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Online Examination System

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Abstract: The online Examination portal is a web-based application for technical evaluation. The online examination portal not only replaces paperwork but also releases the workload of faculty. Most of the e-examination (Online Examinations) have fixed number of questions without randomizations, they have pool scalability. Online examination system is increasing rapidly with the change in scenario due to the pandemic, also it seems to be an easy, flexible, and secure methodology to carry the examinations effectively.

Keywords: RDBMS- Relational Database Management System, LDAP- Lightweight Directory Access Protocol, SRS-Software Requirement Specification, DFD- Data Flow Diagram, GPL- General Public License

I. INTRODUCTION

The Web Based Online Examination System is an online test simulator to hold online examination test in a decisive and skilled manner and thus avoiding wastage of time for manually examining the test paper. The major objective of this web based online examination system is to competently evaluate the student/candidate thoroughly through an automated system that not only saves a lot of time but also gives fast, improved, and accurate results. It allows the students/candidate appearing for the exam to give the test/papers according to their convenience from any location by simply using internet and time over the manual/traditional pen and paper format. The online examination system provides the student/candidate with a quick and easy way to show up for the test/examination. It also imparts and produces results of the examination immediately after the examination with 100% accuracy and security. Student can appear for the exam only with their valid credentials such as valid username and valid password. This examination consists of multiple-choice questions and appropriate number of options. There are no limitations on number of options, and it can be customized as per the requirement so that the same set of question will not appear to all student to prevent trickeries. More than one option can be correct, but the candidate can select only one option. This system provides time limit to each user. The candidate can verify their results immediately after the completion of the exam.

II. OBJECTIVE

The general objective of the online examination system is to minimize the traditional, manual pen-paper format of examination and introduce the examinees and examiners to tranquil and effortless mode of examination. In view of a long-term usage the online examination is here to stay worldwide which enables the Educational Institutes to evaluate the exams in contented and secure form.
Below mentioned are the crucial intents of the Online Examination System:

1) The Online Examination System inspects the candidate appearing for the exam through the online objective test
2) The answer/response chosen by the candidate will be verified by an automated mechanism.
3) It is an integrated Online Examination System that minimizes the paperwork for both the examiners and examinees.
4) It allows the examiners to create/prepare the question paper.
5) It allows the examiners to scrutinize the test in well-structured and self-regulating form.
6) It allows its user to execute the tests/quizzes in effective manner and create a feedback form for further advancement in either system/question paper design or format.

A. Proposed System

The modern computerized system is developed with an aim to curtail the barriers of existing traditional, manual system. We have studied the manual examination system of a college and identified the possible automation for the examination system in the college. The proposed system offers many advantages. Candidates from different parts of the world be it a remote area or the metro city; can register into the system with ease. The new system is more personalized. It is devised in such a manner that all the new users can get easily accustomed. It is made in a quick and facile referential manner. Accessing some of the pivotal data in the system is not always locked, instead can be opened, and verified in necessity. The supremacy of the proposed system can be found in its security function. Security for all the critical and key data is maintained confidentially. The system can be easily operated, as it is unambiguous, handy where on spot entries can be considered.

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B. Purpose

Purpose of this Online Examination System Online Examination System is to construct a structured an automated system that produces instant results and saves time. It fully automates the previous manual process of taking handwritten exams system. It is adopted by web based online examination software or through Internet variance. It decreases the need of supervision since the exam is being inspected using web based Online Examination System that provides supremacy to that of the traditional method. Many of the Online Examination System yields the result expeditiously. The time limit provided for a particular question gives you the ability of "Quick Learning" and "Quick Thinking". The data present in the Online Examination System is renewed frequently or over a period, so that students have access to latest data.

C. Scope

Online Examination System is widely used as compared to other examination method these days. Online examination system can be used by corporate organizations and educational institution as well. As it is convenient and adaptable, web-based application can be used anywhere and anytime. As every coin has two faces, the same goes with the software every software may have some instances of bugs, errors, security related problems or system faults. There may be occurrence of different problems or system faults for example, computer collapse or crashes due to power supply problem will invalidate efforts of number of students. There are abundant numbers of odds in which software may produce incorrect and invalid results or may display inappropriate data. These bugs must be identified and solved for improving quality of software, thus in future we can develop and contribute towards much more secure software by improvising technologies.

III. TECHNOLOGY SURVEY

Web-Based survey, classifies, and compares technologies supporting Web application development. The classification is contingent on foundational technologies; integration with other inception; and dynamic content generation. We further survey and classify software engineering techniques and tools that have been adopted from traditional programming into Web programming. Although the infrastructure problems of the online have largely been solved, the cacophony of technologies for Web-based applications reflects the shortage of a solid model tailored for this domain.

This project is a web application that is developed in PHP having SQL server as back end.

1) Input Design (HTML/CSS)
2) Database Design (SQL Server)
3) Coding (PHP)

IV. REQUIREMENT ANALYSIS AND SYSTEM DESIGN

The hardware and software requirements vary according to the type of deployment that the user wants to configure, wherein a common computer, provides information to other computers through the internet. It is either the hardware (the computer) or the software (the computer programs) that stores the digital information (web content) and delivers it through internet as required.

A. Minimum Software Requirements

1) PHP (front end)
2) JavaScript
3) MS Word 97 or later
4) Web Browser: Microsoft Internet Explorer, Mozilla, Google Chrome or later versions
5) MySQL Server (back-end)
6) Operating System: Windows7

B. Minimum Hardware Requirements

1) Pentium IV Processor
2) 512 MB RAM
3) 40GB HDD
4) 1024 * 768 Resolution Color Monitor

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C. System Design

The system design for any system, in this case the system design for the Online Examination System, is based on the requirement specification design. It is a most critical phasein the development of a system. Mostly the design proceeds in two stages:

1) *Preliminary or General Design*: In the preliminary or general design stage, the features or characteristics of thenew system are specified. The costs of implementing these attributes and the perks tobe obtained are evaluated. If the project is still considered to be attainable, we then proceed to the detailed design stage.
2) *Structure or Detailed Design:* In the detailed design stage, computer-oriented workbegins diligently. At this stage, the design of the system becomes more organized. Structure design may be a blueprint of a computing system solution to a given problem having an equivalent components and inter-relationship among an equivalent component because the original problem. Input, output, and processing specifications are involved intimately. In the design stage, the programming language, and therefore the platform during which the new system will run also are decided.

D. Program Flowchart

A flowchart is a symbolic illustration of several logical steps of a program. These logical statements use several shapes, including the geometric ones, to show the incremental process with arrows while establishing a data flow. The program flowchart is a data flow diagram that shows the data flow while creating a program or algorithm. It allows the user to explain the process rapidly as they collude with others. These programming flowcharts also probe the logic behind the program to process the code of the programming. The programming flowcharts can be used in varied manner, as shown in Fig. 1.

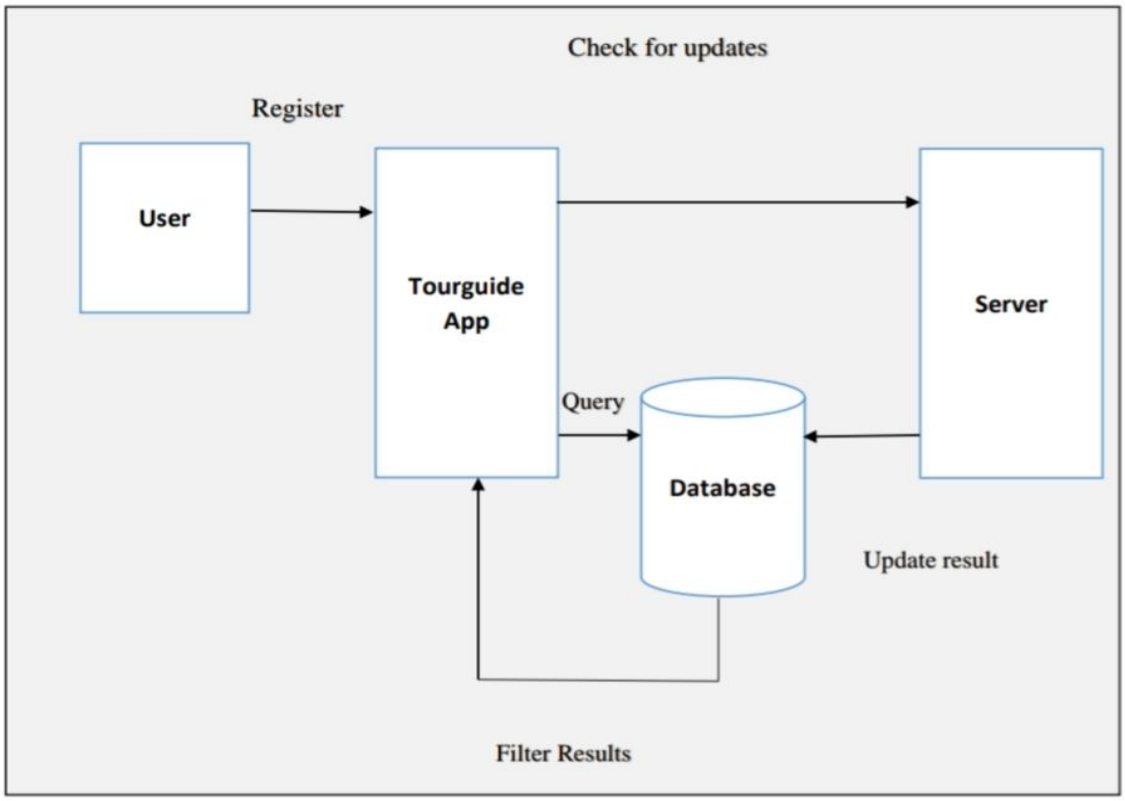


Fig. 1 Program Flowchart

E. Data Design

Data design is the original design exertion, which results in unequivocal, modular, and coherent program structure. The information sphere model developed during analysis phase is converted into data structures demanded for enforcing the software. The data objects, attributes, and connections depicted relationship plates and the information stored in data wordbook give a base for data design exertion. During the data design process, data types are specified along with the integrity rules needed for the data. Refer Fig. 2 for database design of Online examination System.

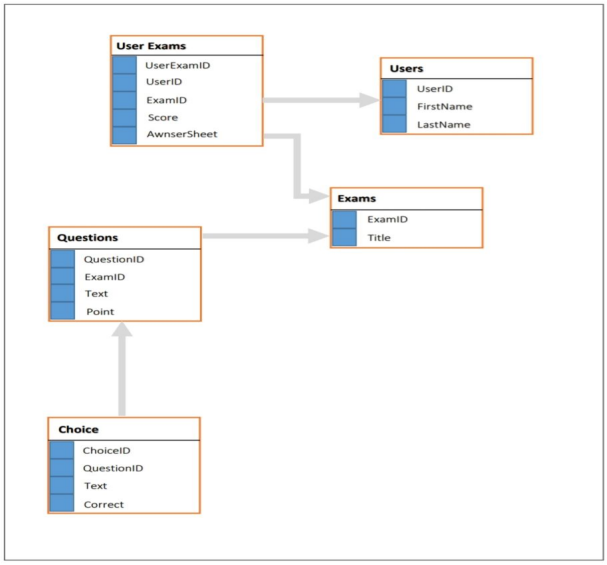


Fig. 2 Database Design

F. Data Dictionary and Data Views

A Data Dictionary is a collection of names, delineations, and attributes about data rudiments that are being used or captured in a database, information system, or part of a exploration design. It describes the meanings and purposes of data rudiments within the environment of a design, and provides guidance on interpretation, accepted meanings and representation. A Data Dictionary also provides metadata about data rudiments. The metadata included in a Data Dictionary can help in defining the compass and characteristics of data rudiments, as well the rules for their operation and operation.

TABLE I

USER REGISTRATION TABLE

Field Table	Data Type	Description
Name	Text	Name of the User
Username	Text	Stores Username and Verifies for Valid Credentials
Password	Text	Stores Password for Corresponding Username
E-mail	Text	For Verification and Notification Purpose

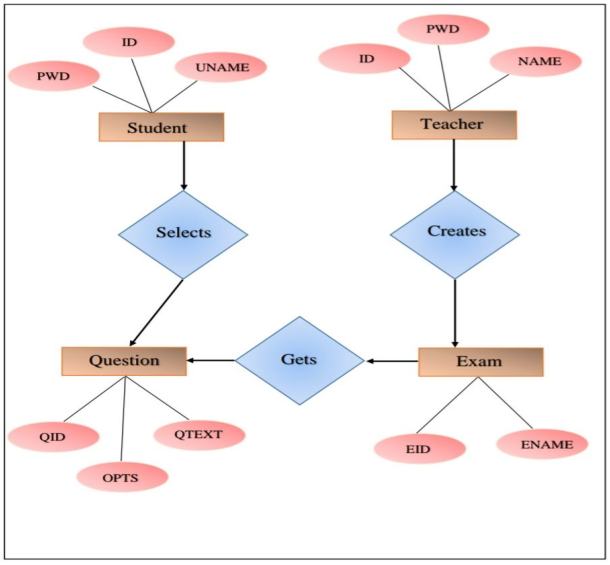


Fig. 1 E-R Diagram

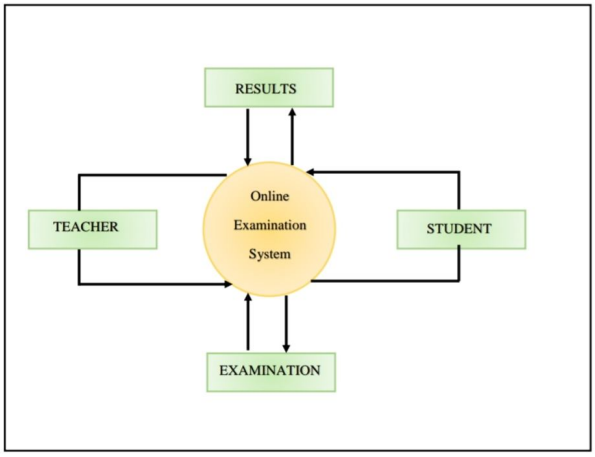


Fig. 4 Data Flow Diagram (DFD-Context Level Diagram)

V. IMPLEMENTATION AND MAINTENANCE

A. Implementation

An adequate and satisfactory project plan for a new website to be exhibited, is measured in series of tasks, a budget, a timeline, and a list of needed resources and materials. Taking the suitable and appropriate time to create a brief project plan produces a structure within which one can work ceaselessly and can achieve the goal on the desired timeline with yielding results.

1) *User Registration:* A user must be registered initially before logging into the system and opting for the exam, as shown in Fig 5.

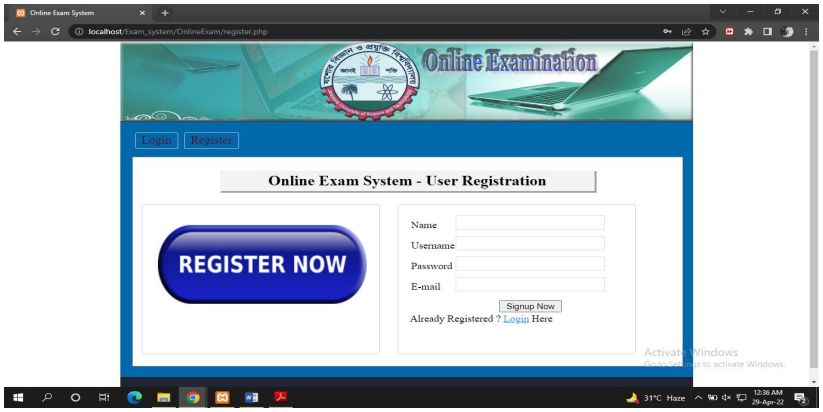


Fig. 5 User Registration Screenshot

2) *User Login:* The registered users shall be able to login into the system with valid credentials, as shown in Fig 6.

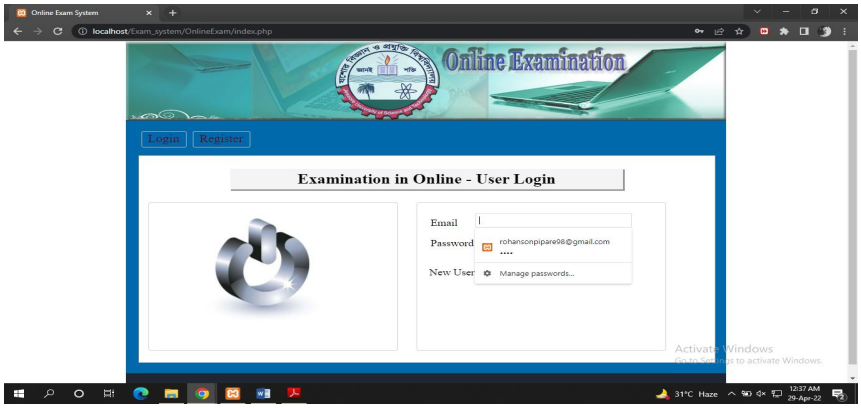


Fig. 6 User Login Screen Screenshot

3) *Welcome-Page:* The registered users shall be successfully able to login into the system and shall be able to see the Welcome-Page on the screen and can start with the Examination, as shown in Fig. 7 and Fig. 8.

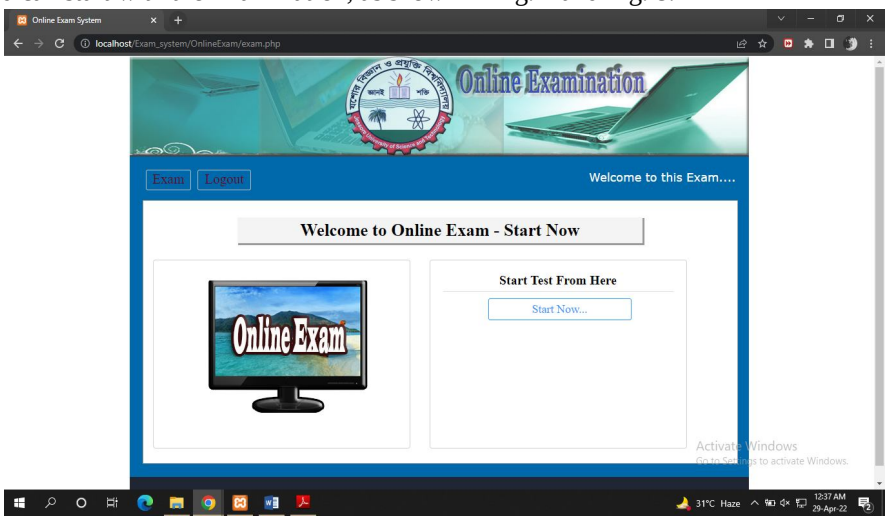


Fig. 7 Welcome-Page

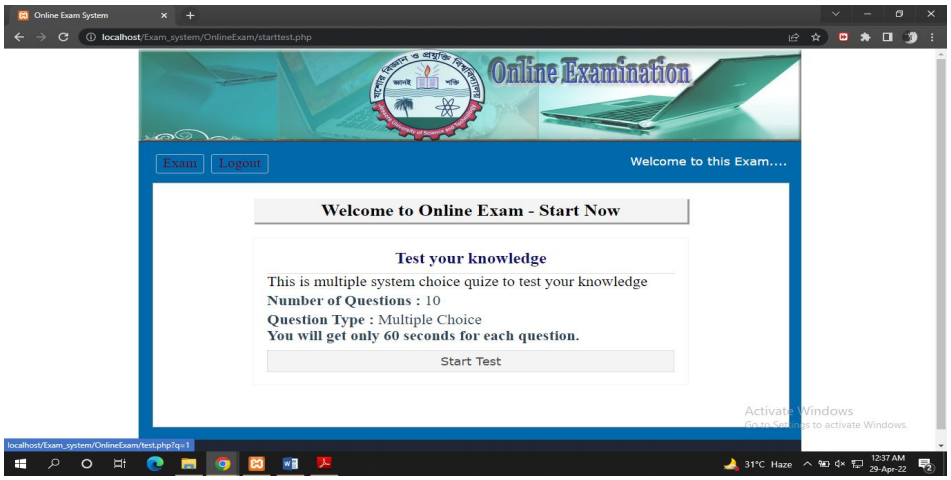


Fig. 8 Start Exam Screen

4) *Online Examination:* The candidates shall be successfully able to login into the system and shall be able to start Examination, as shown in Fig. 9.

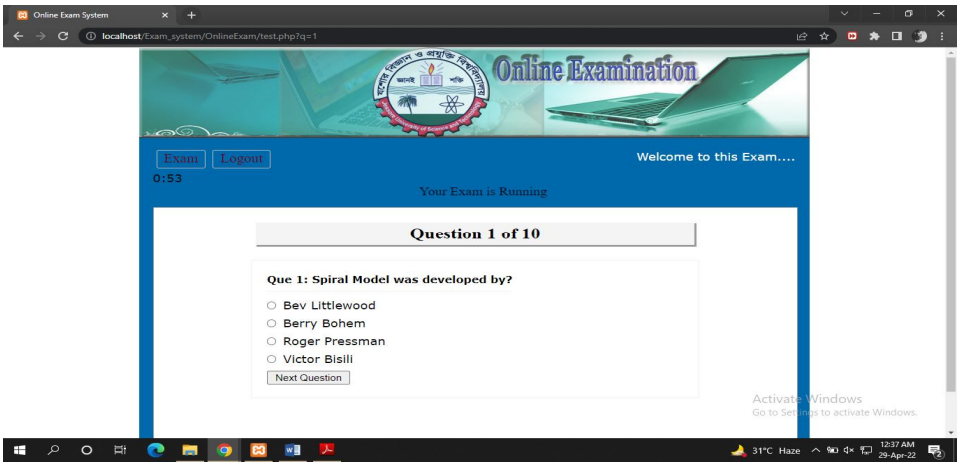


Fig. 9 Online Examination Screen

5) *Successful completion of Exam:* The candidates shall be successfully able to complete the exam successfully and view the results and log off from the system, as shown in Fig. 9.

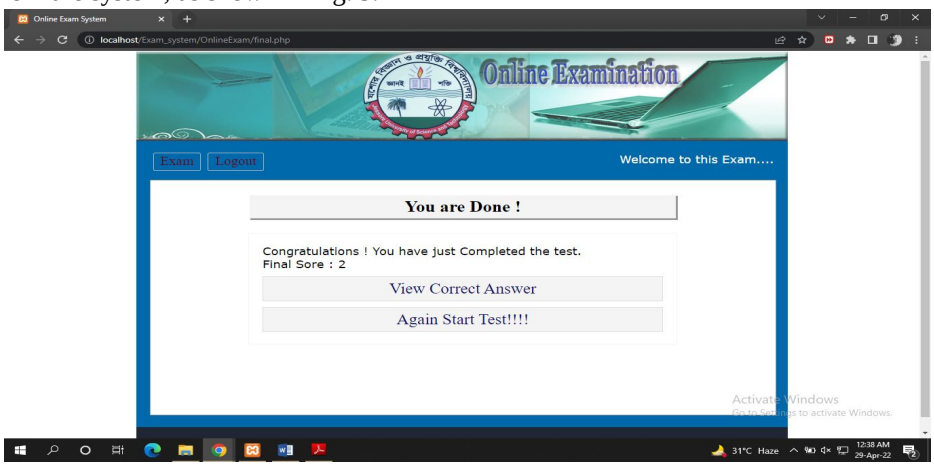


Fig. 10 Online Examination Screen

VI. CONCLUSION

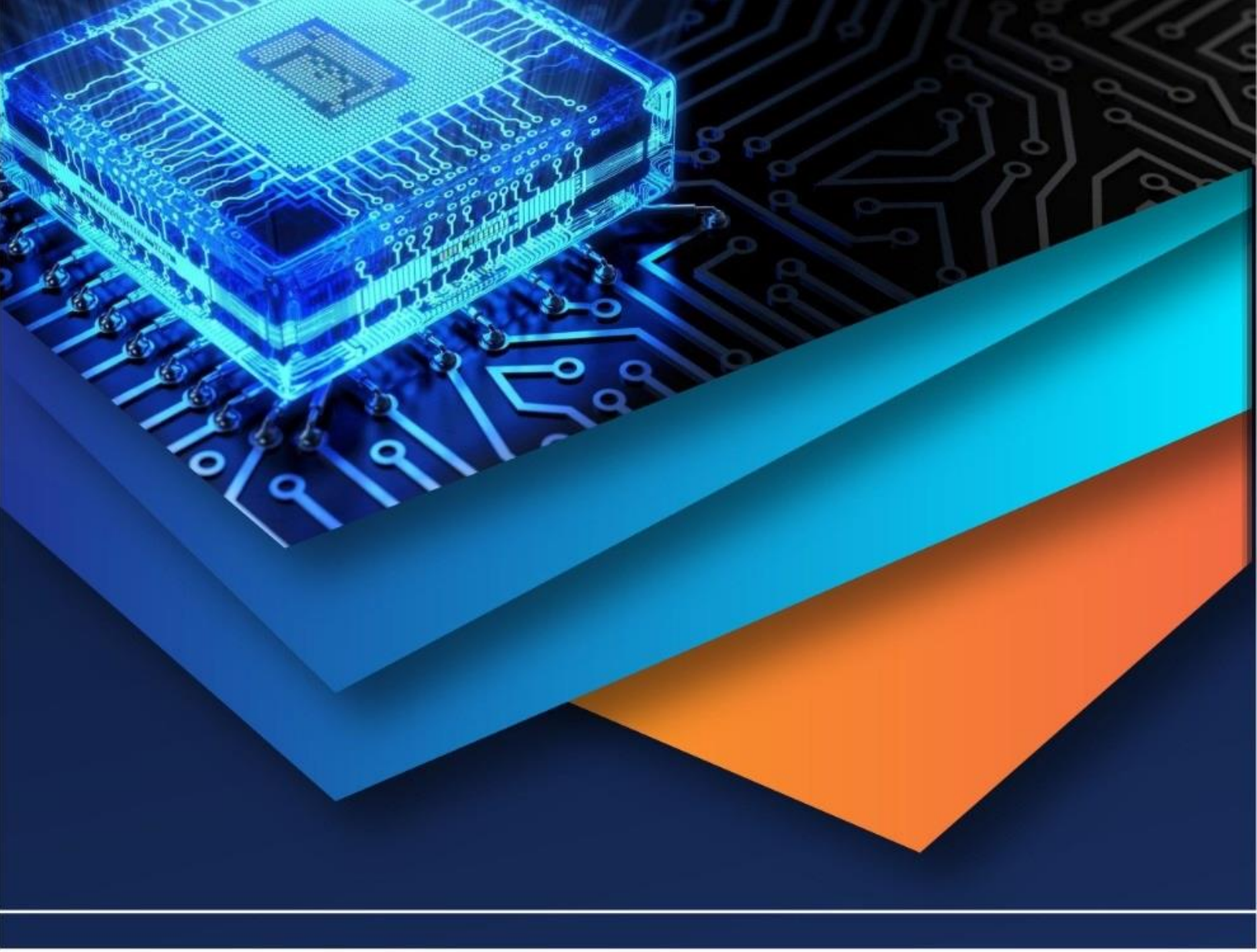
Online Examination System (OLES) is a web application. The key concept is to minimize the amount of traditional, pen-paper form of examination and convert all forms of documentation to digital form. It was observed that the data/information required can be obtained with much simplicity, accuracy and in a secure manner, through the computerized system. The user with limited knowledge about the computer may also access the system with ease. The system also yields detailed result as required.

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