# Exam monitoring system over a LAN Network

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**Abstract-** *Considering the current scenario, every educational institute has computer labs where various exams are carried out throughout the year. Therefore, a major emphasis is placed by the educational institute on conducting all the exams smoothly and cheating-free. However, students find out new ways by which copying activities can be carried out. This eventually fails all the measures taken by the institute authorities to conduct a cheating-free examination scenario. The exam monitoring system aids the educational institutes by providing services that can be used to avoid cheating activites like accesing internet to search answers, accesing lan for files. This paper describes the application, its development, and its technical implementation. The paper also describes other anti-cheating feature such as USB device detection and remote desktop monitoring.*

**Index Terms**- LAN, Socket programming, Remote desktop monitoring, Website blocking, Process tracking, Client, Server, Connectivity.

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## 1 INTRODUCTION

### 1.1 BACKGROUND

In the world of growing competition, the companies expect the student to be technically fit, and to ensure that students are technically fit various practical sessions and practical exams are conducted during their course duration. These exams help the students to develop their skills not just physically but also technically, which provides them more chances to perform well for their respective companies. Students usually fail to understand such motives of the educational boards and try various cheating methods in order to gain advantage over other students.

Exam monitoring system is implemented to overcome the problem faced by teachers to monitor student's activities over a Local Area Network in computer labs [1]. Viewing present situation, various educational institutes consist of computer labs. In such type of computer labs, students perform their given task such as performing practical session, curricular examination and these labs are utilized for conducting external online examinations. Besides, all these activities conducted in the computer labs students tend to perform certain actions like USB device plug-in and accessing unauthorized websites which are prohibited[1][2]. This is the main problem of the current lab management system.

### 1.1 AIM AND OBJECTIVE

The aim of this project is to implement Client Server Protocol Implementation [1]. This project focuses on developing a system to manage the computer network or a LAN by implementing such software which carries out operations that can monitor entire computer lab from a single server system; passing message to client system, grant access/deny access to the internet, prevent usage of USB devices and also shut down the client's system by performing remote aborting operations, maintaining a database that consist of all blocked client's system list. Whenever student (client) logs-in into the system then his/her attendance will automatically be stored and the connected students desktop will be shown to Teacher's machine.

### 1.2 MOTIVATION

As the system provides live desktop feeds of the students, it practically becomes impossible for the Examiner to gain access to live feeds for desktops of all the students present in the lab at the same time [1].

As the examiner is provided with a limited amount of screen to view at a time, this develops a loop hole in the monitoring system as the students can co–incedently perform cheating activities when their screen is not viewed.

The exam monitoring system provides a complete solution over such problem as it monitors the web access of the students system by restricting the websites the students can access. It also provides live screen feeds of the student system as per server system's request.

The system also keeps track of storage or any other devices connected to the students system. If any storage device is found attached to the student system, the Exam Monitoring System notifies the Server system system about the same, so that appropriate actions can be carried out.

The proposed system can be useful at various educational institutes like school and colleges, government orgasnisations, and offices. As of now, the system developed will only be for college and school use.

## 2. LITERATURE SURVEY

### 2.1 RELATED WORK

This system provides the live feeds of the student system [1], but Exam monitoring System provides web access control along with the screen monitoring, which allows the students

to only access websites that are allowed by the Examiner.

## 2.2 Problem Statement

Examiners face difficulties while monitoring the activites of all students in a practical exam at the same time. This allows atudents to perform cheating activities.

## 3. Proposed System

The project "Exam Monitoring System"is implemented using socket programming. The system follows a client server approach where each student connects to the server system which is controlled by the teacher/Examiner. The activites performed by the students are monitored by the Examiner. The system also helps to carry out other operations like providing attendance as student connects with the server system, notifying the server system as soon as an usb device is connected to the student system. Also by blocking the internet access to certain websites prevents the students to copy answers from the internet. This helps to improve the skill set and performance of the students in the practicals.

## 3.1 Proposed Architecture

The Figure 1 shows the working architecture of the exam onitoring system where on system acts as a server and is designated by the Examiner/teacher and others systems act as a ckient system and connect to the server system through LAN. These client systems are designated by the students.

## 4. Working Methodology

With Exam Monitoring System, the students can login within the system with their respective id, the login data will be forwarded to the server system. The system provides the monitoring and controlling information to the client system which is followed by all the systems connected in the network. the examiner can perform various operatios such as live monitoring of student screen and locking down of student system.

## 4.1 Remote Desktop Monitoring

The Examiner can easily and effectively monitor activites of the students connected in the network. If students found carrying out any copying activites or other activites, the examiner can issue warning through system or can lock student system.

## 4.2 USB Blocking

The exam Monitoring System keeps track of all the devices that are connectesd to the client system. If any storage devices is found connected to the student system, then the student system notifies the server system. This prevents the students to attach any external devices to the system.

## 4.3 Internet Blocking

The internet access for websites containing solutions will be blocked by the server system. The internet access will be re-

stricted to websites that are needed in case of online practical exams.

## 4.4 Screen Switching

The system monitors all the applications that are loaded by the user by monitoring the task manager, as each application has a fixed process id, the system checks for process id that are blacklisted by the administrator. The system notifies if any of the blacklisted process id are found active.

## 4.5 Online Attendance

The student id contains ID card no and roll no, during login the student enters this information which is transferred to the server system's database. This helps to provide an accurate count of no of students present in the practical and prevents any proxy attendance by the students.

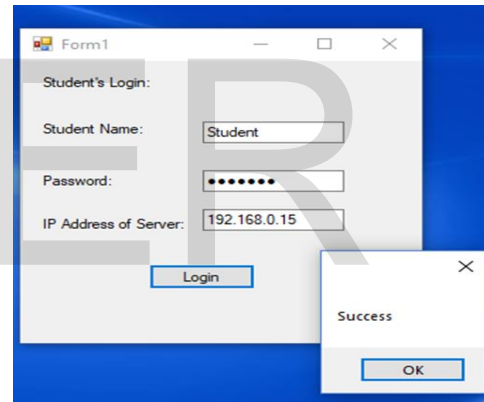## 5. MODULE IMPLEMANTIONS

### 5.1 Client Module



**Fig 5.1-** Client / Student login

The above module is for student login. The student enters the name and password to connect to the server after valid inputs provided it displays a successful message and Student's system is connected to the server.
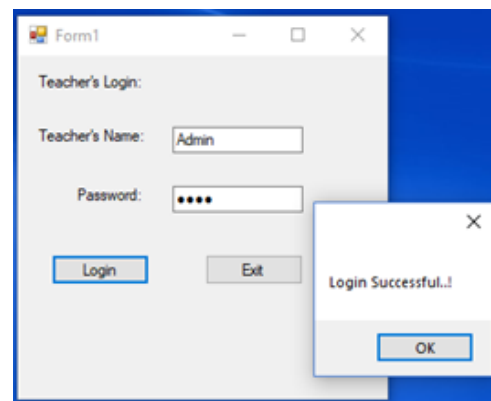
### 5.2 Server Module



**Fig 5.2-** Server /Teacher login

The above module is for Server login. The teacher enters the username and password as credentials ans connects to the system. The teccher can monitor activites performed by students and perform remote activites.
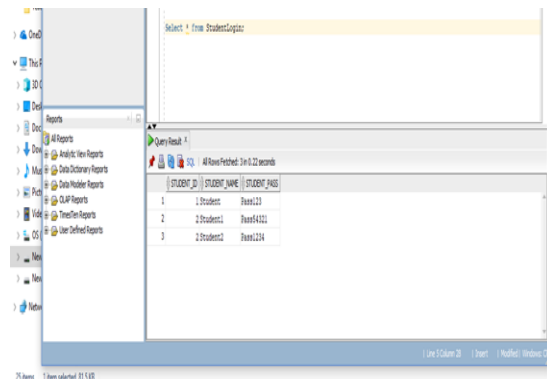
### 5.3 Online Attendance



**Fig 5.3-** online attendance module

Online attendance module displays the student's name, studeent id and student password. It heps to identify the student currently connected to the system.

## 6. CONCLUSION

The paper explains the concept of monitoring computer lab through a single system. The paper explains different modules that are implemented to provide a complete monitoring solution. It explains the complete benefit of monitoring a computer lab from single system and performing remote operations.

## 7. REFERENCES

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