A PROJECT REPORT

"Server Client Monitoring System"

By

1) AYUSHMAN NANDI

2) DEBRUP MITRA

3) RAJDEEP DAS

ABSTRACT

This project **"Server Client Monitoring System"** provides us a simple interface for implementing fundamental technical functionalities in an organization. It can be used by educational institutes or colleges to run laboratory sessions easily and effectively. Achieving this objective is tedious job using traditional approach of practical sessions. This traditional approach is time consuming and not much effective. All these problems are solved using this project.

Throughout the project the focus has been on presenting a software in an easy and intelligible manner.

The project provides facilities like sharing mails and sharing display of teacher's monitor with student monitors during practical sessions and displaying information from college server on any computer in college without transferring any file.

TABLE OF CONTENT

1. INTRODUCTION

1.1 INTRODUCTION

Server Client Monitoring System is software which is helpful for an educational institute as well as any organization. The system is designed to share the data being shown on server PC to all other client PCs. Using this system it will be easy for any member in a laboratory to share his/her data with all other members of the laboratory. Simple and user friendly interface will help everyone to use the system efficiently.

1.2 OBJECTIVE

The objective of **Server Client Monitoring System** is to make practical sessions more interactive. To make student better understanding the practical and make learning more effective.

The main objective of this system is to reduce the consumption of time during explaining practical in laboratory sessions. In other words, our SMS has, following objectives :

➢ Easy operations for the operator of the system.

➢ User interfaces are user friendly and attractive, it takes very less time for the operator to get use-to with the system.

1.3 PROBLEM STATEMENT

During practical sessions in any educational institute professor explains the practical on his/her computer and student implements the same on their computer. Sometimes it becomes difficult for student to understand practical by such system of teaching. It is required to Design of a Computerized System, to speed up and make learning easy for student.

1.4   SCOPE OF THE PROJECT

This is generic type of software, suitable for all colleges. SCMS is a software which will be useful for organization to implement various functionalities with ease.

Server Client Monitoring system will reduce time consumption and make functionalities more effective.

2. SYSTEM ANALYSIS

2.1   EXISTING SYSTEM

In present scenario, during practical sessions in any educational institute professor explains the practical on his/her computer and student implements the same on their computer. Sometimes it becomes difficult for student to understand practical by such system of teaching.

2.2   PROPOSED SYSTEM

Server-Client Monitoring System is a simple and user friendly software that helps person to share data to the every system in the network using server PC. For example if a faculty is teaching in a laboratory and all students need the data that faculty is teaching then faculty will not need to ask students to come to them to teach any new topic, by using this system all students will get all data that faculty want to teach.

2.3   HARDWARE REQUIREMENT

- RAM   512 MB RAM
- HARD DRIVE   40 GB Hard Drive
- PROCESSOR   Intel i3 Processor
- LAN in organization

2.4   **SOFTWARE REQUIREMENT**

- Operating System : Windows 10
- Java SE 8 or higher
- Intellij IDEA/Eclipse IDE

3. OVERALL DESCRIPTION

3.1   PRODUCT PERSPECTIVE

The website **Student management System** is aimed towards recording a considerable number of student records and needs online assistance for managing records of students. Software should be user-friendly, 'quick to learn' and reliable website for the above purpose.

Student management System is intended to be a stand-alone product and should not depend on the availability of other software. The system will also have an administrator who has full-fledged rights with regards to performing all actions related to control and management of the website.

3.2   OPERATING ENVIRONMENT

This product can be operate on any platform

3.3 USER CHARACTERISTIC

There are two types of user

- Server

- Client

3.4 CONSTRAINT

For access following constraint is to be followed

- Every user must be comfortable using computer
- .Before starting client software, server must be started

4. TECHNOLOGY IMPLEMENTED

4.1 SOCKET PROGRAMMING

Sockets provide the communication mechanism between two computers using TCP. A client program creates a socket on its end of the communication and attempts to connect that socket to a server.

When the connection is made, the server creates a socket object on its end of the communication. The client and the server can now communicate by writing to and reading from the socket.

The following steps occur when establishing a TCP connection between two computers using sockets –

- The server instantiates a ServerSocket object, denoting which port number communication is to occur on.

- The server invokes the accept() method of the ServerSocket class. This method waits until a client connects to the server on the given port.

- After the server is waiting, a client instantiates a Socket object, specifying the server name and the port number to connect to.

- The constructor of the Socket class attempts to connect the client to the specified server and the port number. If communication is established, the client now has a Socket object capable of communicating with the server.

- On the server side, the accept() method returns a reference to a new socket on the server that is connected to the client's socket.

After the connections are established, communication can occur using I/O streams. Each socket has both an OutputStream and an InputStream. The client's OutputStream is connected to the server's InputStream, and the client's InputStream is connected to the server's OutputStream.

4.2   SIMPLE NETWORK MANAGEMENT PROTOCOL

SNMP is one of the widely accepted protocols to manage and monitor network elements. Most of the professional–grade network elements come with bundled SNMP agent. These agents have to be enabled and configured to communicate with the network management system (NMS). SNMP consists of

- SNMP Manager
- Managed devices
- SNMP agent
- Management Information Database Otherwise called as Management Information Base (MIB)

SNMP Manager:

A manager or management system is a separate entity that is responsible to communicate with the SNMP agent implemented network devices. This is typically a computer that is used to run one or more network management systems.

Managed Devices:

A managed device or the network element is a part of the network that requires some form of monitoring and management e.g. routers, switches, servers, workstations, printers, UPSs, etc...

SNMP Agent:

The agent is a program that is packaged within the network element. Enabling the agent allows it to collect the management information database from the device locally and makes it available to the SNMP manager, when it is queried for. These agents could be standard (e.g. Net-SNMP) or specific to a vendor (e.g. HP insight agent)

Management Information database or Management Information Base (MIB):

The SNMP manager uses this database to request the agent for specific information and further translates the information as needed for the Network Management System (NMS). This commonly shared database between the Agent and the Manager is called Management Information Base (MIB)

5. OUTPUTS
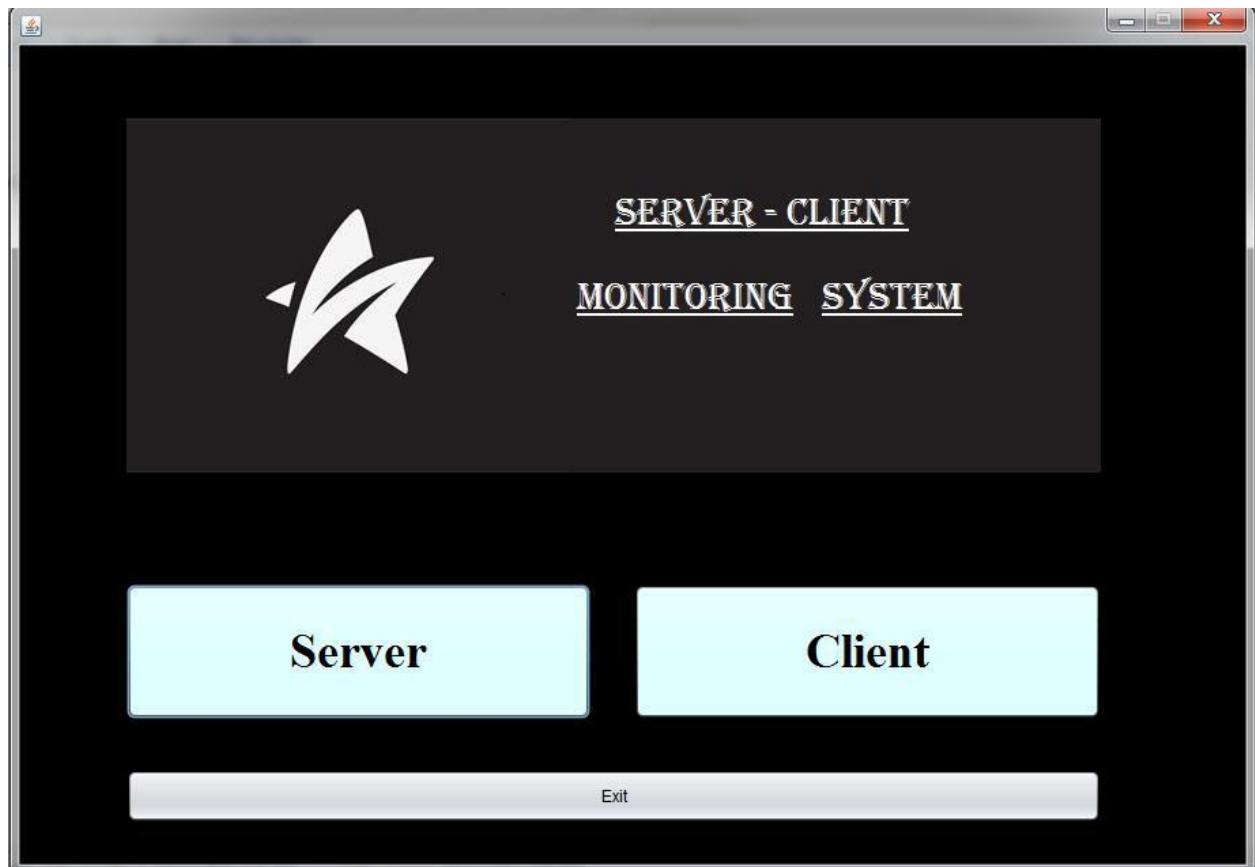
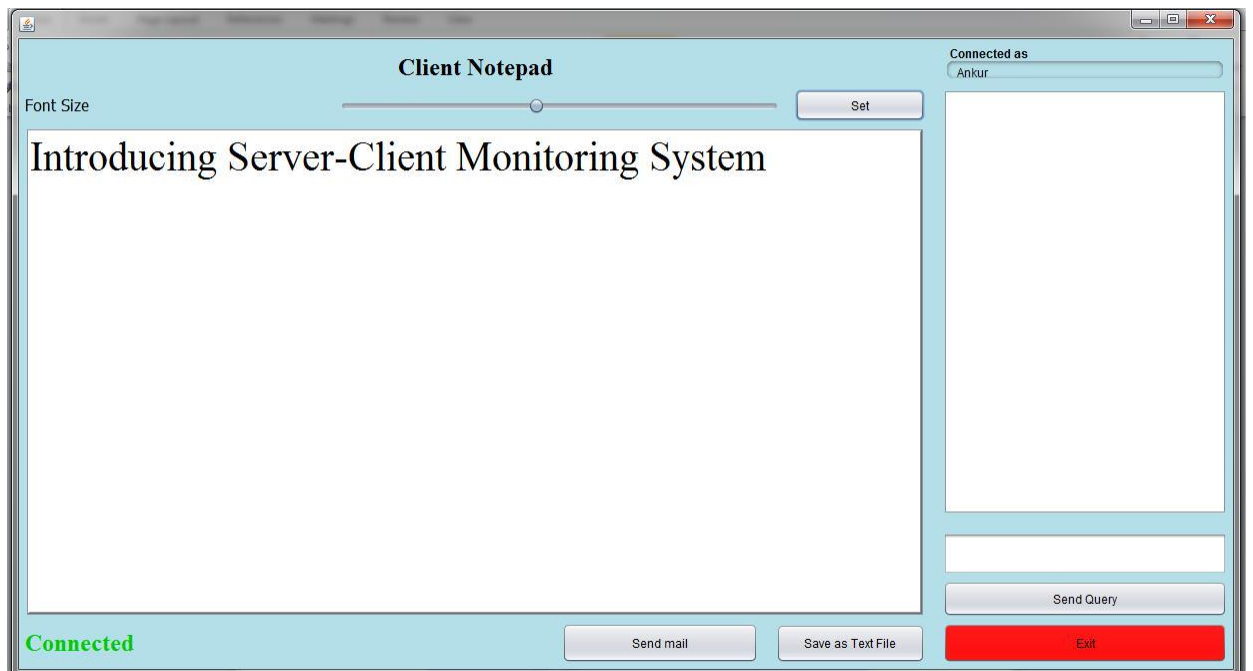

Home Screen
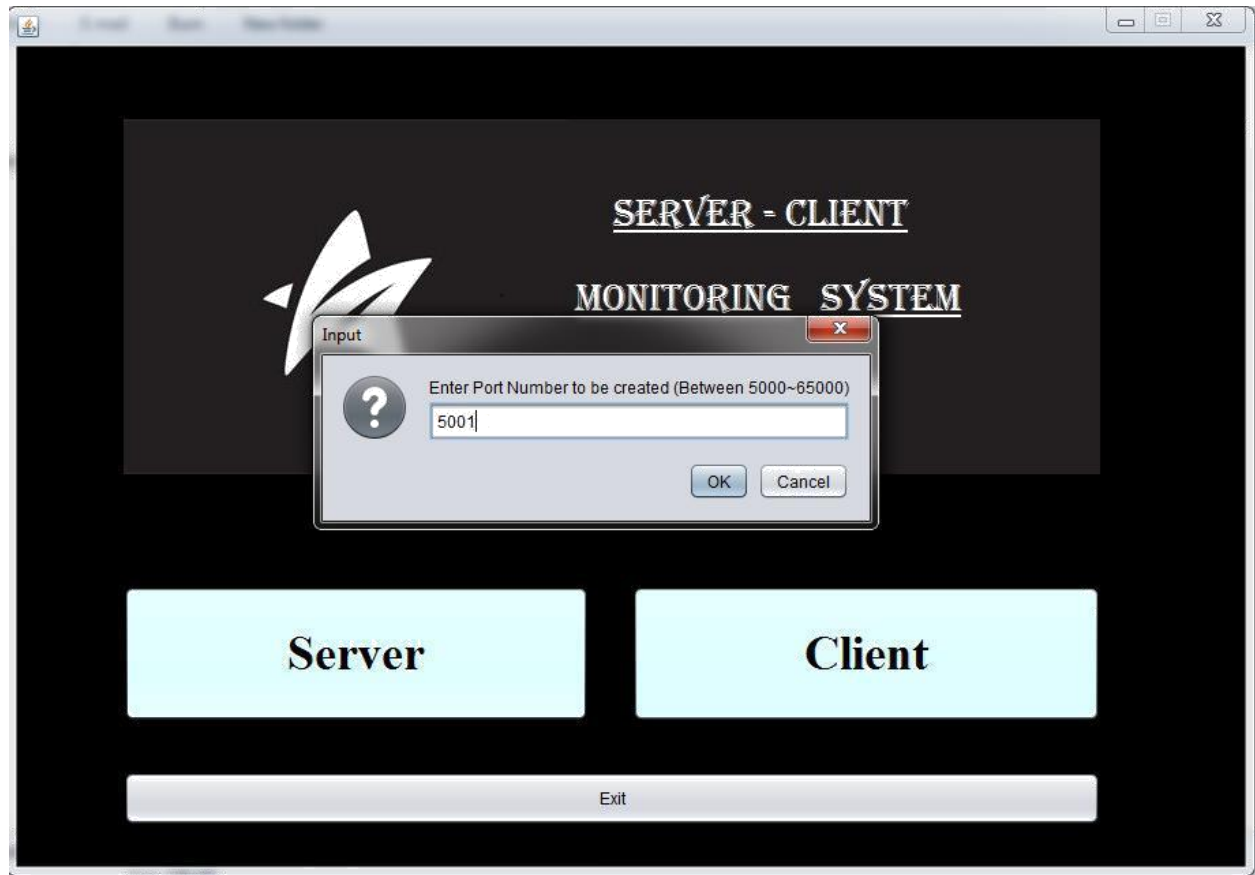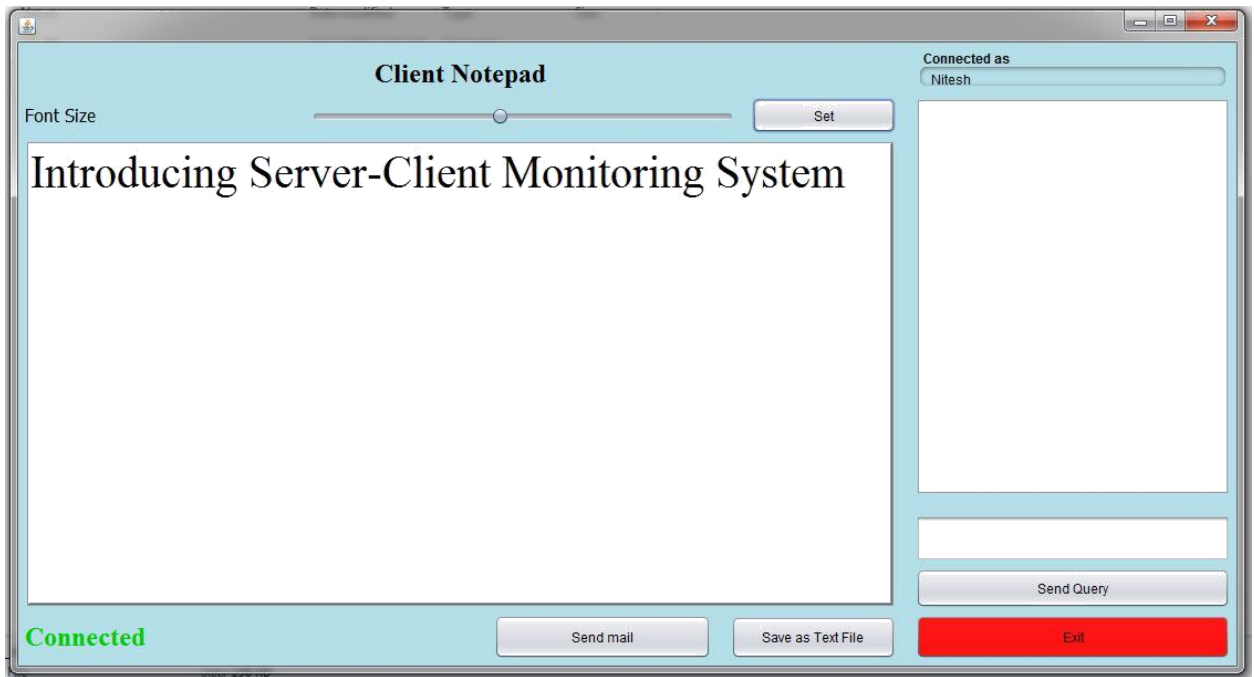
Entering Server Port Number
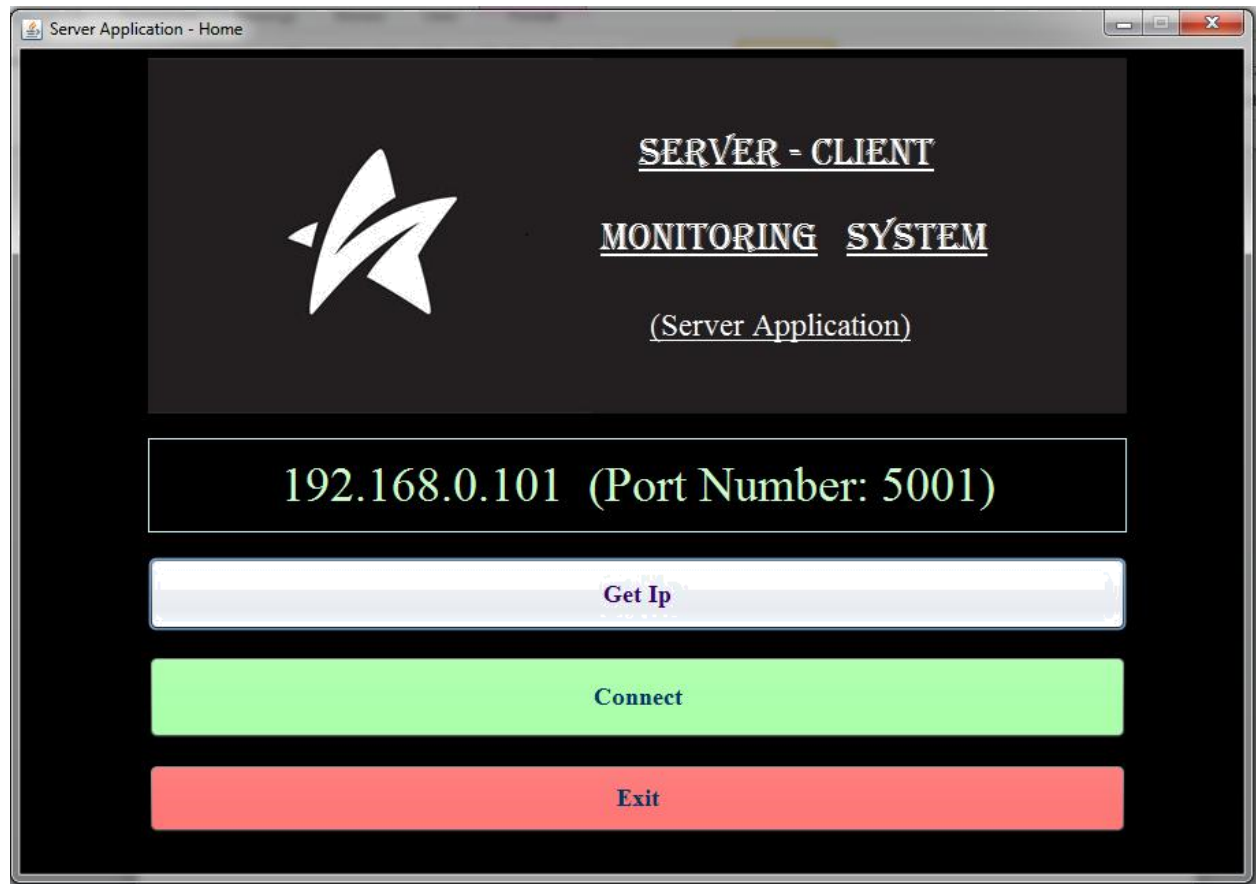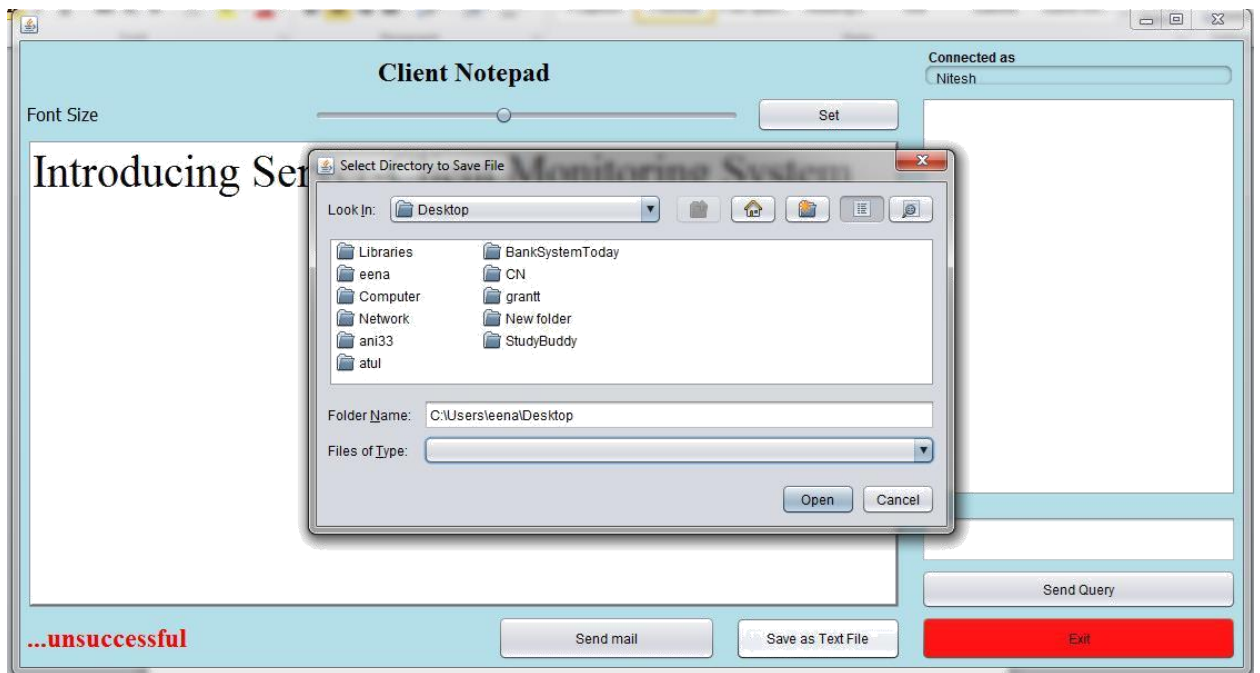
Server IP Address

Connecting Client
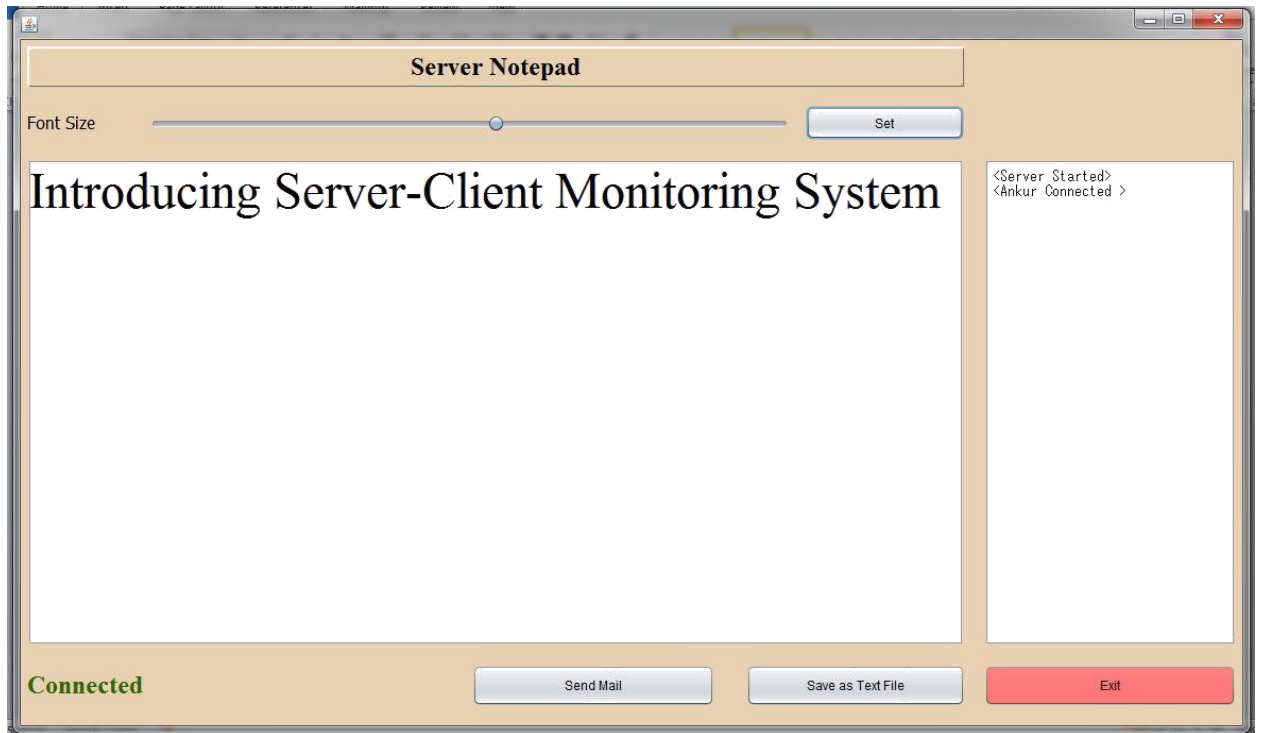
Server Side

Client 1

Client 2

Save as Text File

6. FUTURE SCOPE

- This system can be implemented in many business organizations.
- It can be used to share display of multimedia files over network

7. CONCLUSION

This REPORT has given all the details of the application needed to be built. The system is helpful to perform efficient and interactive practical sessions . It provides easy, faster teaching way.

8. REFERENCES

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Books

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