

Lab Automation Using Remote Desktop

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Abstract— Lab Automation will be developed to overcome the problem faced by the lab managing staff. A general problem while conducting lab sessions is difficult to view every student's computer screen and to teach individual student separately every time. For this specific problem, lab monitoring and teaching systems provide easy control and monitoring and teaching facility to teachers for all students' activities on every computer in the lab. Lab Automation will provide effective means for carrying out interactive and efficient lab sessions. Most computer science/IT related subjects involve lab sessions. Lab Automation is a LAN based application will be developed for improving the effectiveness of lab sessions. Lab Automation provides means to improve maximum student-teacher interaction is provided as the teacher can show the lessons and lab exercises on the screen. The students can also exchange files by sending them to the teacher or to each other, any of this can be blocked as well. Also teacher can monitor student's screens while sitting on his/her own computer. Off track students can be helped immediately which can save a lot of time and effort. The students can also exchange files by sending them to the teacher. Also teacher can monitor student's screens while sitting on his/her own computer without leaving place. Student can ask the question to his teacher via sending him message. Also if any student wants to use some external device then he can ask for the permission. Proposed system aims to develop software solution that allows a teacher to remotely monitor his LAN network.

Keywords- LAN, Remote Desktop, Client, Server, Connectivity, Security.

I. INTRODUCTION

In computing, the term remote desktop refers to a software or operating system feature that allows a personal computer's desktop environment to be run remotely on one system (usually a PC, but the concept applies equally to a server), while being displayed on a separate client device. Remote desktop applications have varying features. Some allow attaching to an existing user's session (i.e., a running desktop) and "remote controlling", either displaying the remote control session or blanking the screen. Taking over a desktop remotely is a form of remote administration.

The System entitled "Lab Automation" is system will be design and develop in order to monitor all clients in the Local Area Network (LAN). Most of the organization they connect more numbers of computers or nodes to form a network to make their work easier to share their files and folders. While connecting we want to monitor the computer screen activities for security purpose. This system deals with monitoring the computer screen activities in the network within LAN. It has two methodologies one for Client and another for Server. In the proposed system we introduce current session option to monitor the network at the same time and in the accesses folder option shows the username and user accessed folders. While client logs in to the server, the Client IP Address and System names are added to the server. Server will display all the user names, from server we can monitor the particular Client Screen Activities like that currently opened screens, what are all the files created, modified and deleted. Remote Desktop Services is one of Microsoft Windows components to access a remote computer through the network. Only the user interface of the application is presented at the client. Any input is redirected over to the remote computer over the network.

II. PROPOSED WORK

The proposed system based on client-server based two tier architecture because of that we will be implements the functionality like performance based marking system and attendance system, in this the attendance and students performance marks are automatically stored in server database and useful to the teachers.

In the present situation the numbers of computers are present in lab and they are in LAN. But in every lab there is no such client server connectivity present. On such system students complete their given task. And some students does work which is not related to their given task. This is the main problem of the current lab management system.

We will be implement some features in it and develop a new system. This system will include some more features like from system the student will not be able to retrieve data through Pen-Drives, they will not be able to access any data from the system, without the permission of teachers for security purpose etc.

At the time of practical sessions, teachers can take attendance of students and writes in musters every day, but “Lab Automation System” provides a feature like when students are logged to system the attendance is automatically entered into database.

In this system if students complete their work at the time of each and every practical without copy then the system gives full marks to students. After next practical students wants to submit him/her work of last practical then system gives less mark. This is helpful for staff to taking the performance aggregate at the end of semester of every student

III. SYSTEM ARCHITECTURE

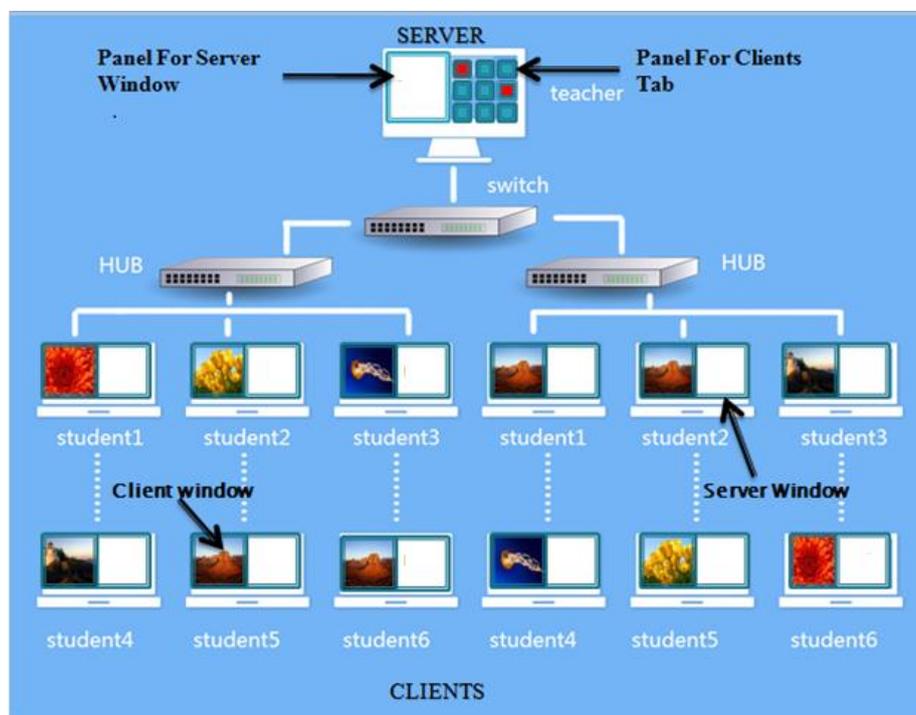


Fig.1. System Architecture

Figure 1.illustrates the architecture of proposed system. At the server side the server screen is divided into two panels first for server itself and second for showing a clients window tabs. Similarly at the Client side also computer screen is divided into two parts first one is for client itself and second one is for server window. If any request is coming from client side the client tab at the side of server will be blinks or displays a message.

IV. METHODOLOGY

The aim of this system is to solve the clients problem.so we can present the useful modules in this system which can be helpful to solve the client problem. The following modules shows the whole system how it is reliable and efficient.

The Lab Automation is divided in to seven modules based on their functionalities. These modules are as follows.

- Control
- Remote desktop
- Pen Drive Detection
- File Transfer
- Practical Attendance System
- Chat
- Framing

• Control

The Control module handles the terminal operations such as shutdown, restart and logoff, by specifying the IP address of the remote system. In this module the server and clients screen is divided into two parts. At the server side if teacher types any program/code on the screen then it will be automatically printed on all clients screen i.e. live streaming.

If any student having any error in the program/code and he/she wants to help form staff then this module will be provides the request/chatting facility to server (teacher), then teacher sees the request on server screen and able to access client machine through this module. After accessing of client screen teacher able to remove errors in the student program and compile and run the program through on server machine.

• Remote desktop

Using this module we can access the desktop of any remote system by giving the desired system's IP address and port number we can get the desktop of that system. It is useful for the administrator to monitor the activities of the employees of that organization.

The administrator can be able to get the desktop of that particular system and can warn the employees if they are doing any illegal activities.

If any student wants to access of internet facilities then this student cannot access internet directly. There is need to send a request to server for accessing internet, if server allows the student for internet access then internet service is available for student.

• Pen Drive Detection

This module defines the detection of the pen drive port. When the external device is added to the client systems, then the server will get a message from that particular client system with IP address. Then the server knows. This is used in any lab examinations. If any student will try for copying by using pen drives then the server knows that client system and will take an action on him.

• File Transfer

Using this module we can transfer files between the client and the server based on the IP address.

• Practical Attendance System

When students starts practical session, then students attendance would be automatically entered into database without any proxy. There is no need to the staff to take extra attendance of class/batch.

• Chat

This module provides us the chat facility. Using this chat the server system and the client system can communicate with each other. The administrator can chat with the desired employee.

V. CONCLUSION

In this research, it can be concluded that an idea of cognitive skill can be analyzed for students by using problem solving based on networking techniques. Developing system is a complete monitoring application design and implemented to observe all out bounded task perform by client in the network. Systems provide and sophisticated, automated system to provide customize window at network client. A systems avoid malpractice, misconduct during examination and improves quality assessment.

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