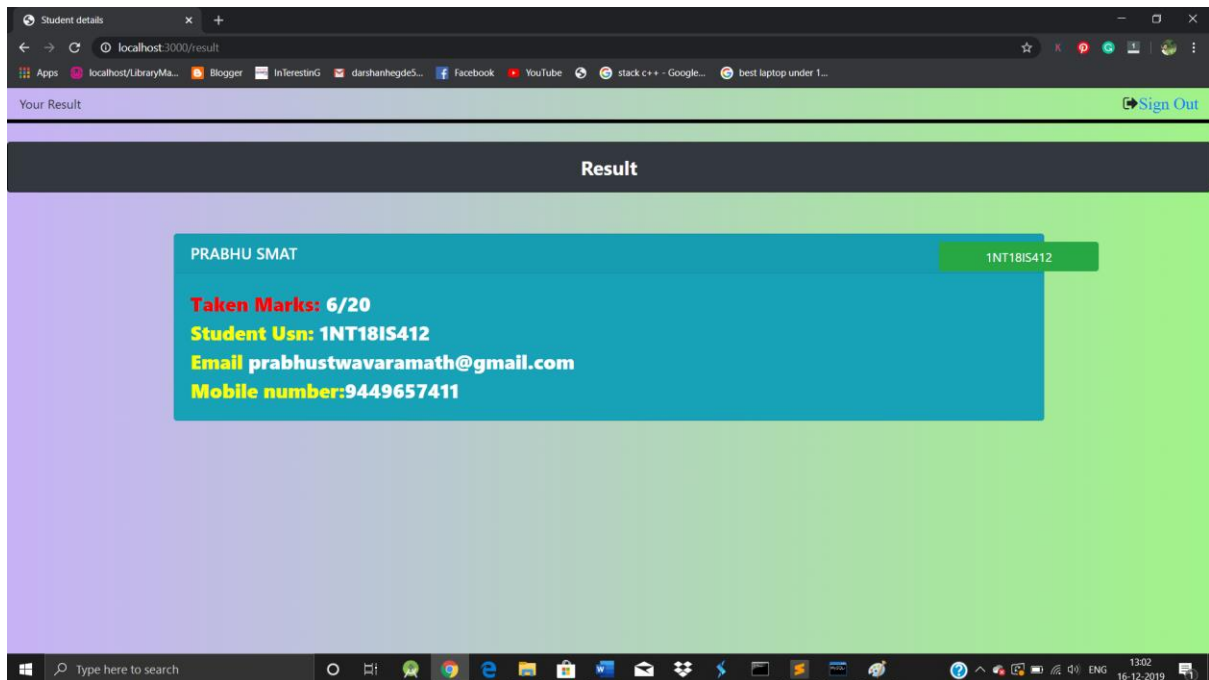
### Exam Home:



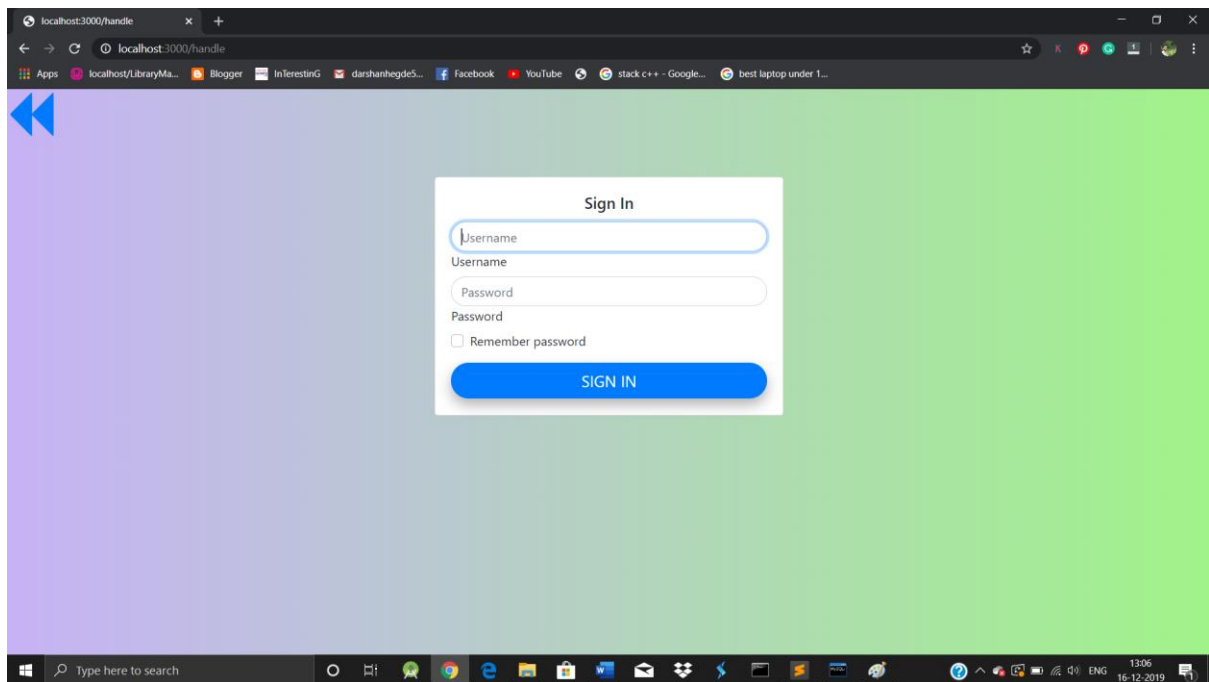
## Exam:



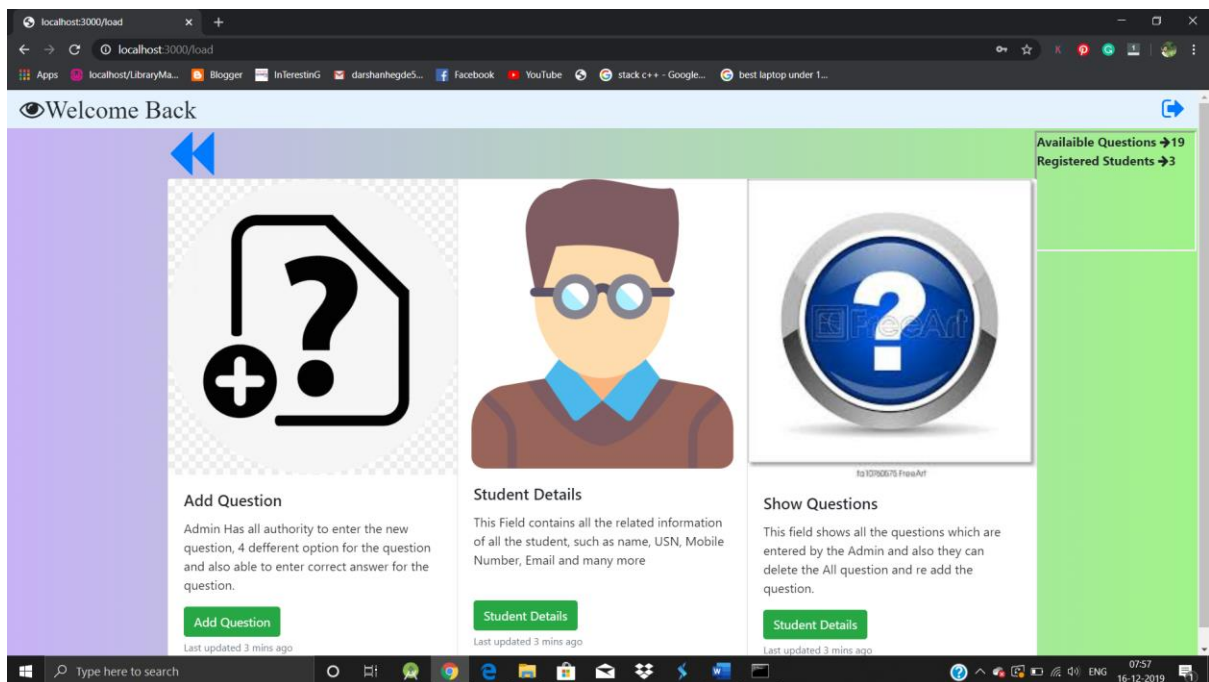
## Student result View:



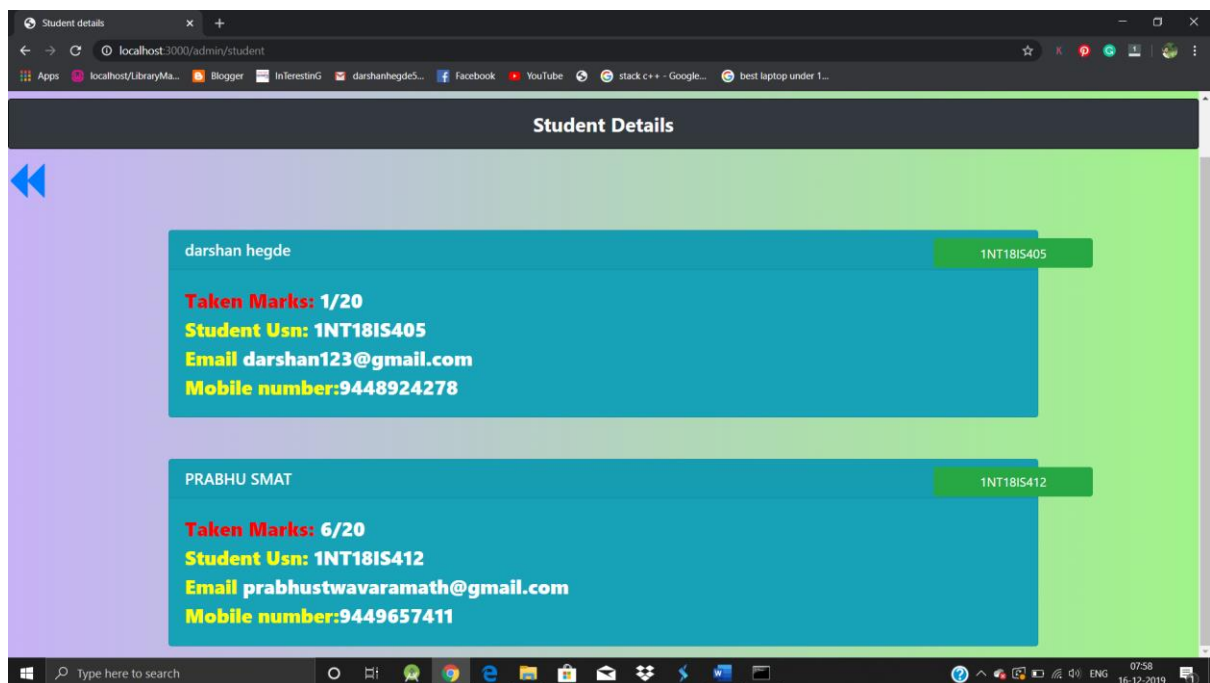
## Admin Login:



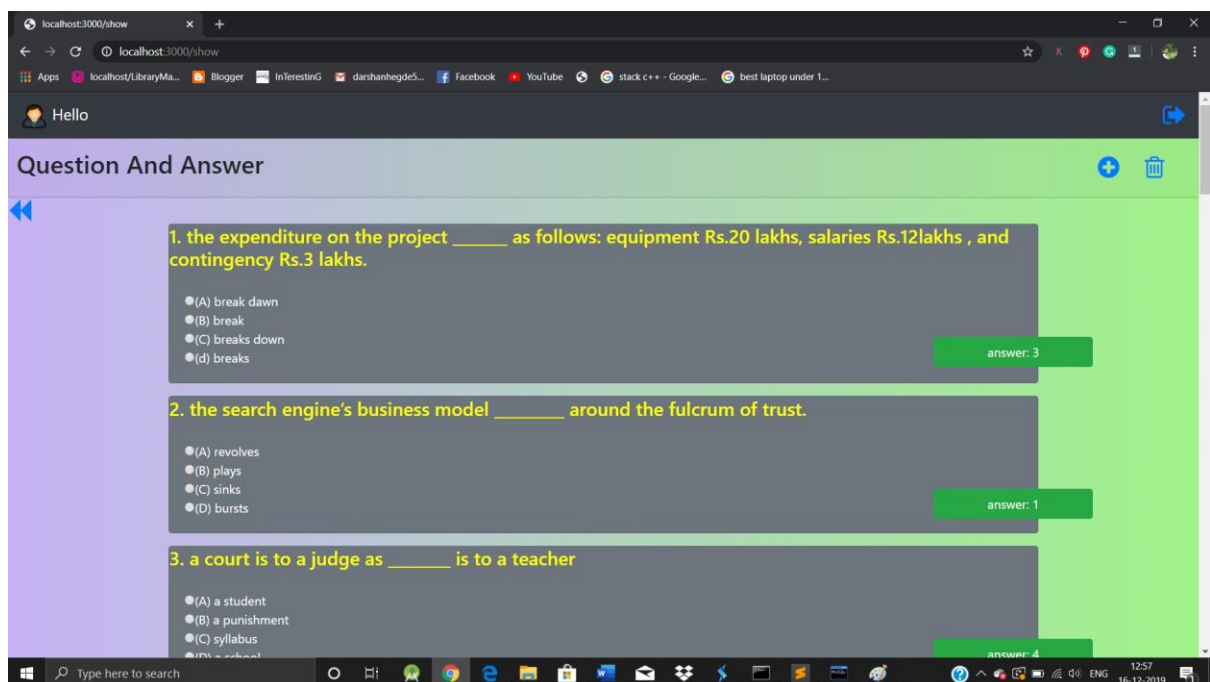
## Admin Home:



## Admin Student Details:



## Admin view of Question and answers:





## Add question:

The screenshot shows a web browser window at localhost:3000/admin. The page has a green header with a user icon and a blue arrow. The main content area is light green and contains a form titled "Enter Question And Answer Below" with a pencil icon. The form includes several input fields: "Question Number" (with a dropdown arrow), "Question Name", "First Answer", "Second Answer", "Third Answer", "Fourth Answer", and "Correct Answer". There are also "submit" and "Show Question" buttons. A box in the top right corner displays "Available Questions → 20" and "Registered Students → 3". The Windows taskbar at the bottom shows the time as 12:58 on 16-12-2019.

## Delete question:

The screenshot shows a web browser window at localhost:3000/delete. The page has a green header with a blue plus icon. The main content area is light green and contains a list of three questions, each with a red trash icon to its left. The questions are:
 

1. the expenditure on the project \_\_\_\_\_ as follows: equipment Rs.20 lakhs, salaries Rs.12lakhs , and contingency Rs.3 lakhs.
  - (A) break dawn
  - (B) break
  - (C) breaks down
  - (d) breaks
2. the search engine's business model \_\_\_\_\_ around the fulcrum of trust.
  - (A) revolves
  - (B) plays
  - (C) sinks
  - (D) bursts
3. a court is to a judge as \_\_\_\_\_ is to a teacher
  - (A) a student
  - (B) a punishment
  - (C) a syllabus

 The Windows taskbar at the bottom shows the time as 12:59 on 16-12-2019.