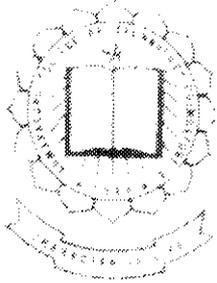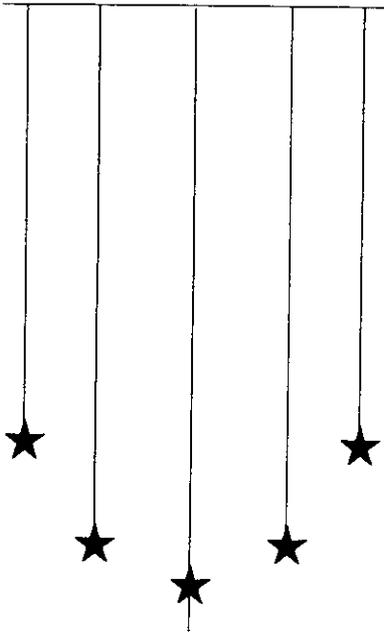# NETWORK SUPERVISOR

PROJECT REPORT

SUBMITTED BY

N.V.GANESH SRINIVASAN   (0037Q0032)

GUIDED BY

Mr.M.MANIKANTAN M.C.A
LECTURER.

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN
APPLIED SCIENCE-COMPUTER TECHNOLOGY
OF THE BHARATHIAR UNIVERSITY, COIMBATORE.

2001-2002

Department of Computer Science and Engineering

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE – 641006

KUMARAGURU COLLEGE OF TECHNOLOGY
Coimbatore-641006

Department of Computer Science and Engineering

CERTIFICATE

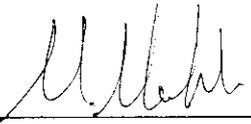This is to certify that the project report entitled
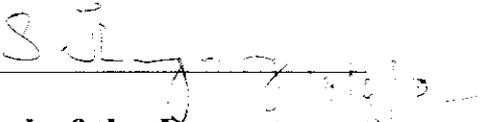
NETWORK SUPERVISOR

Has been submitted by

Mr. N.V.GANESH SRINIVASAN,

In partial fulfillment of the requirements for the Award of degree of

Master Of Science-Applied Sciences (Computer Technology) in the Computer

science and Engineering branch of the Bharathiar University.
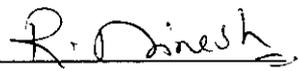
Coimbatore-641 046 during the year. 2000-2002.

(Guide)   **(Head of the Department)**

This is to certify that the candidate was examined by us in the Project viva-voce

examination held on _2/5 - 4 - 2002_ and his University Register number   is

0037Q0032.

(Internal Examiner) (25/4/02)   **(External Examiner)**

GENIUS SYSTEMS

SOFTWARE DEVELOPMENT & TRAINING CENTRE

Date : 17.04.2002

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. **N.V. Ganesh Srinivasan** M.Sc., (Computer Technology) student of **Kumaraguru College of Technology**, Coimbatore, affiliated to **Bharathiar University** has successfully completed the project work titled "**Network Supervisor**" in our organization from **January – 2002 to April - 2002.**

During the period his performance, conduct and character were found in good. We wish his success in all his future endeavors.

For Genius Systems, Erode

R. SUBRAMANIAN
Managing Director.

Declaration

DECLARATION

I hereby declare that this project entitled

NETWORK SUPERVISOR

Submitted in partial fulfillment of the requirement for the award of the

degree of M.Sc., (Applied Science – Computer Technology) is the report

of the original work done by me during the period of study (2001-2002) in
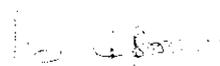
KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE-46

Under the supervision of

Mr.M.Manikantan MCA
Lecturer
(Computer Science and Engineering)

Name	Register Number	Signature
N.V.Ganesh Srinivasan	**0037Q0032**	

Place: **Coimbatore**
Date:

Acknowledgement

ACKNOWLEDGEMENT

I express my deep sense of gratitude to our principal of our college **Dr.K.K.Padmanabhan B.Sc (Engg.) M.Tech, Ph.D.,** for having provided necessary facilities for the successful completion of my project.

I also extend my sincere thanks to **Dr.S.Thangasamy Ph.D.,** Head of the Department, for the help rendered by him to complete our project successfully.

I give my immense pleasure to express heartfelt thanks to my guide **Mr. M.Manikantan, MCA,** Lecturer, Department of Computer Science and Engineering, for his encouragement and valuable suggestions to make this project a successful one.

I express my sincere thanks to **Mr.R.Subramanian, M.S.,** Managing Director and **Mr.S.Senthilkumar,** Project Leader Genius Systems, Erode, for permitting me to do the project work and providing all the facilities to make the project a success.

I am extremely thankful to my Class Advisor **Mr.Dinesh Ranganathan, M.S.,** Senior Lecturer and our Project co-ordinator **Mr. Sivan Arul Selvan, M.Sc., MCA,** Senior Lecturer for his kind support, encouragement and valuable suggestions for completing the project.

Last but not least I extend my heartfelt thanks to all our faculty, friends and well wishers who helped me in completing this project work.

NETWORK SUPERVISOR

In the world of Technology of Information gathering. processing and distribution has made the world grows even faster than the decades. Due to rapid technological process, these areas are rapidly converging and the differences between the collection of information and processing them are disappearing. The merging of the computers and communications had profound the influence on the way computer systems are organized. The system of distributed computers is interconnected to raise the concept of 'NETWORKS'.

Varieties of software are available to construct a Network. Novell NetWare. UNIX and Windows NT are Network software's. Windows 95/98 is also used for peer-peer networking.

In every Network, it is very important to know the clients activity. and control them. In Novell Netware, Windows NT the supervisor has some power to know about the client's activity and control them. The supervisor can find out an opened files in the clients system but supervisor cannot view the content of the screen also has the power to disconnect the login.

The system NETWORK SUPERVISOR is developed to meet the needs described in the above. The above problems are solved by through this Network supervisor. It is a Windows based tool worked under Windows NT system or peer-peer Network system.

The system developed is able to control the client and able to monitor the clients. Also the system is capable of communicate between the client and the server and vice versa. This also List the number of clients currently login.

The system is developed to manage the clients added to the server and the server is capable of shutdowns the system or restart them. This proposes the system resources as a helpline for the administrator or the user.

The system has two modules called client and server so that the achievement of the proposed system is achieved .The system is developed as the additional features of the network administrator and it is designed in such that it can be implemented in the internet also on future enhancements.

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Introduction

INTRODUCTION

ORGANIZATION PROFILE

"Genius Systems" located at Erode is one of the leading, Consulting, Software development and product development company. The company provides solutions for financial services, telecommunications, insurance and networking. Genius Systems employees are skilled in current and latest technologies. Employees are dedicated professionals assigned to each client and committed to the client's systems.

The Aspects of the Company are:

➤ Responsive solution to Business needs.

➤ System Resources that is available for immediate deployment.

➤ Flexible and available staffing team with state of art Technical skills.

The company provides solutions for the following area:

➤ Migration to client server technology from legacy systems

➤ Explosive growth into internet and e-Commerce technologies

➤ Connecting systems globally into worldwide networks

➤ Integrating enterprise wide business applications (ERPs)

➤ Developing IT resources for rapid through staff augmentation contracts

➤ Managing the escalating IT computing costs – specifically labour

➤ Implementing staffing strategies to deal with a shortage of skilled workers

Literature survey

LITERATURE SURVEY

About Computer Networks

The Interconnection of group of Autonomous computers is called as COMPUTER NETWORKS. A single computer serving all of the organization's computational needs has been replaced by one in which a large number of separate but interconnected computers do the job. These systems are called computer networks.

There is also difference between the computer network and distributed systems. The difference is that existence of multiple autonomous computers is transparent that are not visible to the user. It depends on the operating system. This is built on the top of the network.

WHY WE GO FOR NETWORKS?

High Reliability

It is that most of the files are replicated to one or more machines. Also it is easy to share even the processor itself.

Cost Estimation

Small computers have price/performance than large ones. Mainframes are faster than the personal computers, but they cost thousand times more .So that we use shared file server machines. So, that we go for client-server model.

Resource sharing

Sharing of files and the ability to send and accessing them is called as resource sharing.

Types of Network

All the networks are based on the size, transmission technology, and their topology.

Local Area Network

These are networks within a single building. They are only few kms. The PC's are connected together by the workstations in certain building like offices to share the resources and the access of information.

Wide Area Network

This is a large computer of connecting large areas such as country or a continent. This runs usually an application programs.

Metropolitan Area Network

This is next to LAN using similar technology and it covers a large group of computers in near by cities. They uses the DQDB (distributed queue dual bus) consist of unidirectional buses to which the computers are connected.

TCP/IP PROTOCOLS

Layer Architecture

In general the network in OSI model (minus the session layer and the presentation layer) has proven to exceptionally useful. The protocols of TCP/IP are widely used. The frame work of the layer of the TCP/IP is shown below.

Fig 2.1

Application layer

Transport layer

Internet layer

Host to network
layer
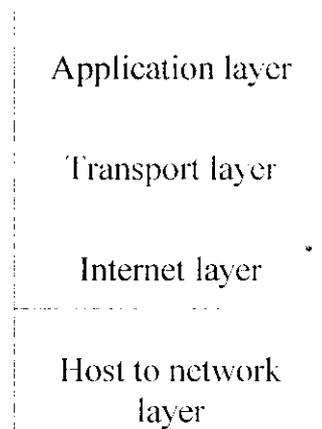
(Layer Architecture)

The host-to-network layer is that nothing but the establishing the physical connection (Physical Layer +Data link Layer). This does the work of the physical layer of the OSI model.

The Internet layer job is to send the data in official packet format called IP. This delivers the packets and routing is the major issue of this layer.

The application layer and the transport and the Network layer together constitute the protocols.

PROTOCOL

A set of rules for communicating among computers. These rules govern format, timing, sequencing and error control. They're a three level in protocol lower level, mid level, and high level.

Ethernet, Token, ring, ARC net and Fiber distributed data interface are the lower level protocols. The mid level protocols that operate on top of these low level protocols are Net BIOS, IPX/SPX and TCP/IP. The file redirection occurs through protocol such as IBM's Server Message Blocks (SMB) standard on Novell's Netware core protocol (NCP) are the higher level protocols.

OPERATION OF TCP/IP

To make clear, that the total communications facility may consists of multiple networks. Some sort of network access protocol, such as token ring, is used to connect a computer to a sub network. This protocol enables the host to send data across the sub network to another host or, in the case of another sub network, to a router.

TCP service is obtained by having both the sender and receiver create end points called sockets. Each socket has a Socket Number (Address) consist of IP address of the host and a 16 bit number local to that of host , called **PORT**.

Port is the TCP name for TSAP (Transport Service Access Point). In the Internet; these endpoints are (IP address, Local Port).To obtain TCP service, a connection must explicitly establish between a socket on the sending machine and the socket on the receiving machine.

A Socket is used for multiple connections at the same time. In other words, two or more connections may terminate at the same socket.

Primitive	Meaning
SOCKET	Create a new communication endpoint
BIND	Attach a local address to a socket
LISTEN	Announce willingness to accept connections.
ACCEPT	Block the Caller until a connection attempt arrives
CONNECT	Actively attempt to establish a connection
SEND	Send some data over the Connection

RECEIVE	Receive the data from the Connection
CLOSE	Release the Connection.

Table 2.1

(The Socket primitives for TCP)

For successful communication, every entity in the overall system must have a unique address. Actually, two levels of addressing are needed. Each host on a sub network must have a unique global Internet address; this allows the data to be delivered to the proper host. A port is actually a subset of SOCKET. Sockets consist of both an IP address and a port number.

Assume that the sending process generates a block of data and passed this to TCP. TCP may break this block into smaller pieces to make it more manageable. To each of these pieces TCP appends control information known as the TCP header, thereby forming a TCP segment.

Coming to the TCP header it includes variety of items as described below.

Destination port-When the TCP entity at destination receives the segment, it must know to whom the data to be delivered

Source Port		Destination Port	
Sequence Number			
Acknowledgement Number			
Data Offset	Reversed flags		Window
Check Sum		Urgent Pointer	
Options		Padding	
Beginning of Data			

Fig 2.2

(Reference model of TCP)

Sequence Number - TCP numbers the segment that it sends to a particular destination port sequentially

Checksum- Source includes a code the contents of the remainder of the segment. Destination layer compares the result with the incoming code. A discrepancy results if there has been some error in transmission.

Most applications require a reliable end-to-end protocol and thus make use of TCP. Some special purpose applications, for example, the simple network management protocol (SNMP) that uses an alternative host-to-host protocol known as user datagram protocol (UDP).

PORT ADDRESS

Every TCP/IP host and every workstation has a unique Internet address, consisting of a centrally assigned network ID and a locally administered local host address. This scheme enables the routing of messages between, as well as within, local area networks and recognizing Internet address is done by Address Recognition Protocol (ARP).
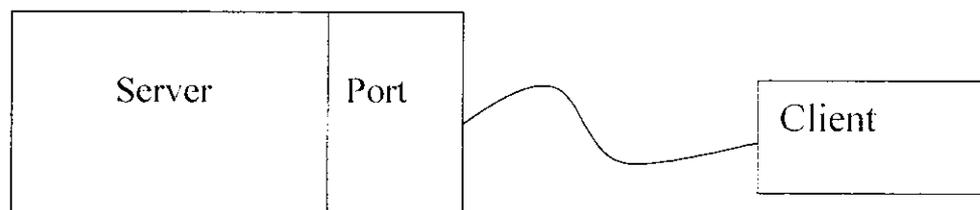

Fig 2.3

(Client-Server communication)

An Internet address has four parts, in the form AAA.BBB.CCC.DDD. Each part, or field, is usually a decimal number. Periods separate the fields. The class of the Internet address is A if the first field is from 0 to 127, B if the first field is from 128 to 191, or C if it is from 192 to 255. The first field should

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not exceed a value of 255. Here is an example of a class A Internet address: 89.1.10.2

The interpretation of Internet address depends on its classes. For class A addresses, the network portion of the address is the first field of the Internet address. For class B , the network portion is the first two fields. Class C addresses use the first three fields as the network portion of the address. The computer systems on a single network should all use class A, B, or C Internet addresses.

The host address porting of an Internet address consists of the rest of the fields after the network portion. Each field in the host address portion can have a value less than 256. You should not use 0 in all the host address fields; this can cause host systems to get confused. TCP/IP software, by convention, assumes that at least one of the fields is nonzero.

The size and range of the host address depend on the class. User may find the following Internet addresses already assigned on network:

192.10.100.1

192.10.100.2

192.10.100.3

These three Internet addresses are class C addresses, because the first field is 192. It is difficult to associate with individual workstations on the network, and so the numbering scheme enables you to assign a host name to each Internet address. This higher-level naming method is called domain naming. If needed one can setup their own addresses on the network and their own host id's in their organizations.

Problem Definition

PROBLEM DEFINITION

Failure to understand the true nature of the problem to be solved is a common and difficult issue. There are several various factors that contribute to lack of understanding.

Defining a problem is a must and the developer should understand the problem very thoroughly .It requires understanding of the problem domain and the problem environment. Techniques for gaining this knowledge include customer reviews and observations and actual performance of the tasks by the planner.

In our system the problem is that exist usually in the network .This persist the user led to confusion of the logging and forgot their password. In our system the system itself stores the login of the user and it keeps the detail of the user enter into the system.

We able to solve the problem as our system contain the two modules.

They are

> Client module

> Server module.

Client module cannot view the system and they are capable of only responding the Server. The Server is capable of monitor and manages the system and then able to retrieve the information of the system resources they need. They able to communicate with the other system also.

OVERVIEW OF THE SYSTEM

Introduction

Requirement analysis is used to analyze the knowledge about the existing system. Many types of networks exist, but the most common types of networks are LAN (Local Area Networks) and WAN (Wide Area Networks).In a LAN, computers are connected together within a local area. In a WAN, computers are farther apart and are connected via telephone/communication lines, radio waves, or other means of connection. Coming to the architecture of a network, it refers to two types:

1. Peer-to-peer
2. Client/Server technology.

Various studies are done to get the information like

How the data are processed within the organization?

How the users communicate between them?

How the users distribute the data to others for their use?

How the data are used safely in the organization?

Existing System

In a Peer-to-peer networking configuration, there is no server, and computers simply connect with each other in a workgroup to share files, printers and Internet access. This is most commonly found in home configurations.

In a client/server network, there is usually a Domain controller, which all of the computers log on to. This server can provide various services, including mail, file sharing, printer access as well as ensuring security across the network.

Limitations

Monitoring facility is does not used in the both client server computing and the Peer-to –Peer networks.

The ability to capture and sending information of the system resource is cannot be done on the existing system.

Apart from the network administrator the system is able to capture the above concept in details.

Proposed System

In a Peer-to-peer network such as Windows 95, Windows 98 there is no monitoring and controlling process between client and server. But in the client-server technology controlling is done, there is no monitoring is done.

Also we are able to capture the screen of the particular client and able to monitoring them. Also, we able to restrict them from misusing the system and control them by switching them away the system.Here the server is capable to collect the resources of the client and software used in that particular system.

Integrating all distributed system, heterogeneous hardware and software platforms, and various presentation and database management systems into assembles, cohesive, and secure single system.

It allows the processing to reside closed to the source of data being processed, therefore reducing network traffic and response time.

In messaging types, three types of communication are done. They are,

1. Unique-cast messaging- sending message to particular client machine.
2. Multi-cast messaging-Sending message to the selected clients.
3. Broad-cast messaging- sending message to all the clients.

Also the Server would perform the function that prohibit the client from doing their job by shutdown their systems and to restart them. In general they perform the functions such as,

- Monitoring
- Management
- Communication

The proposed system should be developed in such a way as to solve the above problem faced by the present normal system. The tool used to develop the system is Visual Basic for its flexibility and versatility. Proposed system uses powerful DLL functions to perform as high grade. The system is very user friendly and they are accessed by using menus. A good user interface is provided to the user .The Chatting is done to facilitate the user to communicate between them.

The system developed in a way such that they are very

- Simplicity
- Controllability
- Understandability
- Cost is very less

User Characteristics

- Client should have the basic knowledge of operating the computer.
- He/she should be know about the basic concepts of Networking.
- The Use of consistent menu format for menu selection and command input and functioning is enough to a person.

Feasibility study

Three types of feasibility study are studied. They are operational. technical and financial.

Operational feasibility deals with

- The proposed system does not perform any harm to the clients.
- The system performances in these network areas are excellent.
- The system does not produce poorer results due to the inclusion of TCP/IP protocol.
- The users involved in the planning and development of the project.

Technical feasibility deals with

- The necessary technologies exist in this project for the areas.
- The proposed equipment have the technical capacity to
- hold the data required to use the new system.
- The system can be developed in the internet areas. by attaching the clients in the specific router.
- The proposed system technically guarantees of accuracy, reliability, ease of access and data security.

Financial feasibility deals with

- The cost to conduct a full systems investigation.
- The cost of hardware and software for the class of application
- being considered.
- The benefits in the form of reduced costs or fewer costly errors.
- The cost if nothing changes (i.e., the proposed system is not developed).

Environmental

PROGRAMMING ENVIRONMENT

HARDWARE ENVIRONMENT

SERVER CONFIGURATION

Processor	: P III@700MHz
RAM	: 64 MB
Cache Memory	: 256 KB
Hard Disk	: 20 GB
FDD	: 1.44 MB
CD ROM	: Samsung, 52 X
Monitor	: Samsung, "14
Keyboard	: 104, TVS Gold
Mouse	: Logitech

CLIENT CONFIGURATION

Processor	: P III@550 MHz
RAM	: 64 MB
Cache Memory	: 256 KB
Hard Disk	: 10 GB
FDD	: 1.44 MB
CD ROM	: Samsung, 52 X
Monitor	: Samsung , "14
Keyboard	: 104, TVS Gold
Mouse	: Logitech

SOFTWARE ENVIRONMENT

Software	Visual Basic 6.0
Operating Systems	Windows NT/Windows 9X

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DESCRIPTION OF THE SOFTWARE

About Visual Basic 6.0

Visual Basic is an ideal programming language for developing sophisticated professional application for Microsoft windows. It makes use of graphical user Interface for creating powerful applications. This rich language enables us to develop many different types of applications. We can create programs that interact with databases, interact with the internet, and even interact with the hardware. It can be connected with any databases like Oracle, SQL Server etc.

Visual Basic is the first example of a successful component Object Model for programming in which third-party, reusable components could be dropped into the program to provide additional functionality. For the first time, we can create legitimate Windows applications without getting down to the "bare metal" of Windows API.

Features of Visual Basic:

Visual Basic has many features. It includes.

Data access features that allow uses to create database front end application and scalable service-side components for most popular enterprise level database.

ActiveX technologies that allow users to use the functionality provided by other applications such as Microsoft Word etc

Visual Basic provides the ability to develop and test applications using an interpretive run function. It allows for the creation of p-code and native code EXE files.

Includes a GUI development environment for development environment for developing Windows applications.

- ActiveX documents. DHTML application that helps to text browser applications

- IIS applications that help to build server-based applications

- Web Browser control

- FTP / HTTP support through a custom control

- Object-based development is possible using class modules.

- Rapid application Development (RAD).Allows for the creation of COM components such as ActiveX controls, DLLs, and Exe.

Visual Basic has many internet development possibilities, including the following:

1) It includes Winsock control. It has an excellent integrated

2) Help facility Books Online. Includes good debugging facilities

3) It has many wizards that help automate repetitive tasks.

4) Can be extended easily through the use of Windows API calls. hundreds of third-party controls and DLLs, and integration with other Windows applications through COM and DCOM

The VB6 has many database access methods to get at different types of data.

ADVANTAGES

Visual Basic has many advantages over other development languages. Here's a list of some of these advantages:

- Visual Basic has a Shorter learning curve and development time than C/C++, Delphi, and even PowerBuilder.

- Visual Basic allows us to create ActiveX controls. It allows us to reuse third-party controls and components, as well as our own.

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➤ Object oriented in nature. It's not a complete OOP language, but it's getting closer.

➤ Can integrate with the internet on both the server side and the client side.

➤ Can create ActiveX Automation servers. Integrates with Microsoft Transactions Server.

➤ Visual Basic removes the complexities of the Windows API from the programmer.

➤ It allows for rapid application development. Excellent for business applications.

Visual Basic Application:

Visual Basic is the most popular and powerful Rapid Application Development (RAD) tool under the windows environment. It is the Graphical User Interface (GUI) tool that helps in creating a time –consuming programming quickly.

The most common components of the Visual Basic are forms, controls, classes and procedures. There are different types of applications are available in VB. These different types are used when we need to solve a specific problem.

1. Standard EXE:

This is used to create a standalone applications that will not need to be run within another application. Most business applications will be of this type but may also include one or more of the following types of applications.

2. ActiveX DLL:

This type of application is generally created to be used by other applications for a particular service or services. The DLL must reside on the same machine as the controlling application. It runs within the same process spaces as the application that calls.

3. ActiveX Control:

This type of applications is used to design OCX components that can be used within a variety of applications. These tools will generally show up in a toolbox within a programming environment.

System Design

SYSTEM DESIGN AND DEVELOPMENT

Introduction

One of the aims of the system investigation is to try to establish the requirements of the users which the new system must satisfied. These are known as the logical requirements and the user has to produce the definition of logical system.

Logical Design

This software plays its role for Communication, messaging, control and viewing the client's screen.

There are two divisions to implement this work and they are

1. Server
2. Client

Network Supervisor SERVER:

Server receives all the information about the clients. when the client systems get started. The information's are listed in server system.

Communication:

This section deals the message transaction between server and client.

There are two parts in this section.

1. One way communication.
2. Two way communication.

➤ **One way communication:**

Only server can send message to a particular client or to all clients but clients cannot. The message from server will be displayed in client as dialog box.

➤ Two way communication:

Both server and client can send and receive message to each other.

In one way communication it receives the messages from the server and displays it in a dialog box. In two-way communication it receives the messages from the server and simultaneously sends the messages from the client.

Controlling Clients:

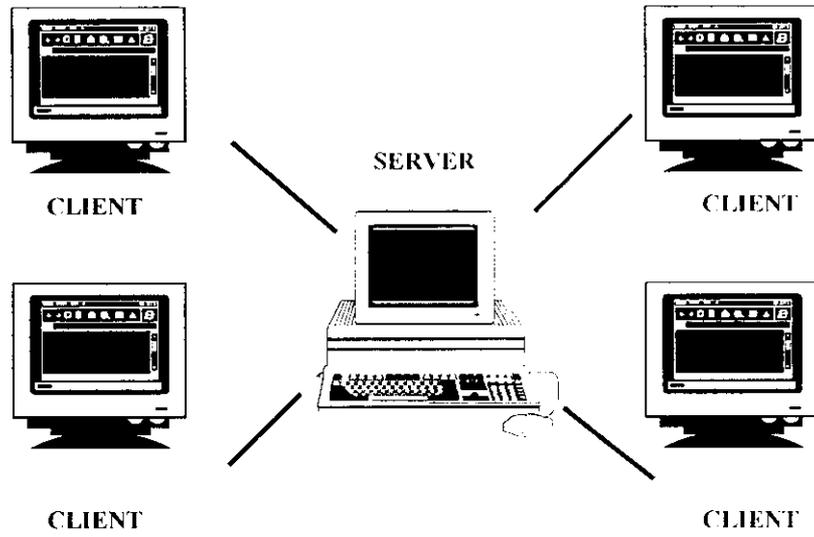The server can control the clients by shut downing or restarting the client system.

Viewing client screen:

The server can view the selection client's screen and can watch what they are doing by transferring client video RAM content.

Extracting the system Resources:

The server can view the selected client and their system resources are extracted by the server.

LOGICAL VIEW

(Fig 6.1)

COMMAND PROCESS IN Network Supervisor CLIENT

From server → **Receive Command**

↓

Parse Command

↓

Perform task for Command

↓

To server ← **Send response**
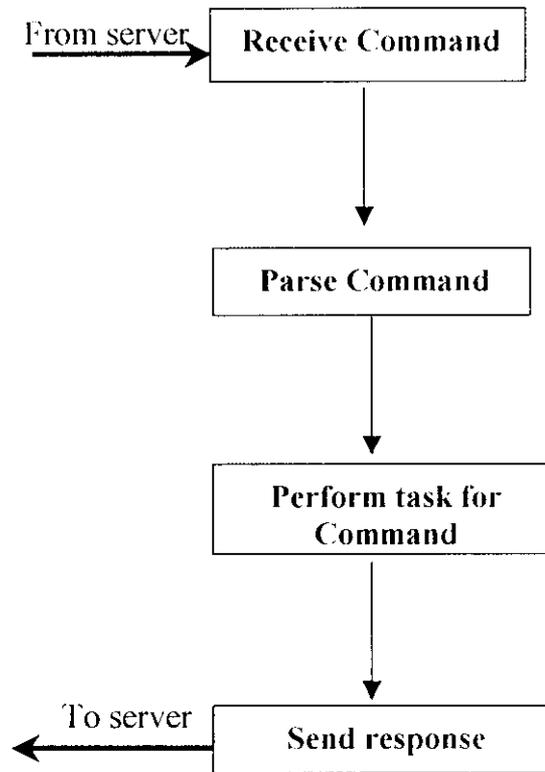
(Fig 6.2)
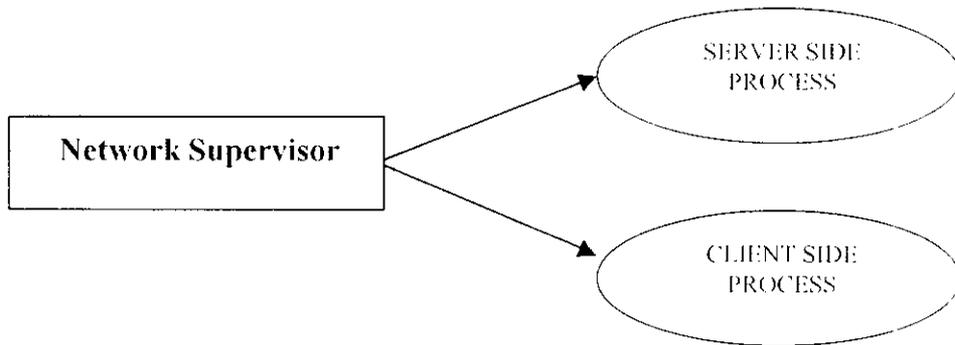
SYSTEM CHART

(Fig 6.3)

Network Supervisor SERVER

Process Chart

(Fig 6.4)

SYSTEM MODULE

SERVER

COMMUNICATION

MONITORING

CONTROLLING

(Fig 6.5)

FUNCTIONAL MODULE I

```
                    ┌─────────────────┐
                    │   MONITORING    │
                    └─────────────────┘
                             │
              ┌──────────────┴──────────────┐
              ▼                             ▼
      ┌─────────────────┐          ┌─────────────────┐
      │     SCREEN      │          │   CLIENT LIST   │
      │   MONITORING    │          └─────────────────┘
      └─────────────────┘
              │
      ┌───────┴───────┐
      ▼               ▼
┌───────────┐   ┌───────────┐
│   TASK    │   │ RESOURCE  │
│MONITORING │   │MONITORING │
└───────────┘   └───────────┘
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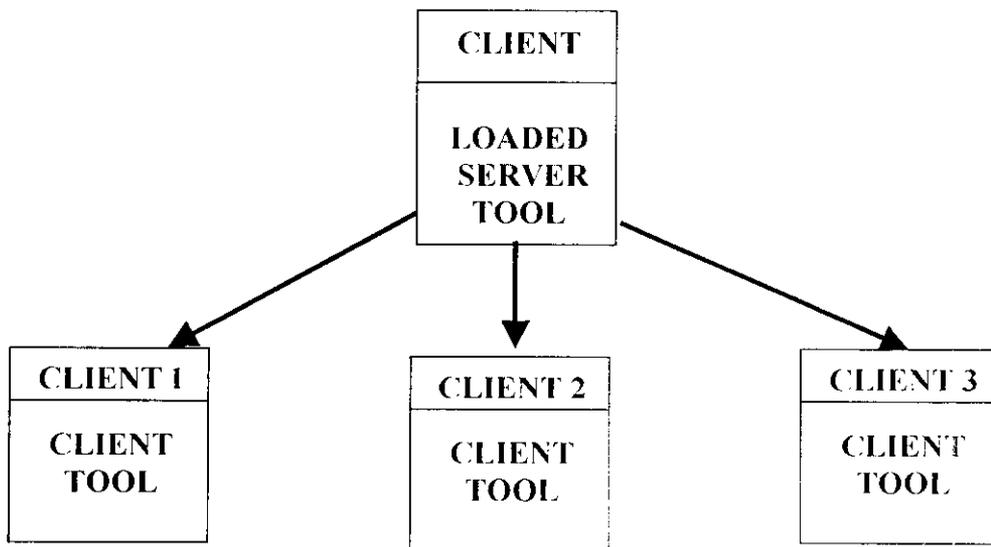
(Fig 6.6)

FUNCTIONAL MODULE II

COMMUNICATION

UNI-CLIENT	MULTI-CLIENT	BROADCAST
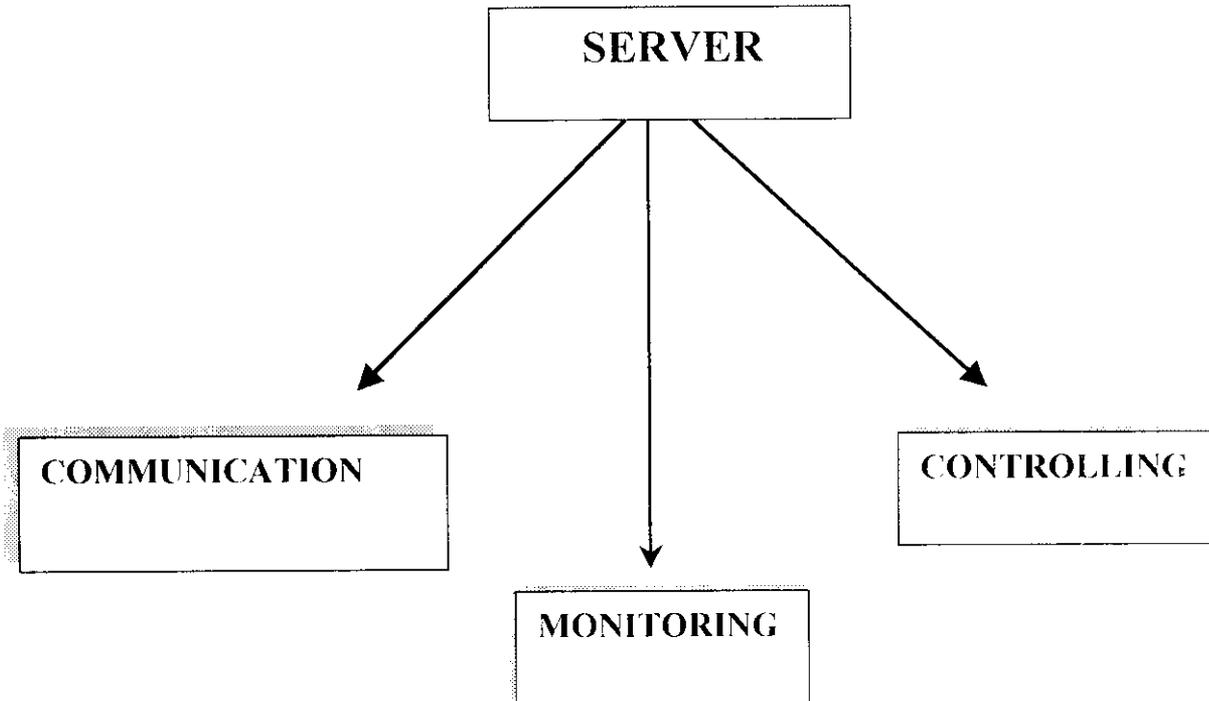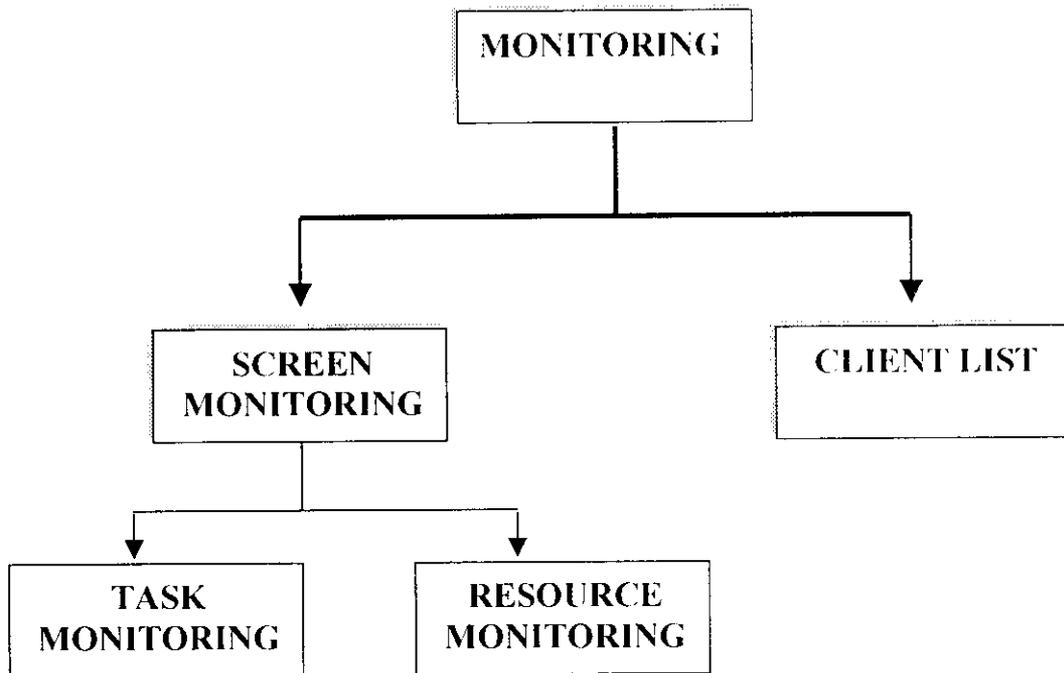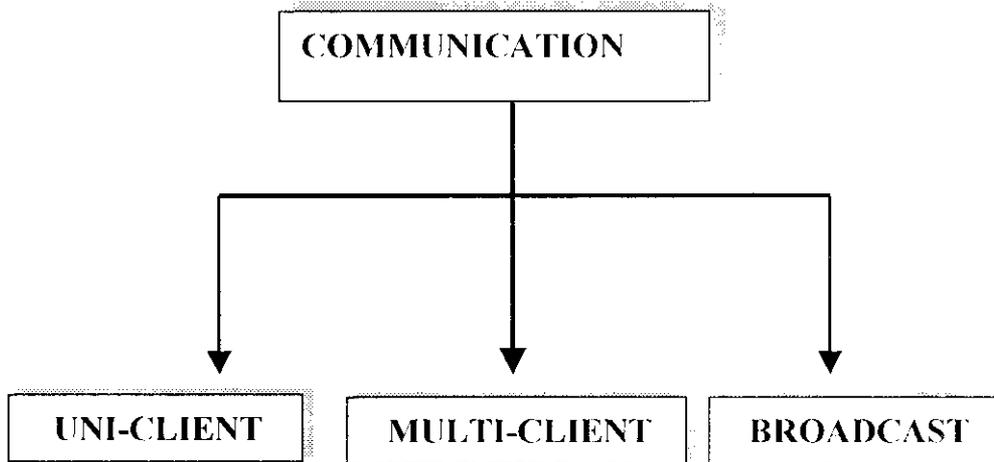
(Fig 6.7)

FUNCTIONAL MODULE III

```
                    ┌─────────────────────┐
                    │    CONTROLLING      │
                    └─────────────────────┘
                               │
              ┌────────────────┴────────────────┐
              ▼                                  ▼
    ┌───────────────────┐              ┌───────────────────┐
    │  SYSTEM CONTROL   │              │   TASK CONTROL    │
    └───────────────────┘              └───────────────────┘
              │
      ┌───────┴───────┐
      ▼               ▼
┌───────────┐   ┌───────────┐
│ SHUT DOWN │   │  RESTART  │
└───────────┘   └───────────┘
```
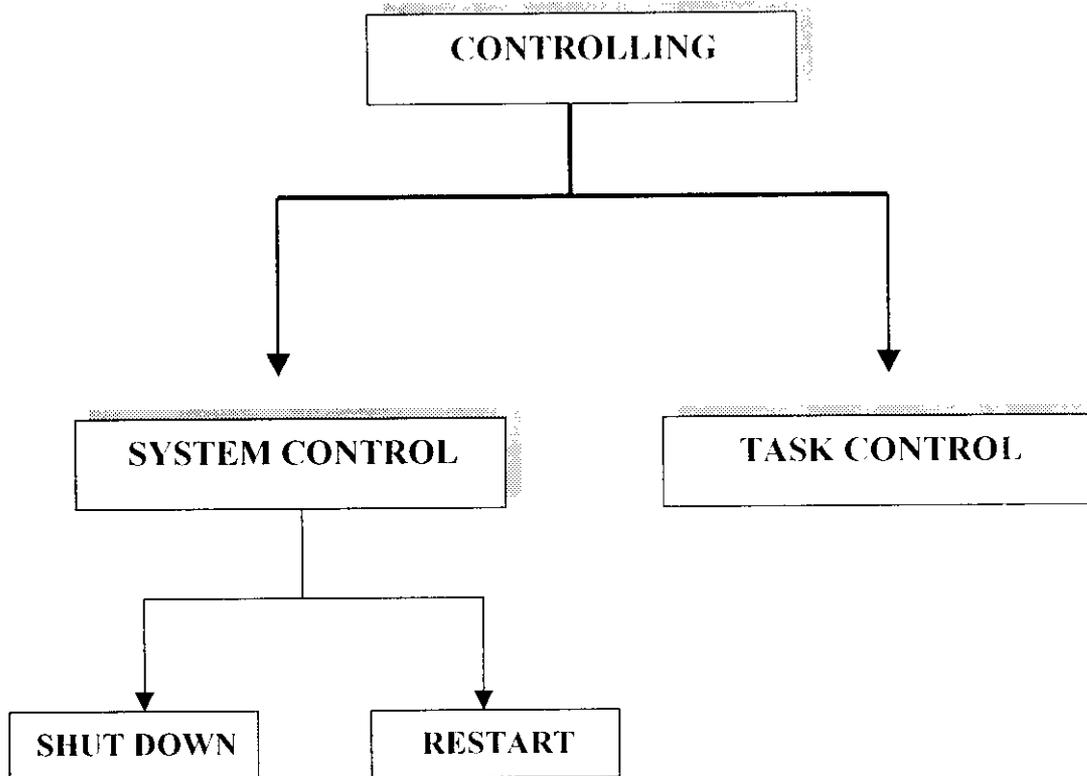
(Fig 6.8)

Physical Design

Input Design

Network Supervisor is network based tool. The system has the server and client tools. The server tool is loaded into a separate machine and all other systems are loaded with the client tool. The client tool receive input from the client and also from the server. The user enter their information through the keyboard. The client tool send the received data to the server using the network. These data is used as an input for the server also. Server send the control message to the clients these control messages are considered as inputs for the client. All the client processes are carried out based on the control message. In the two way communication method the client receives the input from the user then send the data to the server as input. The server also receives the input from the administrator. The messages are send to the client based on the administrator input. Both the server and client tools are designed to receive the input from the user or from the network environment. In the capture module the client get the screen content from the video memory of the client machine.

Output Design

The server outputs are displayed in the server machine and the client machine also. But the output of the client is send to the server as input. The screen information of the client is passed to the server as input but in the server side it is the output. The server messages are displayed in the client window. The client informations are displayed in the server window only. In the one way messaging system the server send the messages to the client machine. The client machine receives the messages as input and it displays the message in the message box as output. In this system the output and the input of the server machine and the client machine are interrelated themselves. The output of the server is passed as input for the client. In some times the output of the client tool is used as an input for the server tool.

Code Design

An API is simply a set of functions available to an application programmer. The term is most often used to describe a set of functions that are part of one application. For example, when a Visual Basic Program user OLE Automation to execute an Excel spreadsheet.

So, the Windows API refers to the set of functions that are part of windows and are accessible to any Windows application. From a Visual Basic Programmer's point of view the windows API functions can be divided into four categories:

- API functions that correspond to Visual Basic features. Many API functions are already built into Visual Basic, so there is no need to access them via the Declare statement.

- API functions that cannot be used Visual Basic

- API functions useful for Visual Basic programmers. These functions will be covered in detail in this section.

- API functions that can be accessed only through a simple interface that performs certain parameter conversions or allows access to information that cannot be obtained directly.

The Windows API is not designed to be used from Visual Basic. Using the functionality exposed by the Windows operating system, there is very little that cannot be accomplished. It is very important to realize that there are many Windows API calls. Grouped by function type, Windows API calls allow access to many custom Windows services such as encryption, compression and networking.

Windows API calls are contained in DLLs external to our programs. We declare the API call and the DLL that contains it. This is done in the Declarations section of module, class, form, property page, or user control. The functions exposed by Windows via the Windows API are external to our program. The Windows API is contained within Windows system files as such

kernel132.dll, gdi32.dll and others. These files are part of Windows, and in fact Windows itself uses the same set of functions. Windows API calls encapsulate many system functions in a standard and uniform manner. The Windows API provides access to system resources such as configuration information, the keyboard, the mouse, the screen and the file system etc. Windows API calls are often used to perform a given task. To use a Windows API, it is necessary to declare the API, the name of the DLL it is located in and all the arguments it takes. If it is a function, its return type must also be defined. As Windows API is not a part of Visual Basic, the only information Visual Basic can use to implement the API calls is what the user tells VB when he/she declares the API. Moreover, many Windows API calls take structures as arguments. In Visual Basic, a structure is a user defined type, or UDT.

List of API functions (Table 6.1)

Function	Description
BitBlt	Performs a bit block transfer a color data corresponding to a rectangle of pixels from the specified source device context into a destination device a context.
CreateCompatibleBitmap	Creates a bitmap compatible with the device that is associated with the specified device context.
GetDesktopWindow	Returns the handle of the windows Desktop Window.
GetForegroundWindow	Returns the handle of the foreground window(Current state)
GetDC	Retrives a handle of the display device context for the client area of the specified window.
GetWindowDC	Retrieves the device context of the entire window, includes the Scrollbar and Menus.
ReleaseDC	Release the Device Context for use by other applications.
GetDeviceFreespace	Retrieves Information about the specified Device.
GetVersionEx	Obtains the extended information about the specified disk includes the freespace.
GetVersionEx	Obtains the extended information about the version of the Operating System .
GetSystemInfo	Returns the information about the System.

TESTING

The Objective of Testing is a process of executing a program with the intent of finding errors .A good test case is that has a probability of finding undiscovered errors. A successful test is one that uncovers the errors.

Also the System testing is a process of checking whether the developed system is working according to the original objectives and requirements. System should to be tested experimentally with the test data so as to ensure that the system works according to the required specification. When the system is found working, test it with the actual data and check the performance.

Testability

Testability is simply how easily the computer program can be tested. Sometimes the testability is done used to mean how adequately a particular set of test will cover the product .They provide certain checklist of possible design points and features.

The checklist includes,

OPERABILITY

OBSERVABILITY

CONTROLLABILITY

DECOMPOSABILITY

SIMPLICITY

UNDERSTANDABILITY.

They broadly classified as the,

➤ Code Testing

➤ Specification Testing

CODE TESTING

There are many strategies of testing the code of newly developed system. The first is to check, to see the logic involved and then the correctness. Tests are conducted based upon sample data, and the limits and ranges of attributes in screen entries were tested. This includes the Black Box Testing and White Box Testing.

White Box Testing – This focuses on the control structure of the procedural design, and also called as the Glass box Testing.

Black Box Testing-This focuses on the functional requirements of the software. This enables the Engineer to derive set of input conditions that fully exercise the functional requirements of the program.

SPECIFICATION TESTING

It examines the specifications stating what the program should do and how it should perform under various conditions. By doing this test for different combination of inputs it can be determined whether the program performs according to its specified requirements. This testing strategy is followed since it focus is on the way the software should perform.

The client and server are tested separately. The client/server communication is also tested. Modularized testing is also carried out.

Implementation

IMPLEMENTATION

An essential view of the software requirements presents the functions to be accomplished and the information is processed without the regard of the Implementation details. The Implementation view of the software requirements presents the real world manifestation of processing functions and the information structure. As in the physical case representation the developed as the first step in the software design. The computer based systems are specified in a manner that dictates accommodation of certain implementation details. the software requirement analysis is focus on what how the processing is implemented.

The implementation stage is a systems project in its own right. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover (including writing programs to convert files), training of staff in the changeover procedures (as well as in the new system procedures), and evaluation of changeover methods.

Task of Implementation

Change over

Normally, the change over from the one system to the another will take place when

➤ The system has been proved to the satisfaction of the system analyst and the other implementation activities have been completed.

➤ The change over may be achieved in a number of ways. The most common methods are

- Direct Change over
- Parallel Running
- Pilot Running
- Stage Change over.

DIRECT CHANGE OVER

Direct change over is a complete replacement of the old system by the new, in one move. It is a bold move, which should be undertaken only every one concerned has confidence in the new system.

When a direct change over is planned, system tests and training should be comprehensive and the change over itself planned in details. This method's potentially the least expensive by the most risky. A time should be chosen when the work of organization is slack in any event the busiest time should avoided.

Direct change over is likely to be used.

* For a system which is new to the organization as from replacement system.

* Where the new system incorporates such major innovations that a sensible comparison is not possible in parallel operation.

* Where the user departments are experienced in computer system.

* For a relatively small change over on a short time scale.

As for our system is considered the direct change over is helpful as that no existing system is there and we acquire the requirements of the proposed system without any harm.

Maintenance

SYSTEM MAINTENANCE

SYSTEM MAINTENANCE is done during the implementation phase .This may span the entire Spectrum of software engineering. The maintenance phase focuses on the change associated with the error, correction, adaptations that required as the software's environment evolves and changes due to the enhancements brought about by changing customer requirements. The implementation phase is main and the Maintenance is reapplies the steps of the definition and development phases, but does so in context of existing software. Four types of change are encountered during the phase.

➤ **Corrective Maintenance** changes the software to correct defects.

➤ **Adaptive Maintenance** is results in modification to the software to accommodate changes to its external environment.

➤ **Enhancements** this adds the additional features for the system. This is also called as perfective maintenance.

➤ **Preventive Maintenance** is often called software reengineering. This is to serve the needs of the end users.

In our system developed, the Adaptive maintenance is used, as that we able to change the system directly if needed to its external environment.

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Conclusion

CONCLUSION

The Network Supervisor solves the problems in administration work. The Network Supervisor server lists the clients and their information. Communication between server and client carried out successfully in the Network Supervisor. Viewing the client console content transferring is very useful for administration work. Server can control the clients by shut down or restart task. So in a Network communication and controlling is very easy by using Network Supervisor. It is a GUI based user friendly tool.

Network Supervisor has the following ADVANTAGES

> Message Service
> Communication Service
> Client Monitoring Facility
> Client Controlling Facility
> Easy to Distribute
> Flexible Working Environment
> Supports Windows NT and Peer to Peer LANs

The Developed system is able to work as Network administrator and able to run on the Peer-to-Peer network and also in the Client-Server computing. The system is able to do all the capabilities for the CLIENT of the system who owns.

I ensure that the project will work successfully and will be more user friendly.

Picture Enhancement

SCOPE FOR THE FUTURE ENHANCEMENTS

The future enhancement includes the time schedule feature for controlling the client. i.e. setting a certain time for the clients work. Sending messages to the client in particular time. Now communication between server and client is available. But in future communication between users will be included. Retrieve a process report for each client at a every logging session.

The network holds any promises to both developers and end users. Some of these promises are achievable today, while others will hopefully be solved tomorrow. The System is developed further and able to implement in the Internet itself.

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2. **"Visual Basic 6",** "Steve Brown", "BPB Publications", 1997.

3. **"Introduction to Networking",** "Barry Nance", "Prentice-Hall/Macmillan" ,3rd Edition

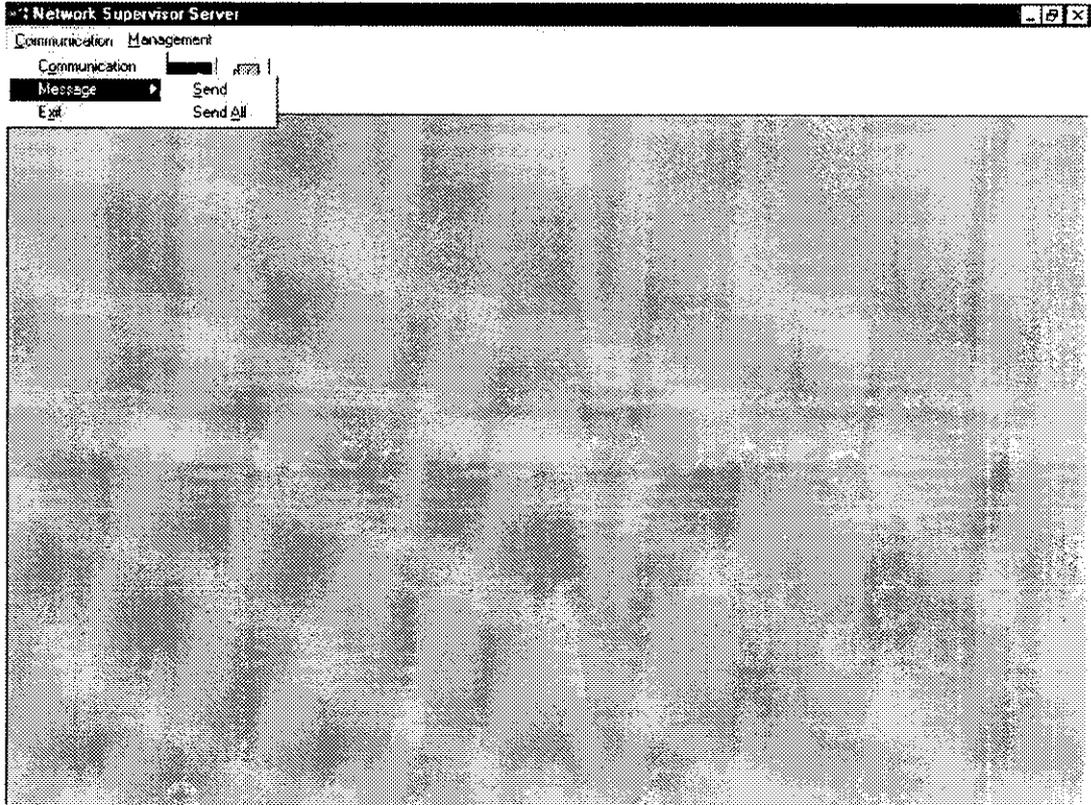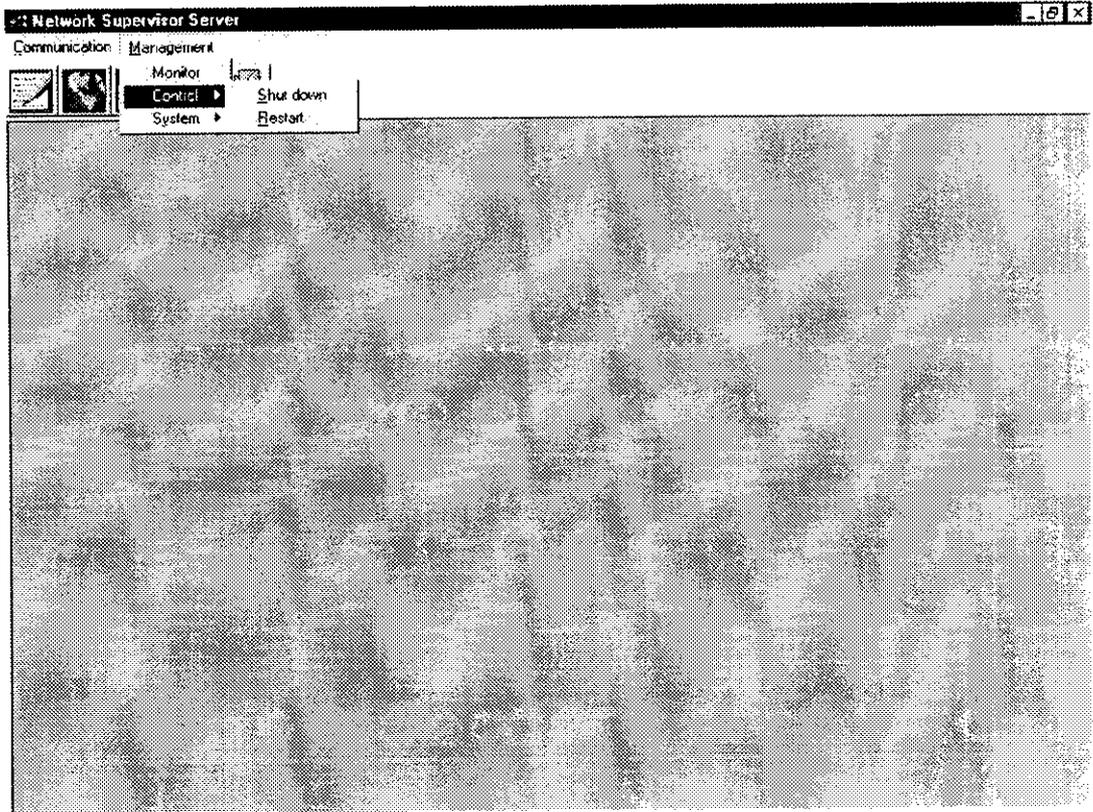4. **"TCP/IP",** "Ed Tittel, Kurt Hudson, Steward Michael.J", "Comdex", NewDelhi, 1998.

WEBSITES

      http://www.protocols.com

      http://www.networkcomputing.com

      http://www.techweb.cmp.com

      http://www.techref.ezine.com

      http://www.windowscentral.com

      http://www.vbonline.com

      http://www.softlab.ntua.gr

Appendix

SCREEN DESIGN
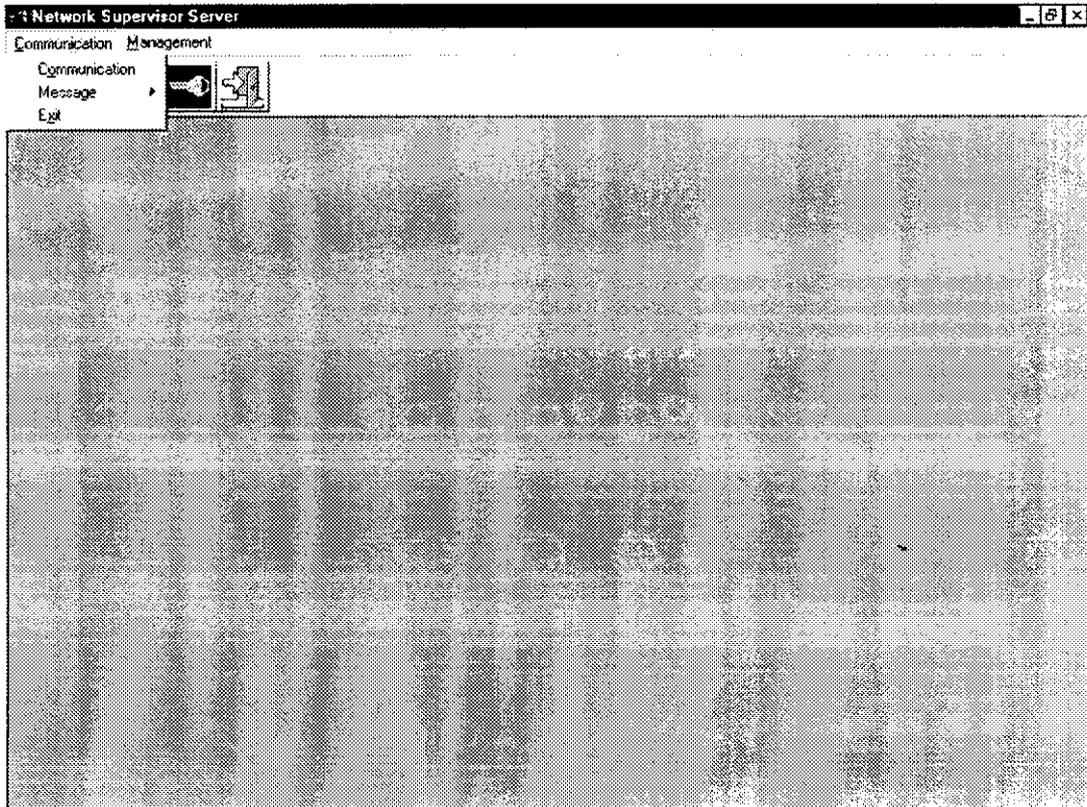
SERVER

SERVER

SERVER – MANAGEMENT

SERVER - RESOURCES

CLIENT LOGSCREEN

Communication   Management

Send All

Selected
Client

Genius

Message   Hello Srinivasan

Client Information
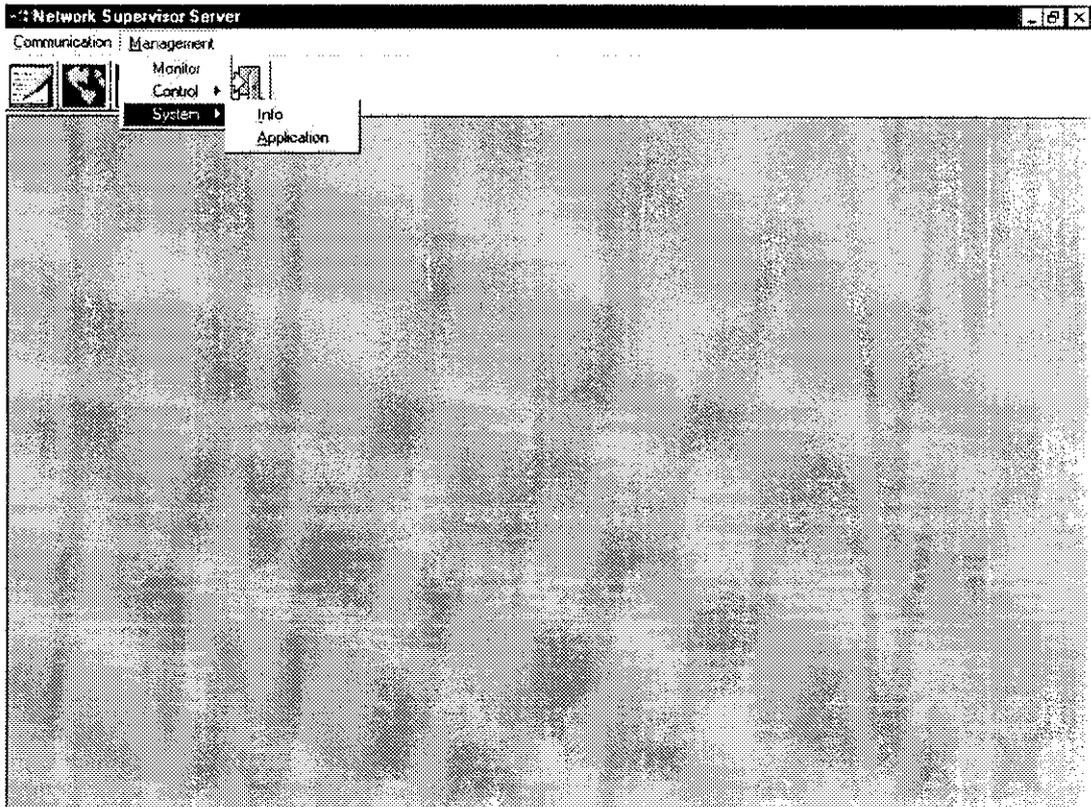
System Name   Genius
Client Name   Srinivas
Department   Computer
Section   Network
Work   Project
Date   4/17/02

COMMUNICATION

Communication with Client

Genius

```
<SERVER>What are you doing?
<CLIENT>I am complete my project
<SERVER>In which Platform
<CLIENT>I am developing it in Windows platform
```

Message
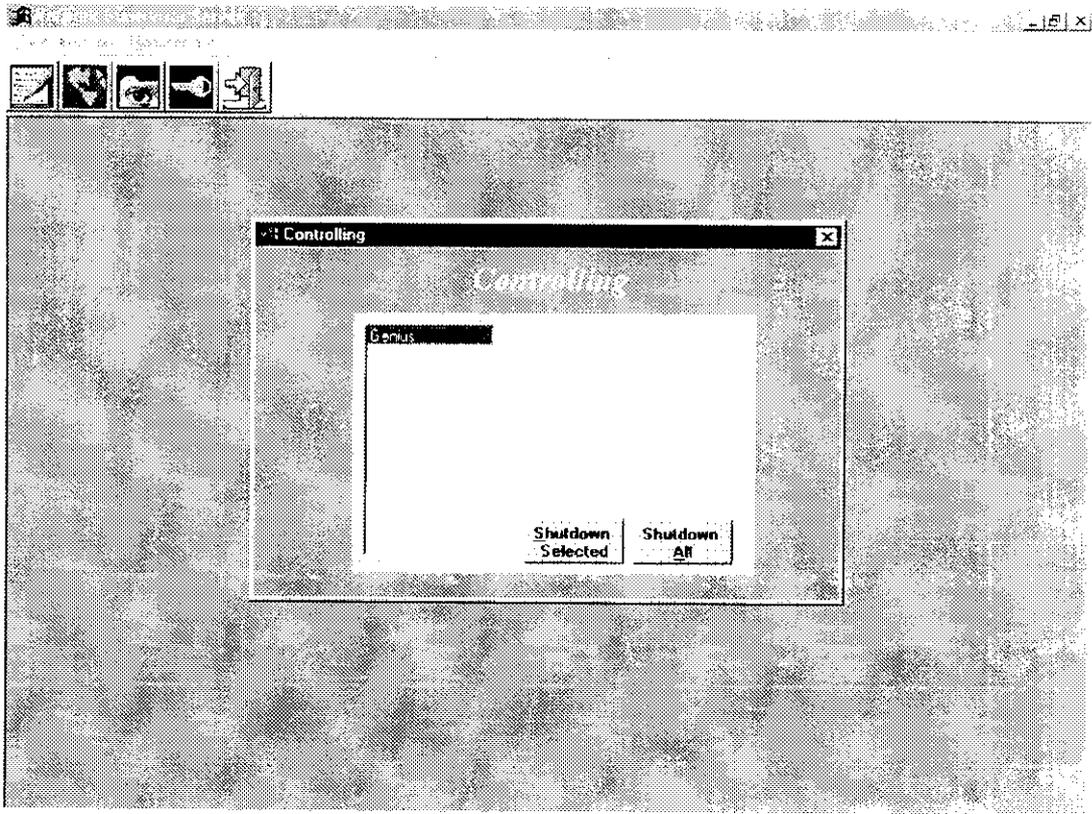
Send
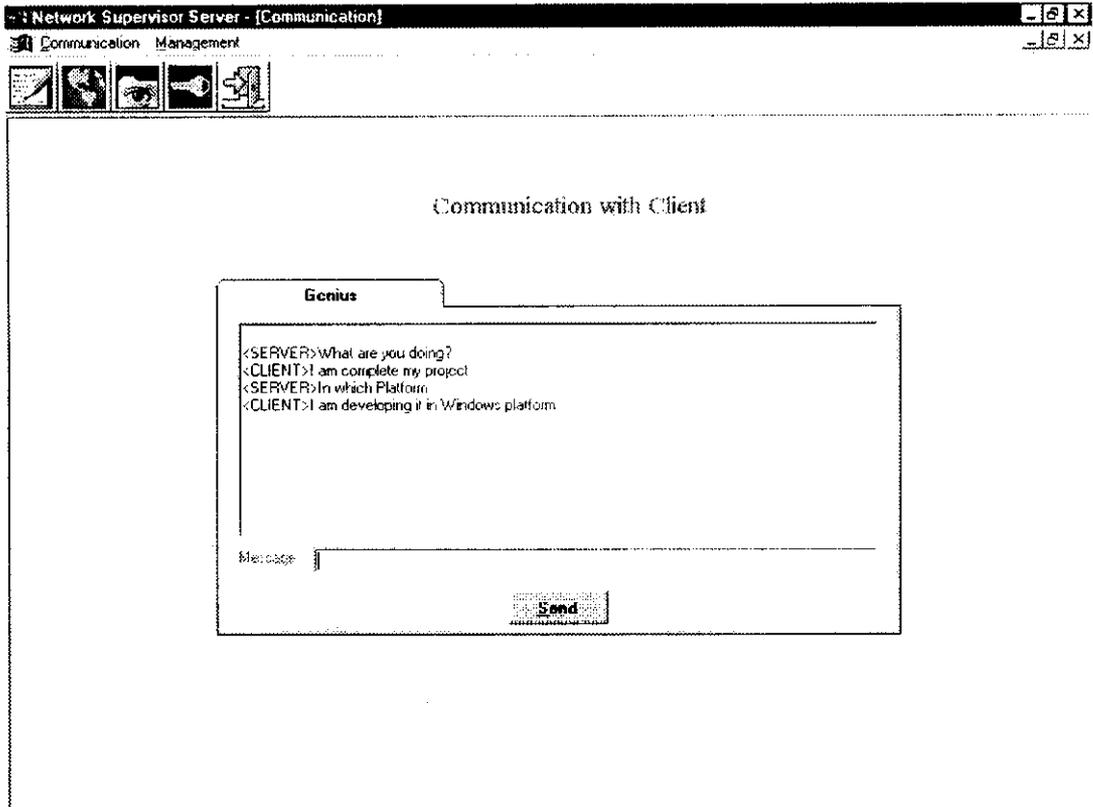
COMMUNICATION

Server Communication

```
<SERVER> What are you doing?
<CLIENT>I am complete my project
<SERVER> In which Platform
<CLIENT>I am developing it in Windows platform
```
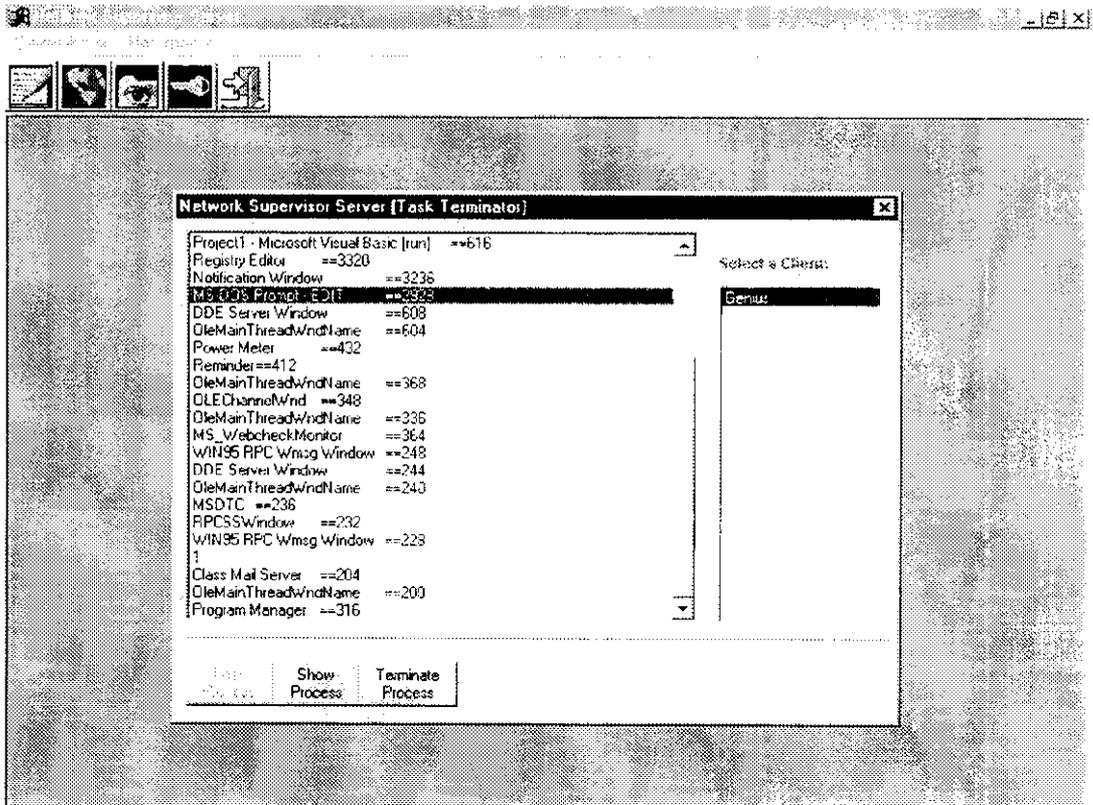
Message: [ ]   Send

COMMUNICATION - CLIENT

CONTROLLING

TASK MONITORING

Personal Web Manager

Properties View Help

Main

Publishing

Web publishing is on. Your home page is available at:

http://genius

[Stop] Click Stop to make the items on your site unavailable.

Your home directory   e:\inetpub\wwwroot

[To change published directories, click "Advanced" in the list on the left.]

Monitoring

Active connections: 0

Started at 4:32 PM on
4/17/02

Visitors: 0

Requests: 0

Bytes served: 0

Most concurrent connections: 0

View Statistics:

Requests per Hour

Hours

Main

Publish

Web Site

Tour

Advanced

Genius

Capture

Show

TASK MONITORING