iJRASET
International Journal For Research in Applied Science and Engineering Technology



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

**Volume:** 11 **Issue:** IV **Month of publication:** April 2023

**DOI:** https://doi.org/10.22214/ijraset.2023.50576

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538*
*Volume 11 Issue IV Apr 2023- Available at www.ijraset.com*

# Development of Online Exam System for the Institution

Naresh Badve[1], Tony Jagyasi[2], Samruddhi Bansod[3], Khushi Dharmik[4], Swati Shekokar[5], Trisha Rotke[6], Sakshi Gawande[7]

[1, 2]*Professor,* [3, 4, 5, 6, 7] *Student, Department of Computer Science and Engineering, B. Jain Institute of Technology, Management and Research, Nagpur*

***Abstract:*** ***Today online examination systems have become a fast-growing examination method because of its speed and accuracy. It is the simplest to use web-based applications for schools, colleges, universities, coaching classes, training centers, certification agencies, and recruitment firms to conduct timer-based, completely automated paperless examinations. The hassle of paper-based examination, physical presence of invigilators ensuring no cheating by the students or the strenuous task of checking each test paper by the examiner; this conservative practice is really tiring. Virtual Examination System is a web-based system, a modern standalone online examination platform for conducting virtual exams which has highlighting features like Full Screen constraint to eradicate malpractices by students, Instant results, and statistics right after completion of the test and many more.***

***Keywords: web-based application, virtual platform, statistics, timer-based.***

## I. INTRODUCTION

**T**oday the online examination system has become a fast-growing examination method because of its speed and accuracy. It is the simplest to use web-based applications for schools, colleges, universities, coaching classes, training centers, certification agencies, and recruitment firms to conduct timer-based, completely automated paperless examinations. It is very much important for the organizations to prepare their students for any exams by saving the time. It will check the paper and generate mark sheets as well. It will also help the Organization to test the students and develop their skills. Virtual examination system has modules like question bank, examination, test setup, giving examination, calculate results, view results, store test data, administrator module to manage examination, question, and its options. The Virtual Examination System also needs less manpower to execute the examination.

Today, almost all exams and recruitment tests are being conducted in online mode. The primary goal of the proposed "Virtual Examination System" is to effectively access the student performance thoroughly with the help of a completely automated system that not only helps to save a lot of time but also gives quick outcomes. virtual exams which have highlighting features like Full Screen constraint to eradicate malpractices by students, etc.

### *A. Goals & Objectives*

*1)* To Reduce Examination Costs.
*2)* The flexibility of exam management.
*3)* Quick result processing.

## II. LITERATURE SURVEY

Today, the online examination system is considered a fast-developing examination method because of its accuracy and speed. It also works with less manpower to handle the examination. Almost all organizations today are managing their exams by an online examination system, since it reduces student's time in examinations. Organizations can also easily monitor the progress of the student that they give through an examination. As a result of this, the result is calculated in less time. It also helps diminish the need for paper.

Online examination project in python is very useful to learn it. According to today's requirement, the online examination system is significantly important to the educational institution to prepare the exams, saving the time and effort that is required to check the exam papers and to prepare the results reports. The online examination system helps the educational institutions to monitor their students and keep eyes on their progress.

©IJRASET: All Rights are Reserved 

The best use of this system is in the Scholastic Institute and training centers because it helps in managing the exams and getting the results in an easy and efficient manner. Until today the preparation for exams and preparing the results was performed manually, this required more time to complete.

A Study on Web Based Online Examination System International Conference on Recent Trends in Artificial Intelligence, IOT, Smart Cities & Applications (ICAISC-2020). Online examination system is a web-based examination system where examinations are given online. Either through the internet or intranet using a 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 reduces the required time but also obtains fast and accurate results. The main objective of our software is to efficiently evaluate the candidate thoroughly through a fully automated system there is no need for paper and pen. The user can write an exam without going to the exam center. Also, the website will provide a good writing overview, it is the most significant advancement in the programming process.

Before building up the device it is important to decide the time factor, economy and friends' quality. When these things are fulfilled, at that point the following stage is to figure out which working framework and language can be utilized for building up the device. When the software engineers begin assembling the instrument the developers need a parcel of outside help. This help can be acquired from senior developers, from books or from sites. Before building the framework, the above thoughts are considered for building up the proposed framework. The significant piece of the undertaking advancement segment considers and completely studies all the necessary requirements for building up the task. For each venture Literature study is the most significant part in the programming advancement process. When these things are fulfilled and completely studied, at that point the subsequent stage is to decide about the product determinations in the separate framework, for example, what kind of working framework the venture would require, and what are for the most part the vital programming are expected to continue with the following stage, for example, building up the devices, and the related activities.

Understudy Verification System for Online Assessments: Bolstering Quality and Integrity of Distance Learning The quick development of online assessments utilizing Internet-based appraisal instruments has proceeded. The powerlessness to control an understudy's domain while taking tests has been a significant test for advanced education. An unmistakable relationship exists between an expansion in the quantity of demonstrations of deceptive nature and the disappointment of establishments offering courses to screen and uphold approaches on cheating. The ongoing article of scholastic untruthfulness and delegate at home distributed by Chronicle Higher Education, the U.S. Congress is worried about quality and respectability of separation learning and had included language into a piece of enactment restoring the Higher Education Act that urges schools to battle duping all the more adequately. The reason for this examination is to research the flow innovation and biometric frameworks utilized in remote administering frameworks to check and screen understudies taking on the web tests. The examination additionally proposes the model to help the trustworthiness and nature of online appraisal; the model incorporates facial acknowledgment programming, video reconnaissance frameworks, and PC limitation programming into a framework. In outline, online appraisal and administered testing manage the issue of understudy ID and the earth where materials are gotten to adequately however it likewise invalidates a great part of the benefit of giving Internet based-course work. Usage of biometric framework with refreshed innovation in video reconnaissance in the online assessment will prompt conviction and quality confirmation of understudy accomplishment and school's notoriety.

Acknowledgment of internet testing as an elective assessment device in advanced education Testing or assessing is one of the actions in a learning procedure. There are a few sorts of testing that are utilized to be applied in advanced education. Like paper-based testing or PC based testing. In Malang, Indonesia, there are numerous higher instructions that are continually having assessment plans. How about we call a midterm assessment. The midterm assessment had been held a quarter of a year after the talks began. Present time, paper-based testing is as yet utilized, in midterm assessment or even in the last assessment. Be that as it may, in some topics, PC based testing is being utilized. Much the same as in Informatics and Computer topics, the midterm assessment is utilizing a PC based testing. Right now, I might want to think about executing web-based testing in advanced education from the understudy's perspective and the lecturers.

In this application, we present a strategy to stay away from the actual presence of a delegate all through the test by making an exhaustive performance of multiple tasks frameworks. This assessment framework utilizes fewer assets and teaches the requirement for Q & A contents.

The online examination system uses client/server architecture methodology. It is essential to make sure that the data set is very much planned. The document names picked to mark the tables made inside the information base endeavor to mirror the table's motivation and, thus, add to a well-plan framework.

Utilizing an open-source language gives us greater adaptability, and yet it requires more opportunity to be modified. Student support is characterized as "every one of the exercises and components in schooling that reacts to a known student or a gathering of students, which are intended to aid emotional and precise domains of the learning process. Students get themselves registered for several online programs and it's increasing exponentially. But students dropping out of these courses is also more due to improper support services.

In the Online Examination System, researchers are attempting to change the traditional manual examination in the educational institution. The online examination system is effective in time management. In this paper, we proposed a system with an automatic assessment technique. This algorithm is to determine the frequency of words, Keyword math, linguistic analysis, and grade generation. Our advanced system is able to evaluate the response of descriptive questions. Mark allocation depends on the percentage of the answer. The whole press consists of four steps: Extraction of keywords, weight age of keywords, Feature matching, Score generation. Most of the competitive exams are conducted online. Because they are time-efficient, cost-efficient, and secure.

In the rural area, students have to travel from far away to give examinations in their allocated center. Hence their welfare needs to be the main goal of the system. Online examination is the crucial part among online education. It is efficient and fast enough and reduces the large amount of material resources. Examination system is developed based on the web. This paper describes the principle of the designed system that presents the main functions of the system, analyzes the algorithm of auto - generating test paper, and discusses the security of the system.

This Online Examination System is a software solution, which allows any industry or institute to arrange, conduct and manage examinations via an online environment. Some of the problems faced during manual examination systems are the delays occurring in result processing, filing poses a problem, filtering of records is difficult. The chance of loss of records is high and also record searching is difficult. Maintenance of the system is also very difficult and takes a lot of time and effort.

The main objective of our project is to provide a unified interface for students and faculty members for the effective conduction of online exams. The faculty can set questions and review the student performance. Students can give their test allotted to them according to their subjects in their respective curriculum. The aim is to make it easier for faculties and students to analyze their performance in the exams and easy conduction of online examination

## III. PROPOSED WORK

The main objective of our project is to provide a unified interface for students and faculty members for the effective conduction of online exams. The faculty can set questions and review the student performance. Students can give their test allotted to them according to their subjects in their respective curriculum.

The aim is to make it easier for faculties and students to analyze their performance in the exams and easy conduction of online exams.

### *A. System Architecture*

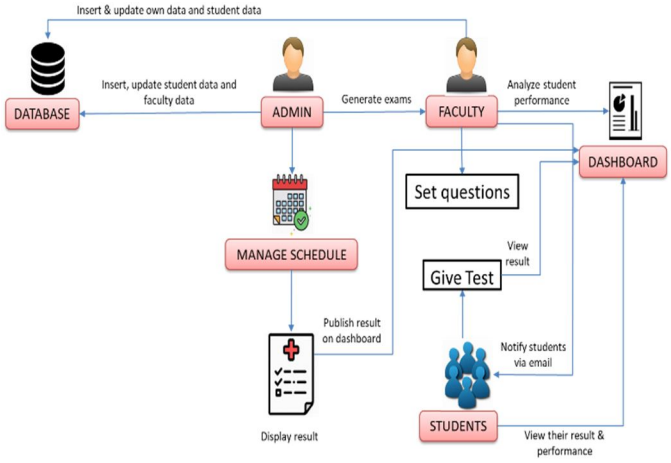



Fig. 1 System Architecture

Above: The primary focus of this web application is to provide an interface to analyze the performance of students. We have achieved this by creating three interfaces of admin, student, and teacher. The student must add his credentials in order to gain access to the student interface. The above architecture describes the complete view of the web app and its usage in the perfect manner. It also shows the working of all the actors. There are three main actors of our application i.e., student teacher and admin. The first task of any user before accessing the interface is to sign up and login. After creating the account of every user, the user data will be stored in the database. Moreover, the admin and faculty can add the data of students directly in the database.

As shown in the figure the admin has to manage schedule and publish result. In the manage schedule task the admin has to notify students about the upcoming exams via email. After the schedule is successfully managed and the test is given by students the admin will display result. The admin generates exams and then the faculty sets questions. After the test is successfully created and the respective questions are added with correct options and marks. The time limit is set and the question paper is out for students. The students of 38 respective courses are assigned the test. The students are then notified about upcoming test beforehand. The student has to appear in the test after successful completion of the test he can view his marks immediately and analyze his performance. The result of every student will be visible to the admin and faculty. The faculty can take respective measures accordingly for every student based on their performance. The main focus of thus app is to provide a unified interface for faculty and students for individual analysis of academic performance. This will immensely help to improve overall performance of students.

*B. Functional Modules*

1) *Module 1 – ADMIN:* The administrator module does the function of system management, adding the registered information of the user to the system.
2) *Module 2 – FACULTY:* The teacher module includes a test management module, automatic organizing of examinations. paper, examination-paper management, paper analysis, result.
3) *Module 3 – STUDENT:* The student module has a login option to attend the exam and after completing and submitting the exam result is immediately generated.

*C. Flow of the System*

1) *Flow of the System for Admin*

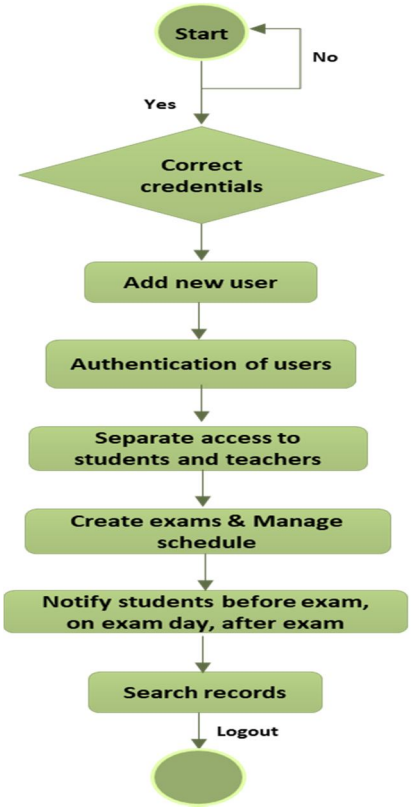



Fig. 2 Flow Chart of admin

*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538*
*Volume 11 Issue IV Apr 2023- Available at www.ijraset.com*

There are three main modules of our web-application namely admin, faculty and student. The task of **admin** module is to authenticate and approve user data. It has the authority to approve respective students and teachers who are registering in the application. Admin can login in the app through super-user from the command prompt of the web-app. After creating the account, it has to login in order to access all the admin facilities. The admin can add new user and authenticate any new users who sign up through the website. There is a separate access for both teachers and students, the admin has to authenticate both teachers and students separately. The admin can also create exams and analyze the number of exams generated and also see the details of exams. The main task of admin is also to notify students about upcoming test on and day before the examination

*2) Flow of the System for Faculty*

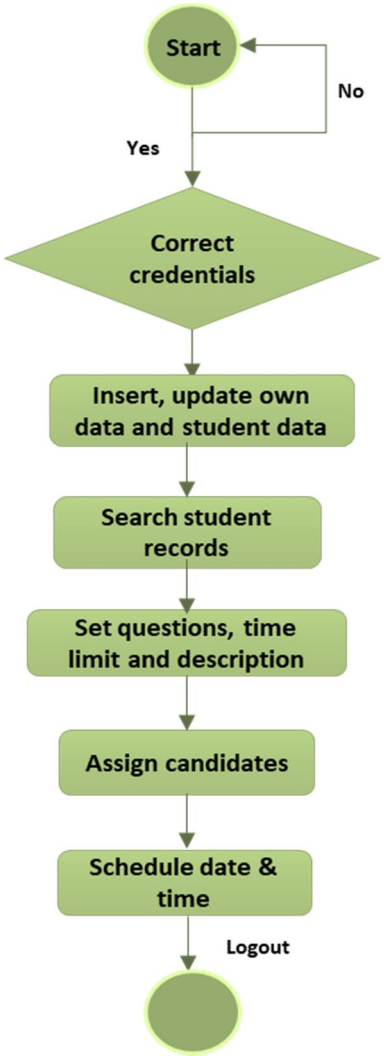



Fig.3 Flow Chart of faculty

The second module is faculty module. In order to access the faculty side interface, the faculty has to first sign up and make an account. After the account is successfully created, he/she has to wait until the admin authenticates the user. After receiving authentication from the admin, the faculty has access to all the functions. The faculty can search records of students and analyze the performance of every student individually. The main task of faculty is to generate exams. While generating exams he/she has to enter questions and options and also set correct options. The faculty can also set time limit of the examination according to his/her question paper. Lastly after generating the question paper faculty has to assign the test to respective students of the respective course and add the schedule of the examination.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

*3) Flow of the System for Student*

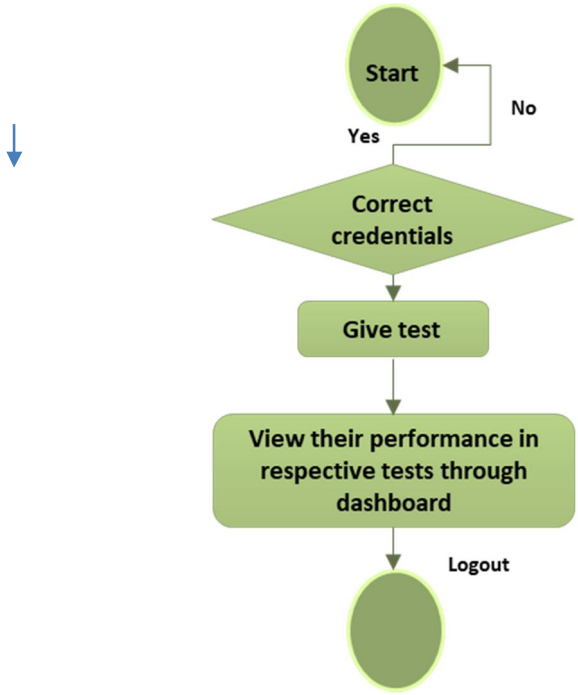



Fig.4 Flow Chart of students

The last module is the **student** module. The student has to first signup and fill all the details of asked in the form. After successful signup the student will gain access to the student interface. The main task of student module is to give exam and see his result. There will be dashboard for students to do individual analysis of his performance.

*D. Figures and Tables*

TABLE I
STUDENT PERFORMANCE TABLE

| Subjects | Khushi Dharmik | Sakshi Gawande | Samruddhi Bansod | Swati Shekokar | Trisha Rotke |
|---|---|---|---|---|---|
| Applied Mathematics III | 12 | 12 | 28 | 12 | 24 |
| Digital circuits and fundamentals of microprocessor | 12 | 8 | 12 | 20 | 4 |
| Ethics in IT | 28 | 20 | 16 | 16 | 8 |
| Computer Architecture and Organization | 32 | 12 | 20 | 20 | 20 |
| Advanced C and Computer Logic Design | 40 | 16 | 8 | 16 | 12 |

*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538*
*Volume 11 Issue IV Apr 2023- Available at www.ijraset.com*

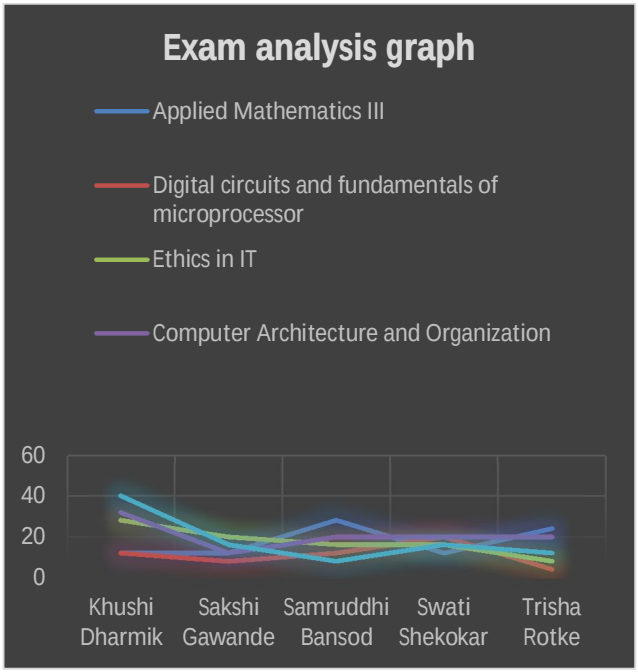



Fig. 5 Exam Analysis Graph

Fig. 5 shows a line graph of exam analysis of students showing the performance of each student in the respective subjects. The x-axis denotes the names of students and y-axis denotes the marks of students in various subject. Each subject is denoted by a specific color which is described in the graph. There were 5 subjects and each student attended the exam of these subjects through our online exam platform. Each subject carried 40 marks each consisting of 40 questions.




Fig. 5.1 Individual analysis graph of student 1

Fig. 5.1 shows a line graph of exam analysis of student 1 showing her performance in the respective subjects.

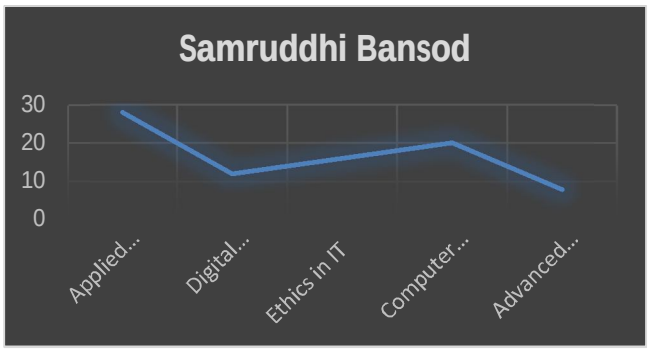



Fig. 5.2 Individual analysis graph of student 2

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

Fig. 5.2 shows a line graph of exam analysis of student 2 showing her performance in the respective subjects.

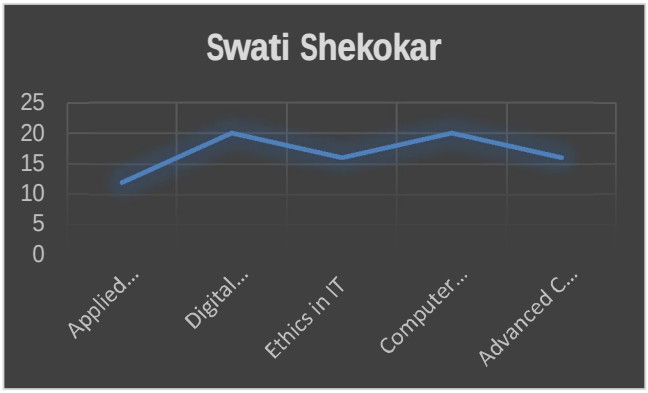



Fig. 5.3 Individual analysis graph of student 3

Fig. 5.3 shows a line graph of exam analysis of student 3 showing her performance in the respective subjects

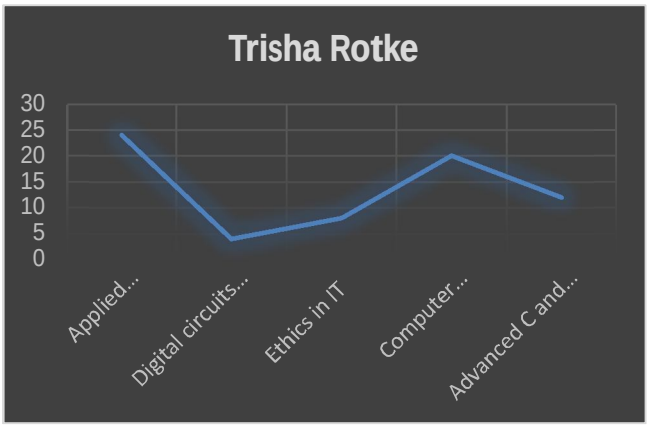



Fig. 5.4 Individual analysis graph of student 4

Fig. 5.4 shows a line graph of exam analysis of student 4 showing her performance in the respective subjects

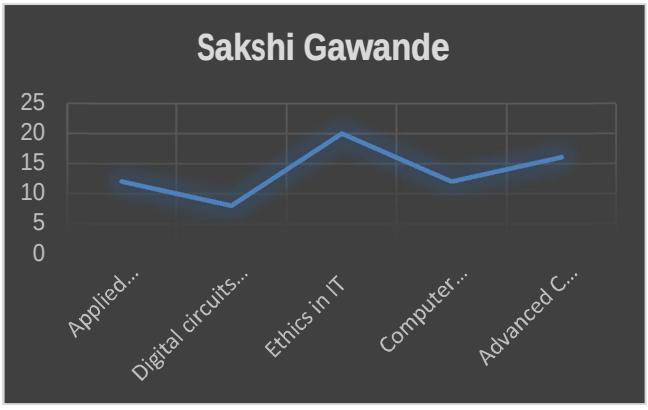



Fig. 5.5 Individual analysis graph of student 5

Fig. 5.1 shows a line graph of exam analysis of students 5 showing her performance in the respective subjects

## IV. CONCLUSION

In this project, we have designed and developed a web application and partially completed its development by applying engineering knowledge which provided us with an approach to build an Online Examination System. It solved the problem of faculty belonging to our institute and can save their time in terms of exam management, invigilation and even correcting exam papers. Also, this project is a step towards adaptation of digital education by our institution. This application will enable the institute's students to appear for the examinations in online mode. We have used modern tools like Django, Python, VS Code and dB SQLite.

During the development of this project, we learnt individual and teamwork while project development and management. While presenting our project through various seminars we enhanced our communication and presenting skills and displayed professional ethics.

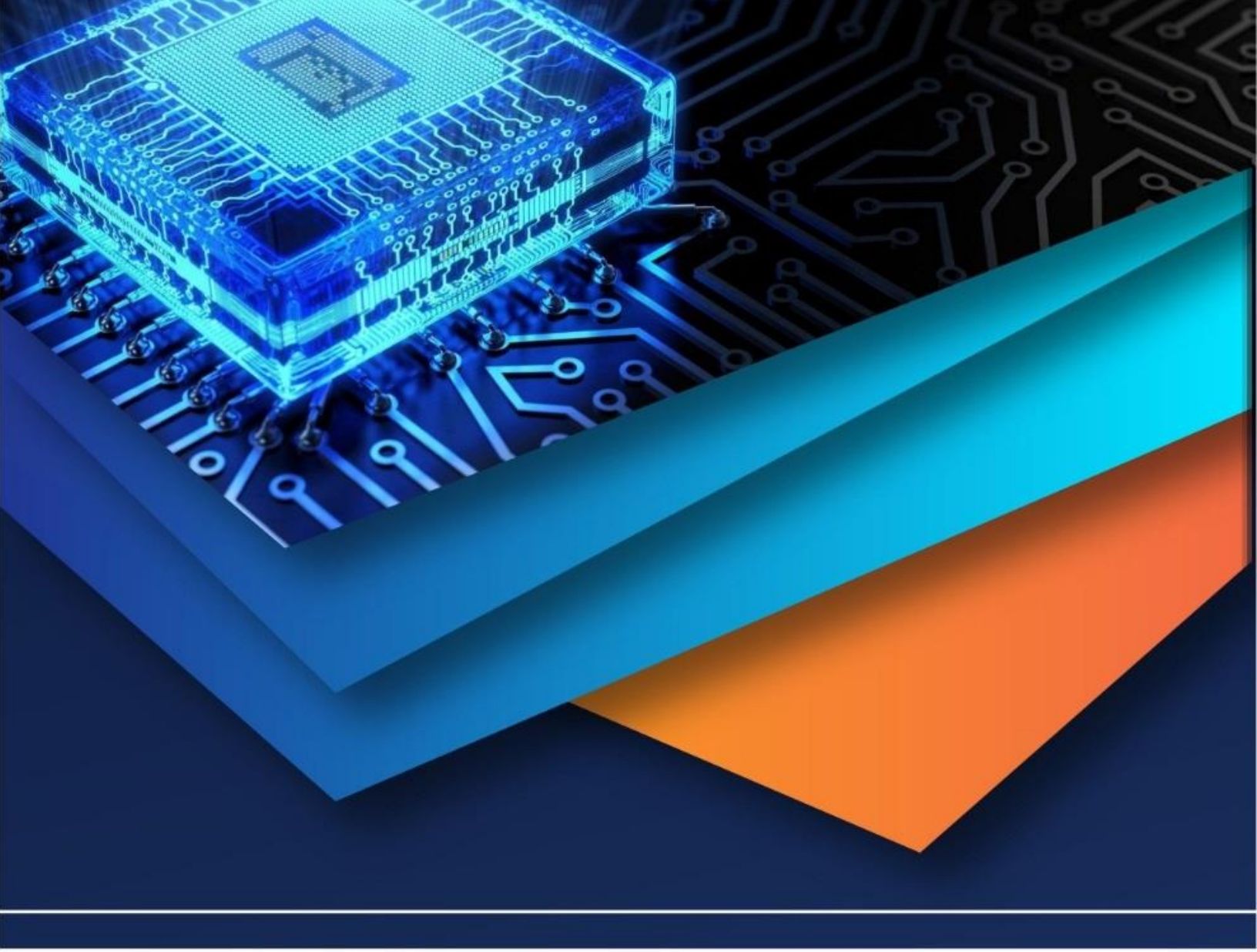
## V. ACKNOWLEDGEMENT

We would like to express deep sense of gratitude to our Project Guide, Mr. Naresh Badve and Mr. Tony Jagyasi, Department of Computer Science & Engineering, for being the cornerstone of our project. We would also like to thank Dr. Animesh Tayal, Head of Department, Computer Science & Engineering for providing necessary guidance, support, motivation and inspiration without which this project would not have been possible.

## REFERENCES

[1] Krizhevsky, A., Sutskever, I., & Hinton, G. E. (2012). Imagenet classification with deep convolutional neural networks. Advances in neural information processing systems (pp.1097-1105).
[2] You Only Look Once: Unified, Real-Time Object Detection Joseph Redmon, Santosh Divvalay, Ross Girshick, Ali Farhadi, University of Washington, Allen Institute for AIy, Facebook AI Research.
[3] Understanding of Object Detection Based on CNN Family and YOLO (2018) Juan Du1, New Research and Development Center of Hisense, Qingdao, China. 266071.
[4] "A review and an approach for object detection in images" Int. J. Computational Vision and Robotics, Vol. 7, Nos. 1/2, 2017 Kartik Umesh Sharma* and Nileshsingh V. Thakur
[5] Yiwei Wang and John F. Doherty, Robert E.Van Dyck "Moving Object Tracking in Video" 2018.
[6] "A review and an approach for object detection in images" Kartik Umesh Sharma* and Nileshsingh V. Thakur Int. J. Computational Vision and Robotics, Vol. 7,Nos.1/2,2017.
[7] Multi-Object Detection in Traffic Scenes Based on Improved SSD Xinqing Wang, Xia Hua *, Feng Xiao, Yuyang Li, Xiaodong Hu and Pengyu Sun College of engineering

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)