DECLARATION

We, SHIV SINGH, SAKSHAM JANARDAN, SHIKHAR KANAUJIA hereby declare that this mini project study and project report titled “ONLINE EXAMINATION SYSTEM” has been prepared by us under the supervision of Mr. VINAYAK SHUKLA, Assistant Professor, BBDITM affiliated to Dr. A P J Abdul Kalam Technical University, in the partial fulfillment for the award of the Bachelors in Technology during the year 2023-2024.

We hereby also declare that this Mini Project Report has not been submitted to any other university for the award of any other degree, fellowship, associateship or any other similar title.

Student’s names

Date : 15/12/2023

Shiv Singh (2100541530041)

Saksham Janardan (2100541530038)

Place : BBDITM Lucknow

Shikhar kanaujia (2200541539005)

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We would like to express my sincere gratitude to Dr. Anurag Tiwari, Head of Department, CSE, BBDITM, Lucknow for his active support and guidance during the course of my studies in this Institute.

We are also thankful to Mr. Vinayak Shukla , Mini Project/ Internship Coordinator Ms. Padmini Mishra for kind cooperation, help, guidance, encouragement supervision and feedbacks which enabled me to prepare a well-executed report.

Then we specially want to acknowledge our college BBDITM and respected professors for their tremendous support , guidance and patience. Without their kind supervision, preparing this report would be very difficult. We are also thankful to them for providing us all the relevant and available information to have a clear concept on the subjects. They provide us the guidance and counseling during my entire mini project program. Their continuous and well-thought feedback enabled us to make this report a comprehensive one.

We take this opportunity to extend thanks to all who has helped us and encouraged us all throughout in bringing the best of this project.

Student's names

Shiv Singh (2100541530041)

Saksham Janardan (2100541530038)

Shikhar kanaujia (2200541539005)

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ABSTRACT

Online Exam System for introduction to management is a website that is designed and developed for students and lecturers. The system helps students to take examination online. It helps also lecturers to upload the questions and answers in the database and they can see the students who fail or pass the exam. The software is developed using Java programming language and database. In the software we can register as a user and users are of two categories which are Lecturer and Student. Before using the system both users need to register and after that they must login with their username and password in order to enter the system.

The online examination system for introduction to management is constituted of different components for instance login function, insertion of data in the database, extraction of data from the database. The problem with the current system is that students take their exam manually. This outdated system will take long time utilization; the manual procedure used for conducting exam is time consuming process. More time being used for lecturers to bring the questions papers and answer sheets and also more time is needed for students in order to write their exam..

This Online Examination System is a software solution, which allows any industry or institute to arrange, conduct and manage examinations via an online environment. It can be done through the Internet/Intranet and/ Local Area Network environments. Some of the problems faced during manual examination systems are the delays occured in result processing, filing poses a problem, filtering of records is difficult. The chance of loss of records is high also record searching is difficult. Maintenance of the system is also very difficult and takes lot of time and effort. Online examination is one of the crucial parts for online education system. It is efficient, fast enough and reduces the large amount of material resource. An examination system is developed based on the web. This paper describes the principle of the system, presents the main functions of the system, analyzes the auto-generating test paper algorithm, and discusses the security of the system.

Programmers and opportunities:

The Institute combines pioneering research with top class education. An innovative curriculum allows the student flexibility in selecting courses and projects. Students, even at the undergraduate level, get to participate in on-going research and technology development - an opportunity unprecedented in India. As a result, a vibrant undergraduate programmer -co exists with a strong postgraduate programmer.

Methodology:

The methodology chosen to develop this system is waterfall model approach. I opted for this method because I found that it is the best for my project where the stages involved can assist my level of progress. Many developers prefer waterfall model and widely use it as a development strategy. Waterfall model approach is chosen because the approach allows the development of the system to be revised after the stages is finished. Once the stages are not satisfied, then going back to the previous stages can be considered necessary to add or modify any features.

Key parts of the report:

The system will allow students to register and take the exam. It enables also lecturers to perform many tasks. The system has several functions. The users will do the registration before using the system. The lecturers can upload questions and answers; he can view the list of all students who take the exam. The lecturers can send emails. Once logging, the students can choose the subject and take the exam. After finishing using the software the users have a logout function that allows them to sign out. This is because the system wants to ensure no external users can exploit the system.

Benefits to the Institution through your report:

A good examination management system, provides institutions with the mechanism to easily create a streamlined exam pattern that is the most conducive for the academic development of students. It also benefits faculty by :

- Eliminating overwhelm.
- Shifting administration to a single, central system in order to simplify execution of examination processes.
- Significantly reduces time spent fulfilling pre-prep, during and after examinations processes.
- Simplifying exam scheduling.
- Providing accuracy and cuts unreliability.

1. INTRODUCTION

1.1. Objective

1.1.1) To enhance the accessibility of the exams

The main objective of the online examination system is to provide equal opportunity to every student who is not going to the exam due to the lack of geographical areas.

However, Online examinations use the same for the assessment of students' yearly learning. As a result, candidates from remote locations can participate in examinations without physically being present, enhancing inclusion and facilitating access to education.

1.1.2) Time and Cost Efficiency

Conducting exams online eliminates the need for costly logistics and paperwork, leading to significant cost and time savings. It simplifies the examination process by automating tasks such as question paper generation, grading, and result processing, reducing administrative burdens on educational institutions.

1.1.3) To Secure the Examination and to maintain Integrity

Another main aspect of online examinations is to maintain the integrity of examinations. Keeping integrity means completing a secure examination in academic institutions. With the help of online proctoring software, the system provides robust security measures that prevent cheating and ensure the fairness of the examination.

Features like randomized question order, time limits, and anti-plagiarism algorithms help maintain the authenticity and reliability of assessments. Also, the Implementation of a per-question-timer reduces the cheating premises.

1.1.4) Real-time Analytics and Performance Tracking

Examination systems provide valuable insight into students' performance. Administrators or Educators can access detailed analytics and reports of students' exam report cards. Where teachers can use these report cards and help students to increase their performance in weak subjects.

So, after identifying the mistakes or weak subjects, teachers can help students to create a personalized model for individuals. It improves overall problem-solving skills.

1.1.5) To Create Exam a Flexible and Adaptable

The software offers flexibility in terms of scheduling exams and accommodating various time zones and individual preferences. It allows students to take assessments at their convenience. It creates a more relaxed and focused test-taking environment.

This software offers companies or organizations to hire employees with online assessments. It increases the trust and integrity of the companies.

1.2. Area chosen for study

The choice of the area for a study in an online examination system project depends on various factors, including the goals and objectives of the project, the target audience, and the specific problems or challenges you aim to address. Here are some potential areas you could consider:

a) User Experience (UX) Design:

- Focus on creating an intuitive and user-friendly interface for both students and instructors.
- Evaluate the accessibility and inclusivity of the platform to ensure that it caters to a diverse user base.

b) Security and Authentication:

- Explore the security measures implemented to prevent cheating and unauthorized access.
- Study authentication methods and encryption techniques to ensure the confidentiality and integrity of exam data.

c) Scalability and Performance:

- Examine the system's ability to handle a large number of concurrent users during peak times.
- Evaluate the platform's performance in terms of response times and resource utilization.

d) Adaptive Testing and Analytics:

- Study the incorporation of adaptive testing techniques that adjust the difficulty of questions based on the user's performance.
- Analyze the data analytics and reporting features for both students and administrators.

e) Integration with Learning Management Systems (LMS):

- Explore how well the online examination system integrates with existing learning platforms and management systems.
- Study the compatibility with various file formats for content upload and download.

f) Feedback and Review Mechanisms:

- Examine the system's ability to provide instant feedback to students upon completion of exams.
- Study the review process, including the ability to revisit and understand past exam results.

g) Support and Training:

- Evaluate the availability and effectiveness of user support.
- Study the training materials and resources provided for both students and instructors.

1.3. Scope of the study

This website provides facility to institutes to conduct online exams and maintaining the records of users by providing authorized entry. Users can register as Faculty / Student and wait for the admin to send a notification email. User can then login with the valid username and password and can carry out their respective tasks.

- ***Maintaining records of users (Faculties and Students)***
  Admin can add/ delete a particular user who registers on site and can view the activities of users i.e. how many tests are added by a particular faculty, how many tests are given by particular student and view their respective scores.

- ***Add test in particular course (Faculty)***
  Faculty can add time limited tests in a particular course by adding questions in the same, can view which student has attempted the tests and view their respective scores.

- ***Attempt test (Student)***
  Student can attempt test added by faculty and get their score then and there. They can also get the test review i.e. answer explanation of each question in test.

As this is generic software it can be used by a wide variety of Examination to automate the process of manually maintaining the records related to the subject of maintaining the entries and updating these records that too in a single click. It is a cost effective and popular means of mass evaluation system. The questions are shuffled in a random order so that possibilities for getting questions in the same order for the students who are beside is very less. The candidate can login through the client computers with their roll number given to them and can take the exam.

1.4. Problem Statement

The problem with the current system is that students take their exam manually. This outdated system will take long time utilization; the manual procedure used for conducting exam is time consuming process. More time being used for lecturers to bring the questions papers and answer sheets and also more time is needed for students in order to write their exam, student are not satisfy with the current system of taking the multiple choice examination. The no accuracy with current system when student did not use a 2b pencil student are losing they are mark. Using the manual procedure of conducting examination we not saving the environment by using more paper, we are in the world where really need to take care of the environment.

Since the traditional have many drawbacks such as time consuming, Difficulty of analyzing the test manually, more observers are required to take exam of many students, Results are not accurate since calculations is done manually, the chance of losing exam's result is higher in current systems, checking of result is time consuming since it done manually, Limitation of no of student 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, and this make it an easier way to give exam teachers can add theirs exams rules, and student can give exam in a totally automated system.

1.5. Literature Review/ Theoretical Background

Computerized systems have been increasing in education nowadays. Information Technology plays a very important role in education. Computers have made dramatic changes in the learning system. Information technology enables education institutions to save space and time, and allow the delivery of education services with easiness, anywhere, and anytime. For instance physical libraries are replaced by online libraries available to anyone; anywhere in the world students can interact with lecturers online whether live or via video. With computer software, we can be able to have access to huge databases of information. This gives fundamental change to the education system. Information technology makes the exchanges of information fast and easily.

With the growth of IT a lot of data can be found in online library. We don t need to have a physical library in order to read books. Computers are a powerful tool used in all aspects of our studies. We use multimedia technologies to convey ideas, build projects. Information technology enables students to do distance learning, method of learning at a distance instead of learning in a classroom.

Communications technologies create possibilities, both individual and institutional, for an unprecedented expansion of home based learning, much of it part-time. Information technology provides systems that allow students to perform many tasks in an automatic way and not manually. Students can take exam using computerized system; they don’t need paper-based exam. They save time and money when using computer system in their studies.

2.SYSTEM SPECIFICATIONS

HARDWARE AND SOFTWARE SPECIFICATION

1) Hardware Specification :-

- **RAM** : 512 MB RAM
- **Processor** : Pentium IV Processor
- **Hard disk** : 40 GB HDD
- **Monitor** : Color Monitor
- **Keyboard** : Keyboard, Mouse

2) Software Specification:-

- **Language** : Python 3 (Any version)
- **Any text editor** : PyCharm , Notepad++, etc.
- **Operating System** : Windows 10, Windows XP, Windows7, Linux
- **Database** : Dbsqlite 3
- **Browser** : Any of Mozilla, Opera, Chrome etc
- **Framework** : Django
- **Scripting Language Enable** : Javascript

3.TOOLS AND TECHNOLOGY

3.1) HTML :-

The **Hyper Text Markup Language** or **HTML** is the standard markup language for documents designed to be displayed in a web browser. It defines the meaning and structure of web content. It is often assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes, and other items. HTML elements are delineated by *tags*, written using angle brackets.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages. The inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.A form of HTML, known as HTML5, is used to display video and audio, primarily using the <**canvas**> element, together with JavaScript.

3.2) CSS :-

Cascading Style Sheets (**CSS**) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the

structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device. The CSS specifications are maintained by the World Wide Web Consortium (W3C).

3.3) BOOTSTRAP 5 :-

Bootstrap is an HTML, CSS and JS library that focuses on simplifying the development of informative web pages (as opposed to web applications). The primary purpose of adding it to a web project is to apply Bootstrap's choices of colour, size, font and layout to that project. As such, the primary factor is whether the developers in charge find those choices to their liking. Once added to a project, Bootstrap provides basic style definitions for all HTML elements. The result is a uniform appearance for prose, tables and form elements across web browsers.

Bootstrap also comes with several JavaScript components which do not require other libraries like jQuery. They provide additional user interface elements such as dialog boxes, tooltips, progress bars, navigation drop-downs, and carousels. Each Bootstrap component consists of an HTML structure, CSS declarations, and in some cases accompanying JavaScript code.

They also extend the functionality of some existing interface elements, including for example an auto-complete function for input fields. The most prominent components of Bootstrap are its layout components, as they affect an entire web page. The basic layout component is called "Container", as every other element in the page is placed in it. Developers can choose between a fixed-width container and a fluid-width container.

3.4) PYTHON

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability

and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

Instead, when the interpreter discovers an error, it raises an exception. When the program doesn't catch the exception, the interpreter prints a stack trace. A source level debugger allows inspection of local and global variables, evaluation of arbitrary expressions, setting breakpoints, stepping through the code a line at a time, and so on. The debugger is written in Python itself, testifying to Python's introspective power. On the other hand, often the quickest way to debug a program is to add a few print statements to the source: the fast edit-test-debug cycle makes this simple approach very effective.

3.5) Django :-

Django is a robust and versatile web framework that simplifies the development of web applications using the Python programming language. Adhering to the Model-View-Template (MVT) architectural pattern, Django streamlines the creation of dynamic and data-driven websites. Its standout features include a powerful Object-Relational Mapping (ORM) system, which enables developers to interact with databases effortlessly, abstracting away the complexities of raw SQL queries. The framework boasts a user-friendly admin interface that can be easily customized, facilitating efficient database management through a web-based console.

With a declarative approach to URL routing and a built-in template engine, Django ensures clarity and ease in handling HTTP requests and dynamically generating HTML content. Security is a top priority, with Django incorporating safeguards against common web vulnerabilities like SQL injection and cross-site scripting. The framework also provides authentication and authorization mechanisms, making user management straightforward. Its middleware architecture allows the integration of global functionalities, and the modular design encourages the creation of reusable applications. Whether building content management systems, e-commerce platforms, or other web applications, Django stands out for its simplicity, flexibility, and scalability, making it a popular choice among developers.

4.MODULES

4.1) MODULE DESCRIPTION

• Login:

The ONLINE EXAMINATION SYSTEM first activates the login page. Here the user enters USER NAME AND PASSWORD and the management system starts authentication process in which the USER NAME AND PASSWORD is matched with the existing USER NAME AND PASSWORD in the database. If the password matches then it is allowed to the main page else it warns the user for invalid USER NAME AND PASSWORD.

After the successful authentication the management system activated menus. The activity log also prepared for failure and security There are two types of users using this software i.e., admin, student, faculties and staff.

• TEACHER:

In this module teacher create his/her account and if admin allow to teacher, then teacher have authority to add course, question and delete question and manage courses.

• STUDENT:

This module has software configuration that admin and students can access this module. Here admin performs certain operations like adding new bus's details. In this admin assigns tasks to employee according to their capabilities.

• Examination:

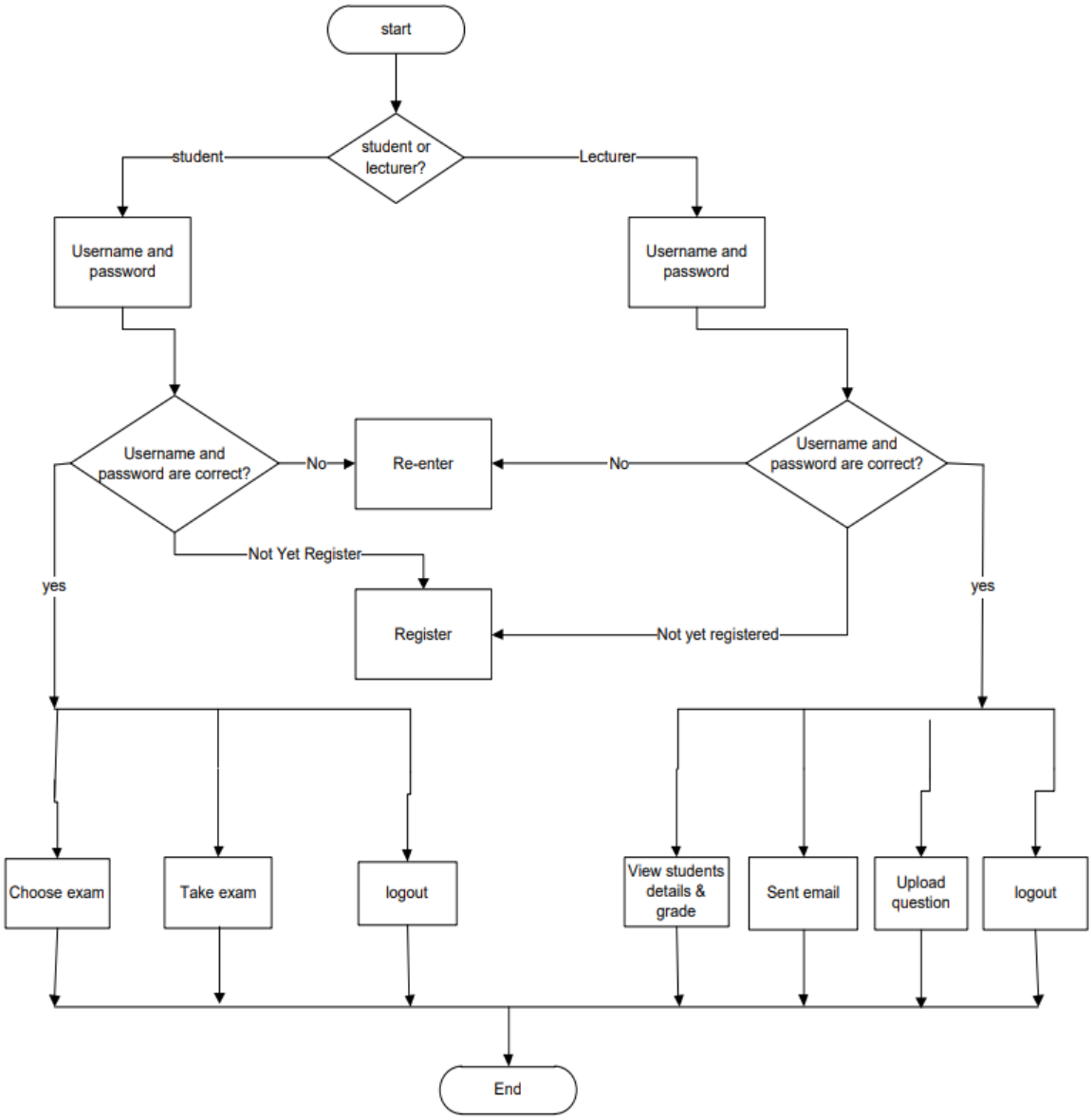
Questions are handled in this module by the admin and teacher when student solve the Examination from home.

• Student:

Student are handled in this module, student created his/her account, after that they attend exam online and see their result

4.2) System flow chart:-

A system flowchart is a valuable presentation aid because it shows how my system major components fit together and interact. In effect, it serves as a system roadmap.



4.3) SOURCE CODE :-

```
</head>
<body>
<div class="container-fluid">
    <div class="row bg-dark text-light justify-content-around sidebarmain">
        <div class="col-md-4 footercenterline1">
      <center>
        <i class="fa-solid fa-laptop-code" style="font-size: 40px;"></i>
      </center>
            <p class="footercontent">An online exam is a type of virtual exam undertaken on a computer device
        </div>
        <div class="col-md-4 footercenterline2">
            <div class="row">
                <h2 class="footeraddressheading">Get In Touch</h2>    
                <p class="footeraddress">
                    <i class="fa-solid fa-location-dot footericon"></i>    
                 Aliganj Lucknow - 226024<br />            Uttar Pradesh, INDIA</p>
            </div>
            <div class="row"><p>
                <i class="fa-solid fa-square-phone-flip footericon"></i> <span class="footeraddress">
                      (+91)7651912843<br />
                              (+91)7355297997
                </span>
                </p>
            </div>
            <div class="row"><p>
                <i class="fa-solid fa-at footericon"></i> <span class="footeraddress">
                      shivsingh@gmail.com<br />
                              sakshamjanardan25@gmail.com
                </span>
                </p>
            </div>
        </div>
        <div class="col-md-3">
```

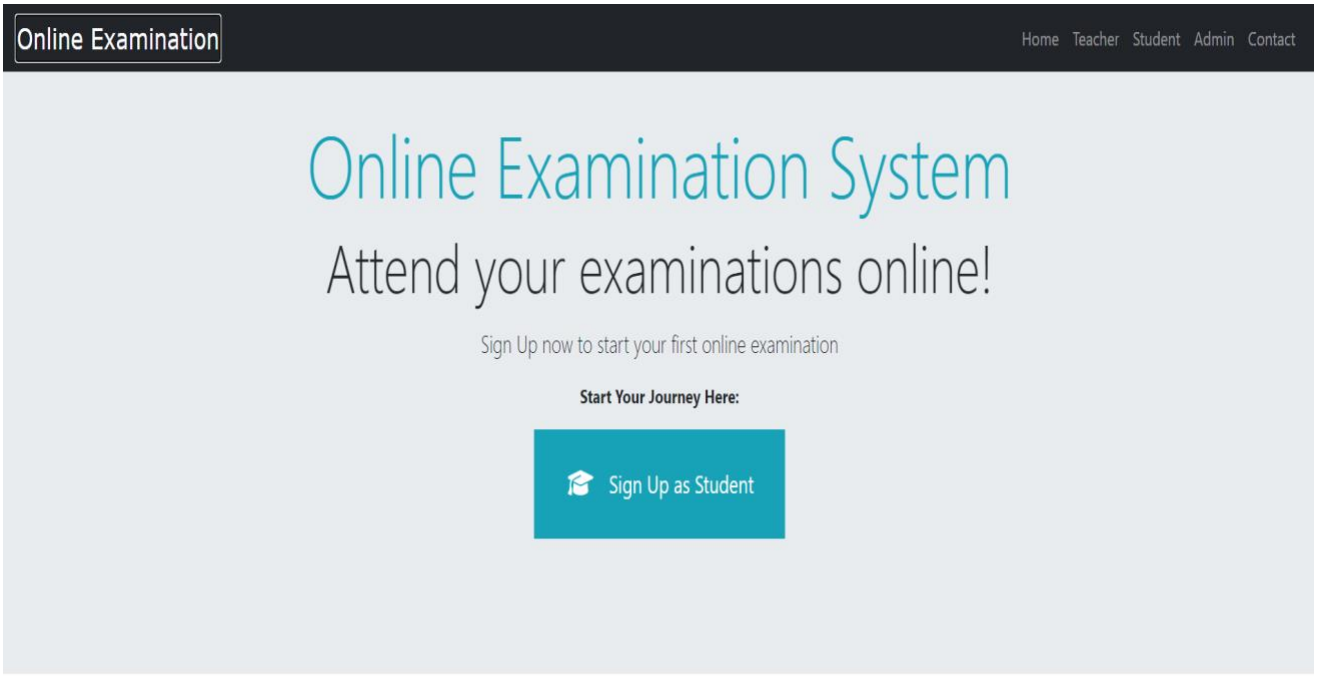
```
{% extends 'exam/adminbase.html' %}
{% load widget_tweaks %}
{% block content %}
<head>
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
  <style>
      <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
  a:link {
        text-decoration: none;
      }

  </style>
</head>
<h3 style="text-align:center">Please Enter Salary Amount:</h3>
<form method="POST" autocomplete="off" style="margin:100px;margin-top: 0px;">
    {%csrf_token%}
    <div class="form-group">
      <label for="salary">Salary (per month)</label>
      {% render_field teacherSalary.salary class="form-control" placeholder="3660" %}
    </div>


    <button type="submit" class="btn btn-success" style="border-radius: 0%;">Approve</button>
  </form>
<br><br><br>
```

```
<head>
  <link href="//netdna.bootstrapcdn.com/bootstrap/3.0.0/css/bootstra
  <script src="//netdna.bootstrapcdn.com/bootstrap/3.0.0/js/bootstra
  <script src="//code.jquery.com/jquery-1.11.1.min.js"></script>

  <style media="screen">
    a:link {
      text-decoration: none;
    }

    h6 {
      text-align: center;
    }

    .row {
      margin: 100px;
    }
  </style>
</head>
<br><br>
<div class="container">
  <div class="panel panel-primary">
    <div class="panel-heading">
      <h6 class="panel-title">My Marks</h6>
    </div>
    <table class="table table-hover table-bordered" id="dev-table">
      <thead>
        <tr>

          <th>Course</th>
          <th>Total Marks</th>
          <th>Number of Attempts</th>
          <th>Exam Date</th>
        </tr>
      </thead>
      {% for t in results %}
      <tr>
```

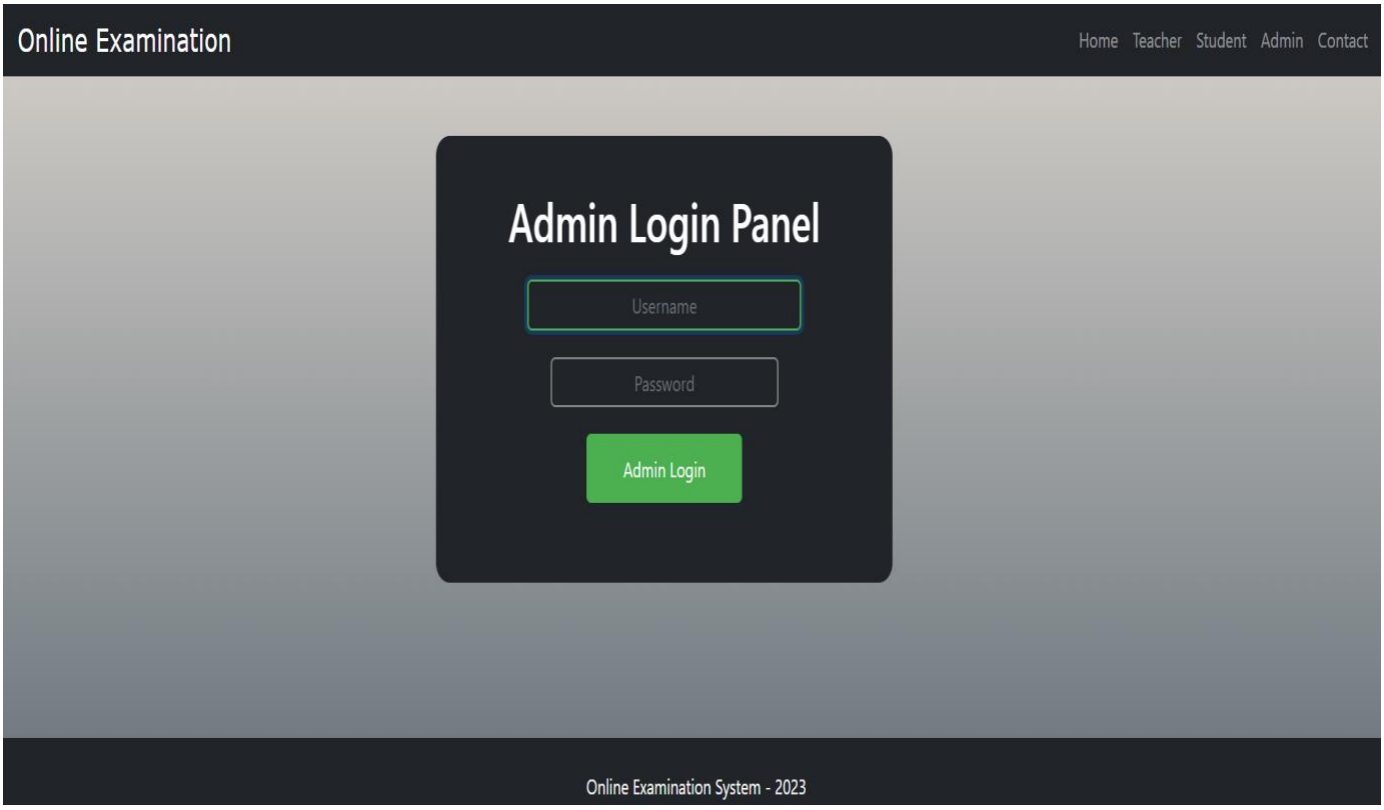
```
<script>
  function checkpass() {
        if (document.signup.pwd.value != document.signup.cpwd.value) {
            alert('Password Does Not Match')
            document.signup.cpwd.focus();
            return false;
        }
        return true;
    }
    function validpayment() {
        let fn = document.getElementById('fname').value;
        if (!(fn.match(/^[A-Za-z\s]+$/))) {
            alert("Enter Valid Your Name");
            return false;
        }
        let ln = document.getElementById('lname').value;
        if (!(ln.match(/^[A-Za-z\s]+$/))) {
            alert("Enter Valid Last Name");
            return false;
        }
        let con = document.getElementById('contact').value;
        if (con.length != 10) {
            alert("Contact Number Must be 10 digit");
            return false;
        }
    }
</script>

<br><br><br>
<div class="container">
  <h3 style="text-align: center;">Student Signup Form</h3>
<form method="POST" autocomplete="off" enctype="multipart/form-data">
    {% csrf_token %}

    <div class="form-row">
        <div class="form-group col-md-6">
```

5.RESULT

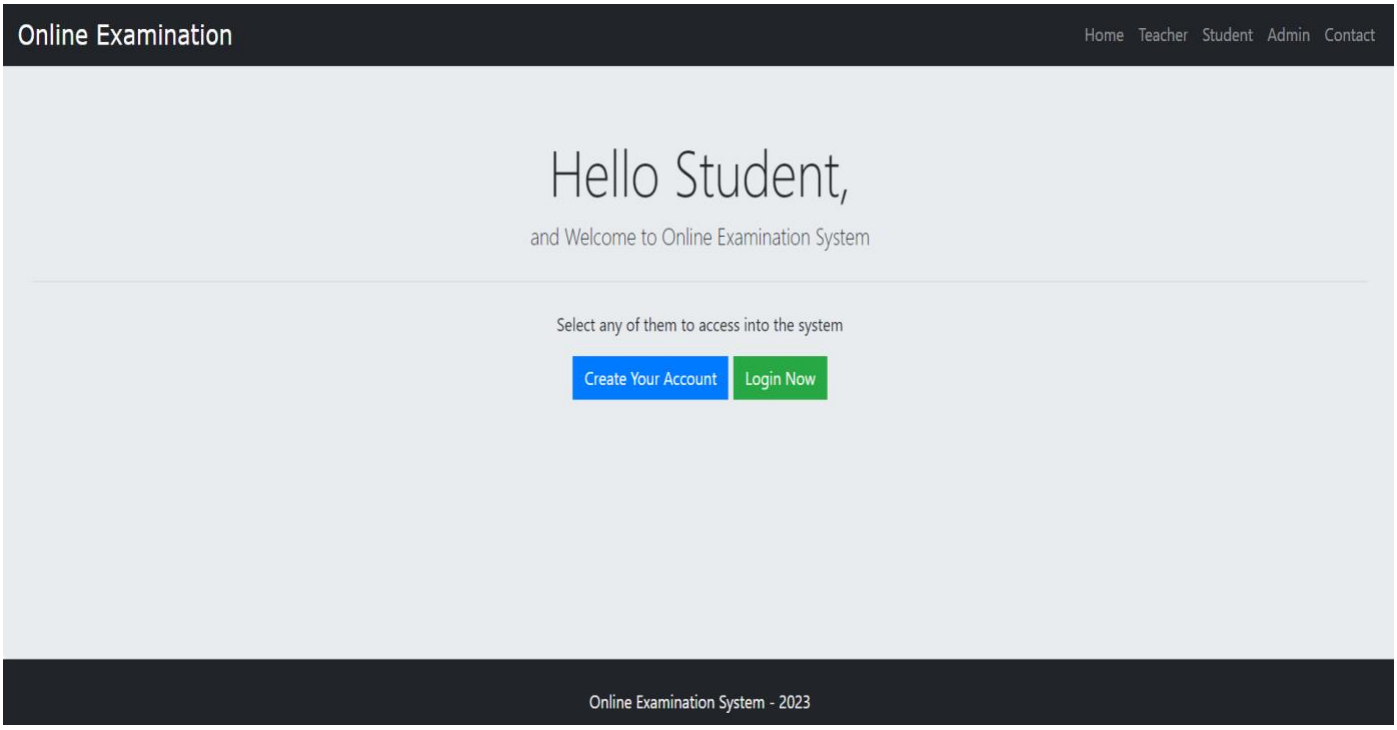
5.1) HOME PAGE



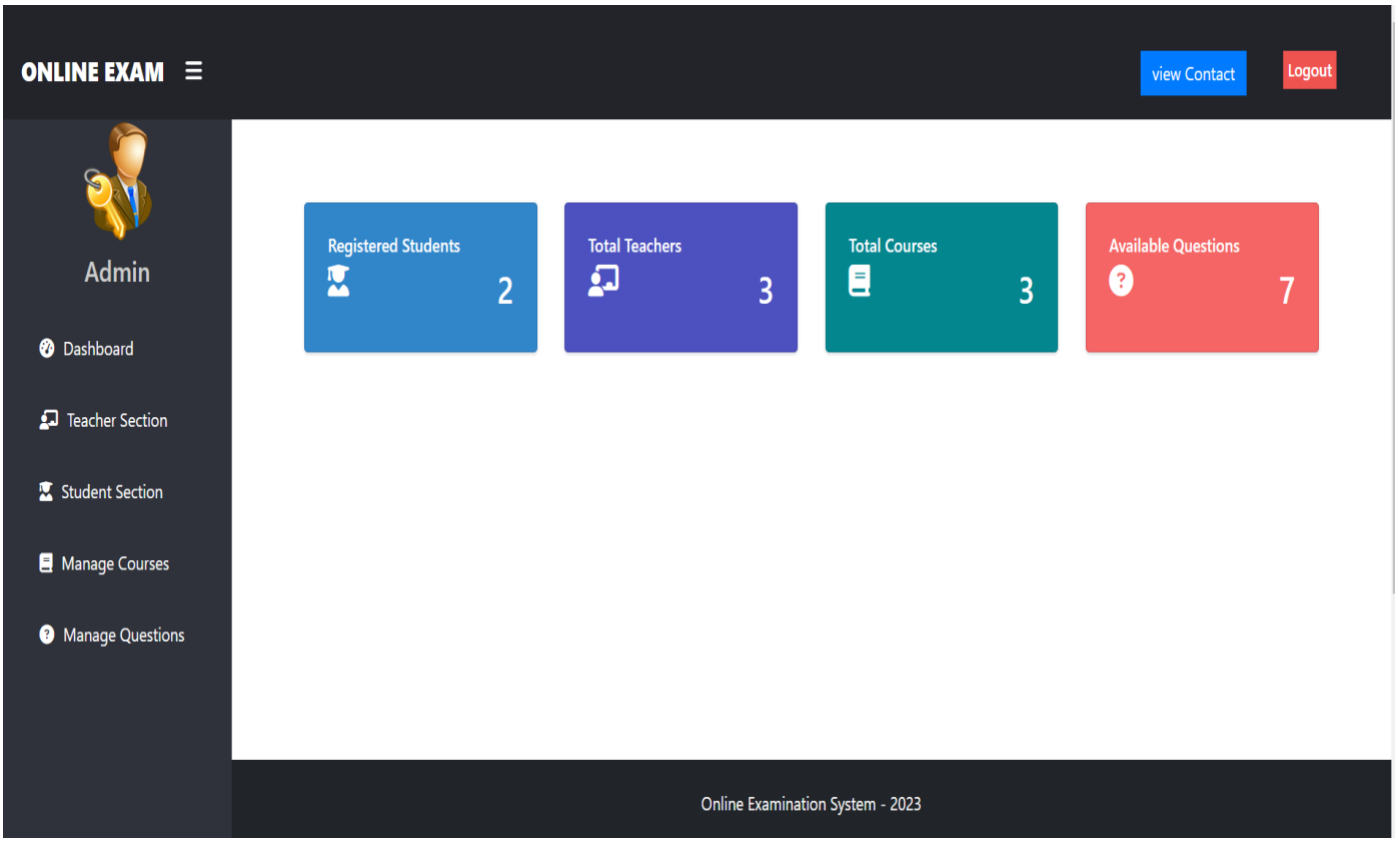
5.2) ADMIN LOGIN PAGE



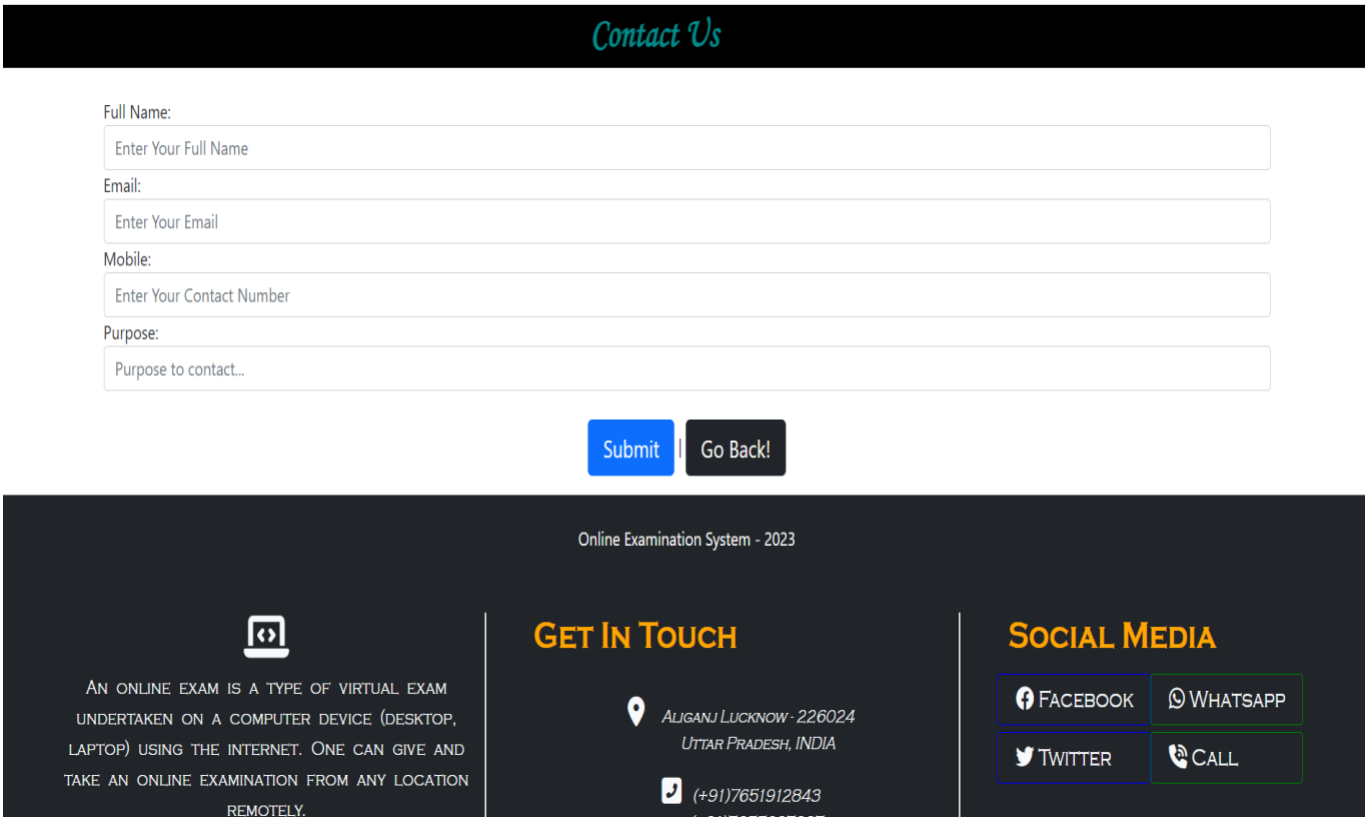
5.3) STUDENT LOGIN PAGE



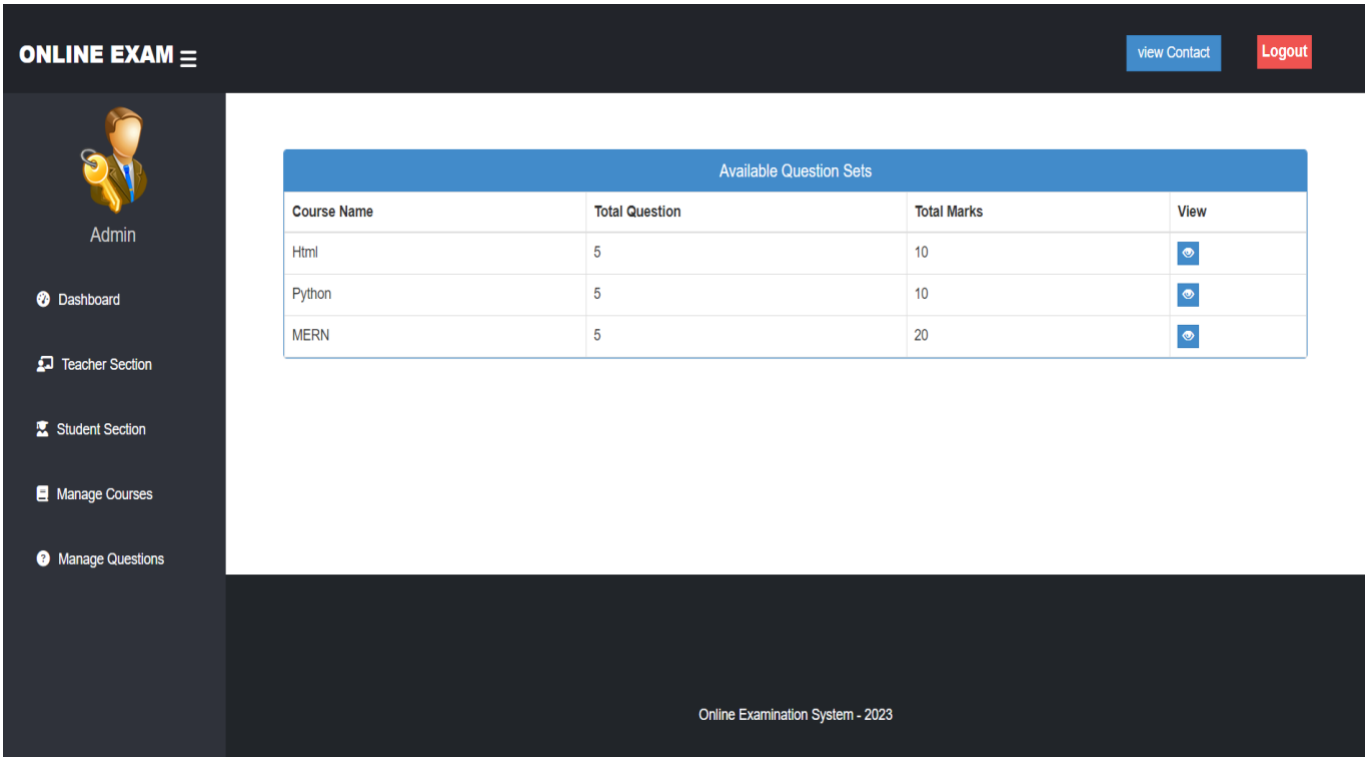
5.4) ADMIN LOGOUT PAGE



5.5) CONTACT US PAGE



5.6) COURSE SECTION



6.CONCLUSION

In conclusion, an online examination system represents a pivotal advancement in the realm of education and assessment. The transition from traditional paper-based exams to a digital platform brings forth numerous benefits, such as increased efficiency, accessibility, and security. The ability to conduct exams remotely, facilitate quick grading, and provide instant feedback to examinees enhances the overall examination experience. Moreover, the integration of features like randomization of questions, diverse question formats, and automated grading contributes to the fairness and accuracy of assessments.

However, the successful implementation of an online examination system requires careful consideration of factors such as infrastructure, security protocols, and user interface design to ensure a seamless and reliable experience for both administrators and test-takers. As technology continues to evolve, the online examination system stands as a testament to the transformative power of digital solutions in the educational landscape, offering a modern and adaptive approach to the evaluation process.Online examination system for introduction to management course is the best compared to paper-based exam. The automated system helps students and lecturers to save time and makes the process faster. It saves space since answers papers will not be used.. Using an open source language gives us more flexibility, but at the same time it required more time to be programmed. The proposed Online Examination System (OES) can be easily adopted by universities and institutions in order to make the exam more secure and more flexible.

The system is subdivided into two main subsystems (student and administrator) that are designed to give the system maximum benefit by demonstrating carefully each subsystem service.The administrator's functions are clearly identified to be able to manipulate user's information such as add (register), delete users and managing the exam materials and content such as add, delete questions, Thus the proposed system is easy and flexible because for future maintenance and development because each subsystem can be handled separately without influence on other system.

7.REFERENCES

Reference Books Head First PYTHON with django & SQLITE- By Lynn Beighley & Michael Morrison The Complete Reference- PYTHON- with django (Guido van Rossun) Reference websites:-

- www.youtube.com
- www.w3schools.com
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