

Computer Lab Monitoring System

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Abstract— Lab management system is developed to overcome the problem faced by the lab managing staff. To Monitor a LAN, the monitoring server is typically connected to a monitor port on the switch. If multiple Switches are used in an installation, the monitoring Server may need a connection to all of them. That connection can either be a physical cable, or if your network switches support it, a LAN specifically configured for monitoring traffic. LAN monitoring project aims to develop various network utilities which are required to effectively monitor a LAN network. Project aims to develop an integrated software solution that allows a network administrator to remotely monitor his LAN network.

Keywords: LAN, Server, Client, Connectivity.

I. INTRODUCTION

Background

In the present situation the number of system are present in lab and they are in LAN also but in every lab there is no such client server connectivity present. On such system students can complete their given task and they can also do some other work which is not related to their given task. This is the main problem of the current lab management system. The other problem of the present existing lab management is that the lecturer cannot supervise the student activities.

The existing system presents an introduction of an embedded processor-based laboratory environment monitor system and its design for hardware and software. This system aims at completing monitoring a variety of real-time data. This system achieves the intelligent management of laboratory. By wired or wireless means, the laboratory monitoring system can communicate with PC.

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either be a physical cable, or if your network switches support it, a LAN specifically configured for monitoring traffic. LAN monitoring project aims to develop various network utilities which are required to effectively monitor a LAN network.

Aim & Objective

Our project aim is to monitor the activities of students by the lecturer and to maintain the control and discipline while student's practical performance.

- i. To provide remote access to labs in various disciplines of computer engineering.
- ii. To provide a complete learning management system around labs where students can avail the various tools for learning including video lectures, practical performance, etc. with rules and regulation under vigilance of faculty.

Motivation

The existing system presents an introduction of an embedded processor-based laboratory environment monitor system and its design for hardware and software. This system aims at completing monitoring a variety of real-time data. This system achieves the intelligent management of

laboratory. By wired or wireless means, the laboratory monitoring system can communicate with PC.

We implemented some features in it and developed 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, etc.

II. LITERATURE SURVEY

A. Related Work

[1] This is based on sensor in which monitoring is done through embedded sensor in system. But we are implementing the system on LAN without using sensor. We are including the concept of message sending, command giving, etc.

[2] This system presents an introduction of an embedded processor-based laboratory environment monitor system and its design for hardware and software. This system aims at completing monitoring a variety of real-time data. This system achieves the intelligent management of laboratory. By wired or wireless means, the laboratory monitoring system can communicate with PC.

[3] Computer labs can be found in libraries, schools, government buildings, science labs, community centers, companies with IT departments that requires such a place for their employees to do their jobs, and research centers. Printers, scanners, and other peripherals may augment the lab setup. But we are making this system just for college use.

[4] The problems faced in computer laboratories is lacking consciousness for service and standardized management, lacking means for executing and maintaining, no standardized process, no record for software and hardware configuration and change as well, and also changing configuration randomly. Our project will help in reducing these problems.

[5] This tells about the organization about computers in computer lab. We learn about arranging computers and managing them.

B. Problem Statement

It is observed that students access a lot more functions/software of the system (computer) other than the one which is required for the practical performance in the practical slot. It was also observed that it is difficult for the faculty to supervise each and every student all the time.

III. PROPOSED SYSTEM

A. Proposed Approach

This system is developed to overcome the existing problem. In this system there is Server and Client connected with each other in the LAN of which it will provide the good

interface for performing practical to the student and it will help lecturers to monitor individual student's activity on their system. On the basis of that performance the lecturer can give marks on every practical and can view the performed practical of the individual student.

The below fig 1 shows the flow of the Client-Server Connectivity.

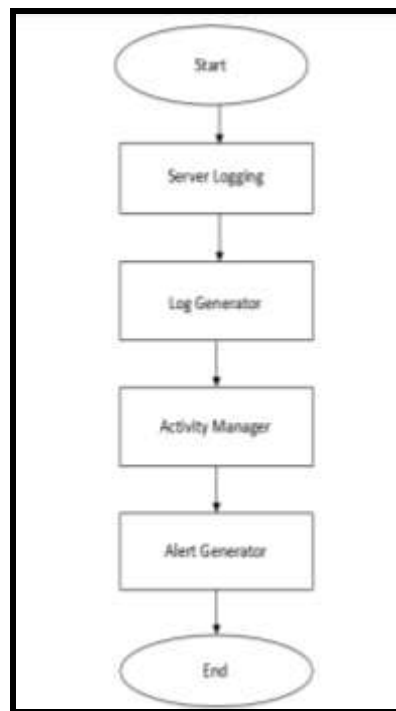


Fig 1: Flow Chart of Proposed System

B. Proposed Architecture

CONNECTIVITY DIAGRAM BETWEEN CLIENT-SERVER

The below fig 2 is showing the connectivity between Client and Server.

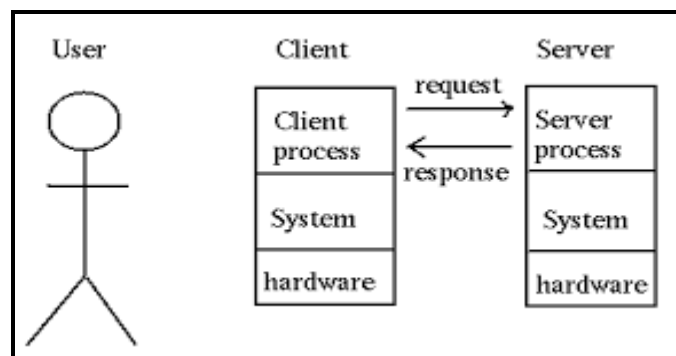


Fig 2: Connectivity Diagram

In this system there is one user handling client system which is sending request to Server through Client Process and Server responding it through Server Process. Both the system have their own software and hardware.

C. Basic Steps

- Step 1: Server will start listening.
- Step 2: Client will send request.
- Step 3: Client will get connected with Server.
- Step 4: Client will send its detail to Server.
- Step 5: Details will be received by the Server.
- Step 6: Client will perform practical and will send it to Server.
- Step 7: Server will see the details of Client.
- Step 8: Server will give some command to Client like shutdown, logout, etc.
- Step 9: Connection will be terminated.

D. Scenarios

Normal Scenario

In normal scenario the Server will start listening request from Client. For establishing connection the Client will send connection request to the Server. Once connection get established Client can send its detail, perform practical also can be send to the Server, etc.

If Pen Drive is attached

If in normal scenario incase pen drive get attached to system for taking data from system, the screen will get locked immediately after attaching pen drive to the system and the client will not be able to logged in until the removable device(pen drive) get detached from the system.

E. Project Plan

- 1. **Analysis:** In the existing system the system are in LAN network and they also have Client-Server Architecture but there is no such system made for monitoring the Client's activity.
- 2. **Literature Review:** This system presents and introduction of an embedded processor-based laboratory environment monitor system and its design for hardware and software. This system aims at completing **monitoring** a variety of real-time data. This system achieves the intelligent management of laboratory. By wired or wireless means, the laboratory monitoring system can communicate with PC.
- 3. **Model:** The below fig shows the **model** of Client-Server.

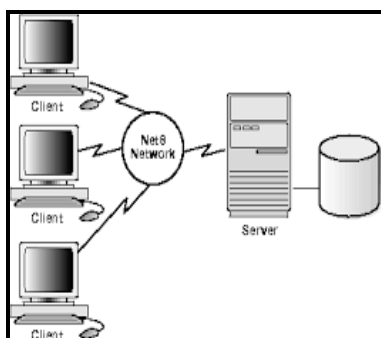


Fig 3: Basic Model of Client-Server

- 4. The above figure is showing Client-Server Connectivity in LAN network. The **server** has its own database which is storing all the data coming from Client.
- 5. **Methodology:** We firstly design and code for Client Side for connectivity with the Server. After this we will design and code for Server for activation and responding to the request to the Client. After **this** we will code for connectivity between them.
- 6. **Testing:** In this the code written will be tested. The execution of the system will also be tested in sequential form.

IV. OUTPUT

A. Server Side:

This is Server Side in which we can see that there are some systems placed in some boxes. There are some buttons and some text boxes which contain some information about the Server.

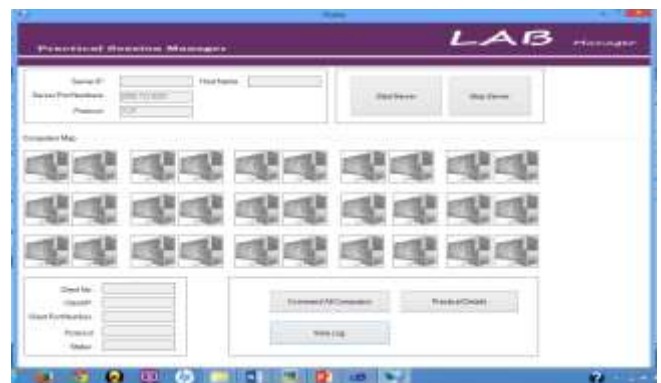


Fig 4: Server Side

B. Client Side:

This is Client Side in which we can see that there are some buttons which is used for connecting Server and for Sending Details to Server. There are some text boxes which contain some information for connecting and sending details to Server.



Fig 5: Client Side

C. *Server Starting:*

For starting Server first we need to click on Start Server button. After starting Server it will display one Message which will tell that Server is ON for responding the request coming from Client Side.



Fig 6: Server Starting

D. *Sending Connection Request to Server:*

For connecting with Server first Client need to enter its IP Address and after that it has to click on Connect button for sending connection request to the Server.



Fig 7: Sending Connection Request to Server

E. *After Connecting Client with Server:*

Once the connection get established between Client with Server the timer will get start.



Fig 7: After Connecting client with Server - Client Side

After establishing connection with Client the system which get connect will glow on Server and the details of the Server will be displayed in the above textbox present above the system icon.



Fig 8: After Connecting client with Server – Server Side

F. *Sending Details to Server:*

Once connection is established the Client can send its details to Server for keeping records of performance, etc.

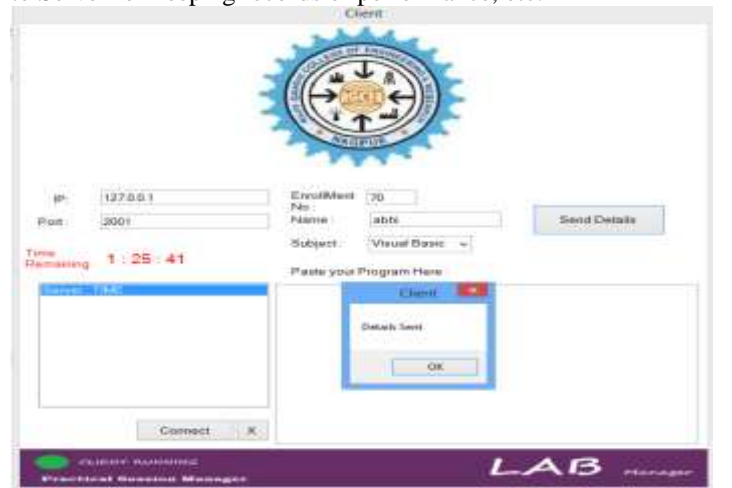


Fig 9: Sending Details to Server

G. Clients Details on Server:

After connecting client with Server, the Server will have all details of Client saved on its system. Take the mouse on the icon which is glowing it will open one new window. It will show the details related to the particular Client. The Server can also see the activity of client by clicking on various buttons present in the window.

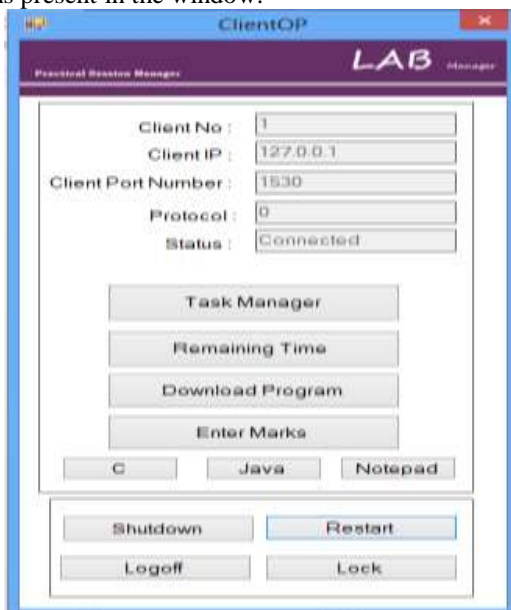


Fig 10: Clients Details on Server

H. If Removable Device Attached:

If any removable device like pen drive is attached to the system, the system screen will get locked completely and the client cannot enter into the system for accessing any data of system until it remove that removable device. Once it will be removed the system will ask for password, by entering which the Client will again get logged into the system.

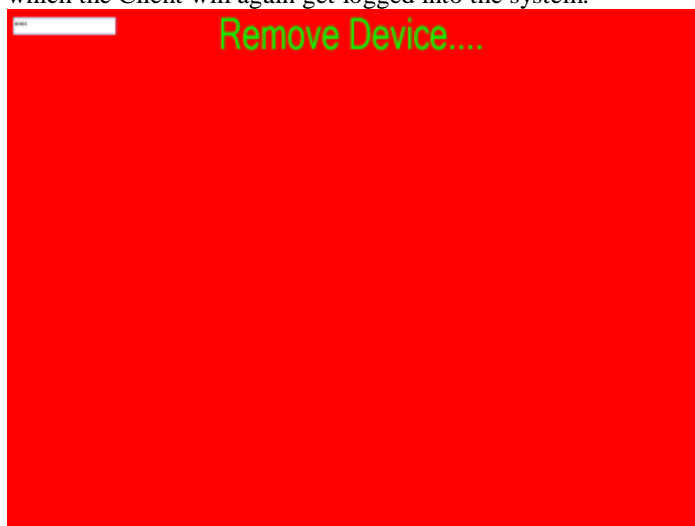


Fig 11: If Removable Device Attached

V. APPLICATION

1. In college computer labs it is used for monitoring the student activity (client) on their system by lecturer through server system. They can see their practical

performance, login time, can give marks on the basis of their performance, etc.

2. In firms or company it is used by manager for monitoring the staffs work and for accessing the necessary data. Manager can monitor his employees work by sitting in his cabin. He can give any command to his employee at any time.

VI. RESULT

The present system is developed on Local Host. This system is presently implemented on Local Host but in future it can be modified and can be implemented on LAN network.

VII. DISCUSSION

This system will help lecturer to supervise the activities of student with the help of client-server system and can give marks on practical performed by students. This will also help student to improve their practical knowledge. Because of this system student only have to perform the given task.

VIII. CONCLUSION

The proposed system is presently running on Local Host. Which means that the Server and Client both are running on same system. They can perform their task on the same system itself but simultaneously.

REFERENCES

- [1] Wang ping, wany Zheng, "IEEE, Design and Implementation of Open Computer Lab Monitoring and Management system". Computer and modernization, IEEE.11.pp.125-128,2007.
- [2] Jiang Linyang, Li Hailong, IEEE "Embedded Laboratory Environment Monitor System". IEEE, WASE International Conference on Information Engineering,pp.197-201, 2009.
- [3] http://en.wikipedia.org/wiki/Computer_lab
- [4] http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5228366&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D5228366
- [5] http://en.wikipedia.org/wiki/Laboratory_information_management_system