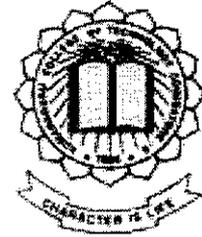


P-2722



**INTERNET PROTOCOL SCANNER**

By

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Register Number: 71206621033

Of

**KUMARAGURU COLLEGE OF TECHNOLOGY**

**COIMBATORE-6**

**A PROJECT REPORT**

Submitted to the



**FACULTY OF INFORMATION AND COMMUNICATION ENGINEERING**

*In partial fulfillment of the requirements  
for the award of the degree  
of*

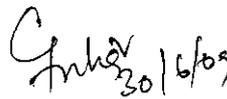
**MASTER OF COMPUTER APPLICATIONS**

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CHENNAI 600 025**

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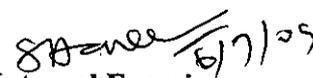
**BONAFIDE CERTIFICATE**

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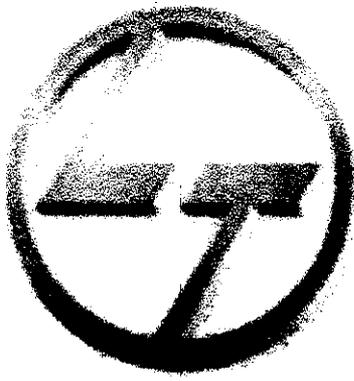
  
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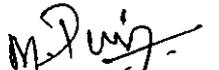


# L&T Infotech

Date: 5.6.09.

## TO WHOM SO EVER IT MAY CONCERN

This is to certify that the project titled "IP SCANNER" submitted by Mr.S.MUTHUSELVAN (Reg-No: 71206621033) from KUMARAGURU COLLEGE OF TECHNOLOGY at COIMBATORE, in partial fulfillment of project work done at our concern between January 2009 to June 2009.

  
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## ABSTRACT

IP (Internet Protocol) Scanner is a port scanning regime. It is a cross-platform network scanner designed to be fast and simple to use. It provides the hostname, IP address, and the response time to a ping. The geographic location has been added to each hop where it is available. It is used to enable the FTP and also HTTP connectivity for the required IP.

It is difficult to gather and deliver data through none GUI mode. Instead of every time manual entry, the organization decided to develop software to minimize time and manual work.

With the help of IP Scanner the administrator can add or delete the IP address of the computers for services. The computer name, their group name and the media access control address are stored to monitor and maintain the system.

The routine work of the administrator is to configure the File Transfer Protocol and Hyper Text Transfer Protocol for the needed system. It gives the list about the computers connected in the network.

The objective of this project is as follows:

- This system can scan the hundreds of computers and list out the IP Address.
- It enables us to connect the HTTP and FTP protocol.
- Enable us to add and delete the new computer in the network.
- It provides the in depth scanning of the network.
- More reliability than existing system.
- Time consumption is very less.
- Access the multi-information simultaneously because of multi-tasking.

In this system GUI Based tools are used. It is developed under VB.Net as Front - end and MS Access 2000 as Back-end.

## ACKNOWLEDGEMENT

First and foremost I thank God for his good will and blessings showered on me throughout the project. The success of this project needs cooperation and encouragement from different quarters.

I wish to express my deep unfathomable feeling of gratitude and indebtedness to **Prof. R. Annamalai**, Vice Principal, Kumaraguru College of Technology, Coimbatore for the successful completion of the project work.

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I am very much indebted to my Project Guide and Coordinator **Mrs.V.Geetha**, Assistant Professor, Department of MCA, Kumaraguru College of Technology, Coimbatore for her complete assistance, guidance and support given to me throughout my project.

It's always a pleasure and privilege to be associated with a prestigious outstanding esteemed organization "**L&T InfoTech**", **Chennai**.

My hearty thanks to my External Guide **Mr. Durai M.E** of **L&T InfoTech**, for his valuable guidance throughout the project. Also, I am grateful to my parents and friends who were the real source of my project.

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## CHAPTER 1

### INTRODUCTION

#### 1.1 OVERVIEW OF THE PROJECT

IP (Internet Protocol) Scanner is a fast, robust and easy-to-use scanner for Windows. It easily lets you have various types of information about local network computers in a few seconds. It provides the hostname, IP address, and the response time to a ping. We have added the geographic location to each hop where it is available. It is used to enable the FTP and also HTTP connectivity for the required IP.

It is difficult to gather and deliver data through none GUI (Graphical User Interface) mode. Instead of every time manual entry the Organization decided to develop software to minimize time and manual work.

The objective of this project is as follows

- This system can scan the hundreds of computers and list out the IP Address.
- It enables us to connect the HTTP and FTP protocol.
- Enable us to add and delete the new computer in the network.
- It provides the in depth scanning of the network.
- More reliability than existing system.
- Time consumption is very less.
- Access the multi-information simultaneously because of multi-tasking.

## 1.2 ORGANIZATION PROFILE

L&T InfoTech is a global IT services and solutions provider. We provide the winning edge to our clients by leveraging our Business-to-IT Connect and deeply committed people. Our clients include industry leaders like Chevron, Freescale, Hitachi, Sanyo and Lafarge, among others. They have found in us a right-size partner who combines scale, stability and customer-centricity, our key strength is our people and we have created systems that allow us to attract, train and retain the best talent. We are also investing ahead of the curve by establishing state-of-the-art delivery centers. Our robust IT infrastructure delivers assured business continuity.

At L&T InfoTech, we focus on industries that include Manufacturing, Banking & Financial Services, Insurance, Energy & Petrochemicals and Telecom-Product Engineering Services. We have been providing application development services to these industries for more than a decade. We have partnered with Fortune 100 companies to help them adopt modular, scalable and extensible IT architectures that ensure reduced time to market, keep risks to a minimum and reduce development time.

Our Consulting enables our clients maximize business value from their IT investments leading to improved organizational performance. Our services leverage business knowledge, process excellence, technology expertise and substantial domain experience in chosen industry verticals. This springs forth from the rich corporate heritage of our parent Larsen & Toubro group.

## CHAPTER 2

### SYSTEM REQUIREMENT SPECIFICATION

The Software requirement specification is a technical specification of requirements for the software product. The goal of software requirements definition is to completely specify the technical requirements for the software products in a concise and unambiguous manner

#### 2.1 HARDWARE ENVIRONMENT

This section describes the hardware components with which the application was developed and the minimum hardware configuration with which the system operates best.

- Processor : Intel Pentium IV or Above
- RAM : 512 MB
- Memory : 64 Megabytes
- Hard Disk : 20 GB

#### 2.2 SOFTWARE ENVIRONMENT

This section describes the software in which the application was developed and using the same software would make it more compatible.

- Operating System : Windows 98/2000/XP/NT
- Front-End : VB.Net
- Back-End Tool : MS Access 2000

## **2.3 SOFTWARE OVERVIEW**

### **2.3.1 VB.Net Framework**

A platform that has a base class library that contains hundreds of classes for performing common tasks such as file manipulation, registry access, security, threading and searching of text using regular expressions. A platform that doesn't forget its origins and has great interoperability support for existing components that or third parties have written using COM or standard DLLs. A Platform with an independent code execution and management environment called the Common Language Runtime(CLR) which ensures code is safe to run, and provides an abstract layer on top of the operating system. The elements of .NET framework can run on many operating systems and devices objectives to provide a consistent object-oriented programming environment. To build all communication on industry standards to ensure that code based on the .NET Framework can integrate with any other code.

VB.Net is a simple, type-safe, object-oriented, general-purpose programming language. It provides code-focused developers with powerful tools and language support to build rich, connected Web and client applications on the .NET Framework.

#### **2.3.1.1 VB.Net overview**

- Visual basic .Net 2005 is the modern, innovative programming language and tool for building .NET-connected software for Microsoft Windows, the Web, and a wide range of devices.
- It is a flexible integrated development environment (IDE), and the capability to build solutions across a variety of platforms and devices, Visual basic .Net 2005 significantly eases the development of .NET-connected software.

#### **2.3.1.2 Features of VB.Net**

- VB .Net is a modern and intuitive object-oriented programming language that offers significant improvements, including a unified type system, "unsafe" code

for maximum developer control, and powerful new language constructs easily understood by most developers.

- .NET Framework class library to gain powerful built-in functionality, including a rich set of collection classes, networking support, multithreading support, string and regular expression classes, and broad support for XML, XML schemas, XML namespaces, XSLT, XPath, and SOAP.
- Using Visual Basic.Net 2005, developers can construct powerful Web services that encapsulate business processes and make them available to applications running on any platform.
- Visual Basic.Net 2005 also enables developers to build the next generation of Windows-based applications. With visual inheritance, developers can greatly simplify the creation of Windows-based applications by centralizing in parent forms the common logic and user interface for their entire solution.
- With native support for the .NET Compact Framework, mobile Web devices, and embedded applications available as part of Visual Studio 2005 Professional Edition, VB.Net developers can now target a wide variety of mobile devices, including Pocket PCs, mobile phones, and devices powered by the Windows CE operating system. Programmers can become immediately productive by using the same programming model and tools for creating powerful device-based software as they use for building robust Windows- and Web-based solutions.

### **2.3.2 ADO.NET**

The .NET Framework includes a new data access technology named as ADO.NET. It provides consistent access to data sources such as Microsoft SQL Server, as well as data sources exposed via OLE DB and XML. Data-sharing consumer applications can use ADO.NET to connect to these data sources and retrieve, manipulate, and update data.

. ADO.NET includes .NET data providers for connecting to a database, executing commands, and retrieving results. Those results are either processed directly, or placed in an ADO.NET Dataset object in order to be exposed to the user in an ad-hoc manner, combined with data from multiple sources, or remote between tiers. The ADO.NET Dataset object can also be used independently of a .NET data provider to manage data local to the application or sourced from XML.

### **2.3.3 MS Access**

Microsoft Office Access, previously known as Microsoft Access, is a relational database management system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software development tools. It is a member of the Microsoft Office suite of applications and is included in the Professional and higher versions for Windows and also sold separately. There is no version for MacOS or for Microsoft Office Mobile.

Access stores data in its own format based on the Access Jet Database Engine. It can also import or link directly to data stored in other Access databases, Excel, Share Point lists, text, XML, Outlook, HTML, dBase, Paradox, Lotus 1-2-3, or any ODBC-compliant data container including Microsoft SQL Server, Oracle, MySQL and PostgreSQL. Software developers and data architects can use it to develop application software and non-programmer "power users" can use it to build simple applications. It supports some object-oriented techniques but falls short of being a fully object-oriented development tool.[clarification needed]

Microsoft Access is part of the Microsoft Office suite and is the most popular Windows desktop database application.[citation needed] It is targeted for the information worker market, and is the natural progression for managing data when the need for a relational database arises or after reaching the limits of Microsoft Excel

### 2.3.3.1 Features

Users can create tables, queries, forms and reports, and connect them together with macros. Advanced users can use VBA to write rich solutions with advanced data manipulation and user control.

There is also the Jet Database format (MDB or ACCDB in Access 2007) which can contain the application and data in one file. This makes it very convenient to distribute the entire application to another user, who can run it in disconnected environments.

One of the benefits of Access from a programmer's perspective is its relative compatibility with SQL (structured query language) — queries can be viewed graphically or edited as SQL statements, and SQL statements can be used directly in Macros and VBA Modules to manipulate Access tables. Users can mix and use both VBA and "Macros" for programming forms and logic and offers object-oriented possibilities. VBA can also be included in queries.

Microsoft Access offers parameterized queries. These queries and Access tables can be referenced from other programs like VB6 and .NET through DAO or ADO. From Microsoft Access, VBA can reference parameterized stored procedures via ADO.

## CHAPTER 3

### SYSTEM ANALYSIS

System Analysis is the process of understanding a problem domain and the user requirements for the purpose of developing a computer application system to serve the users.

#### 3.1 EXISTING SYSTEM

The existing system is working under command mode in the disk operating system for getting the data from the other nodes in the networks like ping, route, etc., for accessing every information the user wants to have in the disk operating system and access the information by type in keyboard in DOS mode. External command program directly executable by the operating system.

##### 3.1.1 Limitations of Existing System

The following drawbacks are occurred in the existing system.

- Less user-friendly.
- The abundant information about nodes in the enterprises is not available.
- The FTP and HTTP protocols can't be connected.
- Cannot get the multi information simultaneously due to Single Tasking Operating System.

## 3.2 PROPOSED SYSTEM

The existing system was carried out manually. IP Scanner is a port scanning software, it is a cross-platform network scanner designed to be fast and simple to use. It provides the hostname, IP address, and the response time to a ping. We have added the geographic location to each hop where it is available. it is used to enable the FTP and also HTTP connectivity for the required IP

It is used by network administrators. It lets you have various types of information about local network computers in a few seconds. It gives you one-click access. In order to overcome the demerits of existing system this new system is proposed.

The objectives of the proposed system are:

- This system can scan the hundreds of computers and list out the IP Address.
- It enables us to connect the HTTP and FTP protocol.
- Enable us to add and delete the new computer in the network.
- It provides the in depth scanning of the network.
- More reliability than existing system.
- Time consumption is very less.
- Access the multi-information simultaneously because of multi-tasking.

### 3.2.1 Advantages of proposed system

The advantages of the Proposed System are

- Adding or Deleting IP address.
- Configure the FTP and HTTP protocols.
- More reliability
- More maintainability

## CHAPTER 4

### SYSTEM DESIGN

System design is the most creative and challenging phase in the life cycle of system development. The first step to determine is what input data is needed to form the system and the database that has to be designed should meet the requirement of the proposed system. The next step is to determine how the output is produced and in what format.

#### 4.1 DATABASE DESIGN

Database design is the process of producing a detailed data model of a database. This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a Data Definition Language, which can then be used to create a database.

**Table name:** Login

**Description:** This table holds the details like username and password of the administrator.

Column Name	Data Type	Length	Description
Username	Text	25	Name of the administrator
Password	Text	25	Password for the administrator

Table 4.1.1 Login



**Table name:Node**

**Description:** The table Node is used to store the details about the IP address, Computer Name, Group name, and the Media Access Control address of the computers.

Field Name	Data Type	Description
Sno	Auto	Serial number
Ipaddress	Text	IP address of the computer
Compname	Text	Name of the computer
Groupname	Text	Group name of the computer
Mac	Text	MAC address of the computer

Table4.1.2 Node

## 4.2 USE CASE DIAGRAM

An UseCase Diagram is used to present a graphical overview of the functionality provided by a system in terms of actors, their goals, represented as use cases and any dependencies between those use cases.

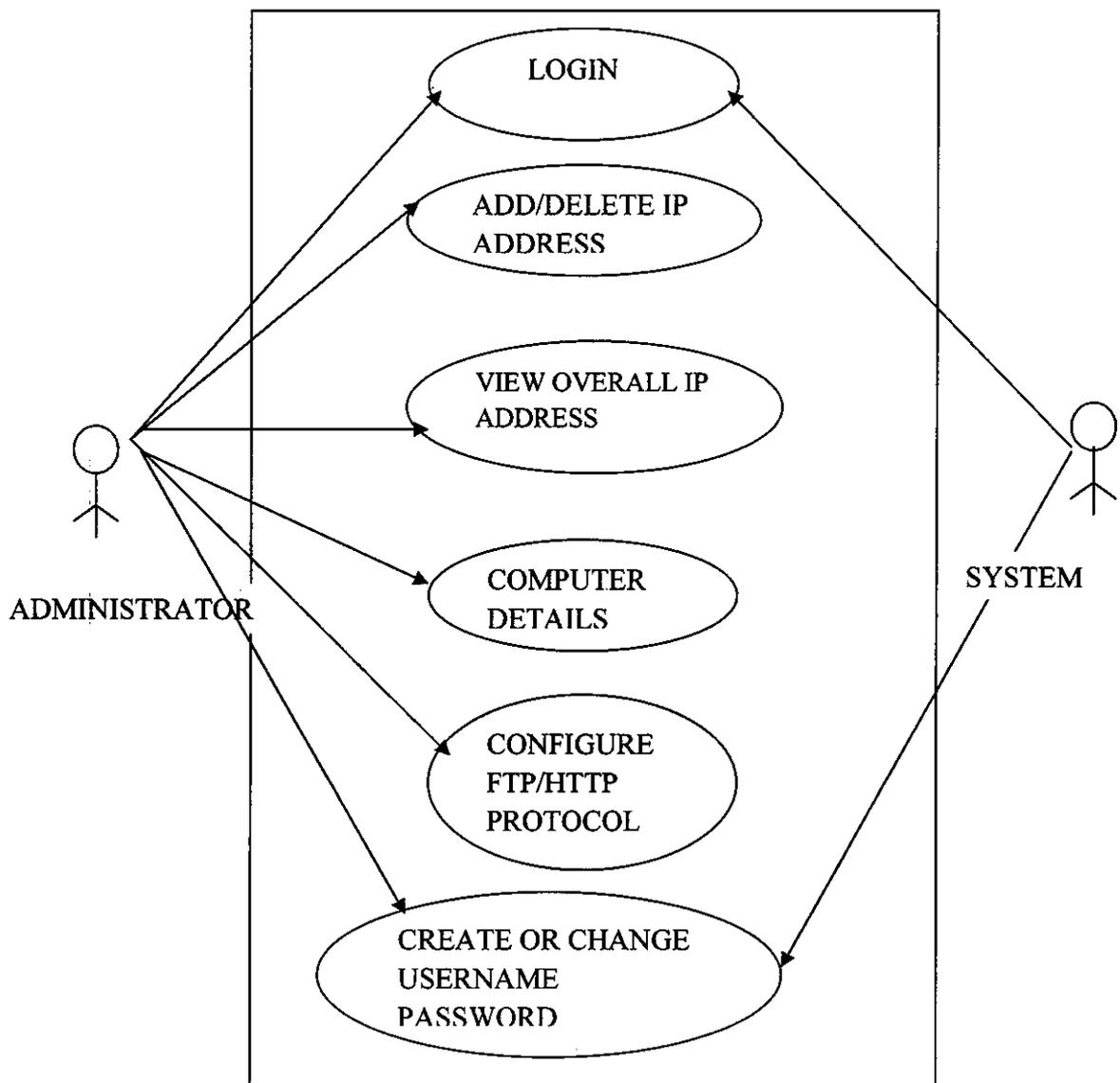


Figure 4.2.1: Main module

### 4.3 SEQUENCE DIAGRAM

A Sequence Diagram is a form of interaction diagram which shows objects as lifelines running down the page, with their interactions over time represented as messages drawn as arrows from the source lifeline to the target lifeline. Sequence diagrams are good at showing which objects communicate with which other objects; and what messages trigger those communications.

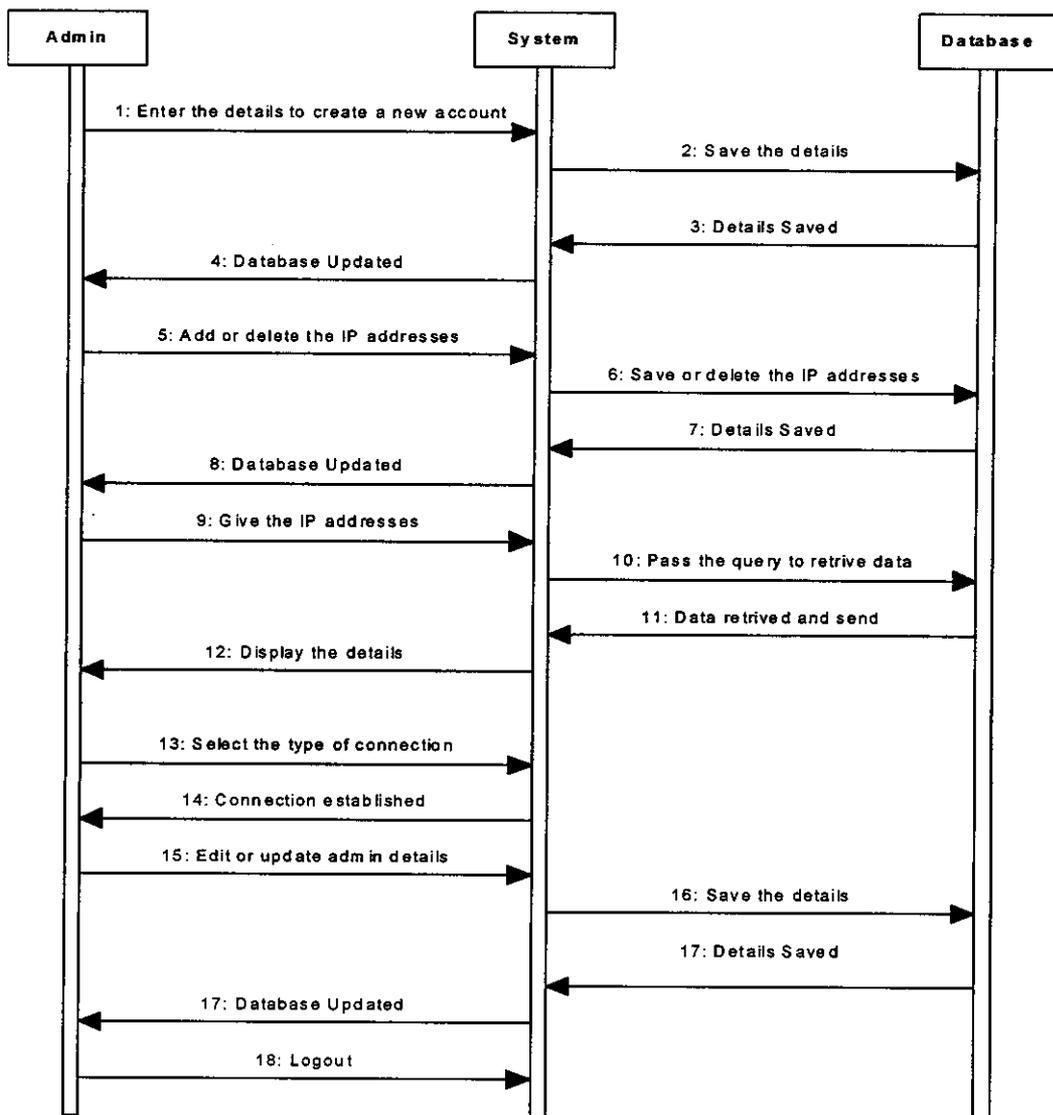


Figure 4.3.1: Sequence Diagram

#### 4.4 ACTIVITY DIAGRAM

Activity Diagrams describe the workflow behavior of a system. The diagrams describe the state of activities by showing the sequence of activities performed. Activity diagrams can show activities that are conditional.

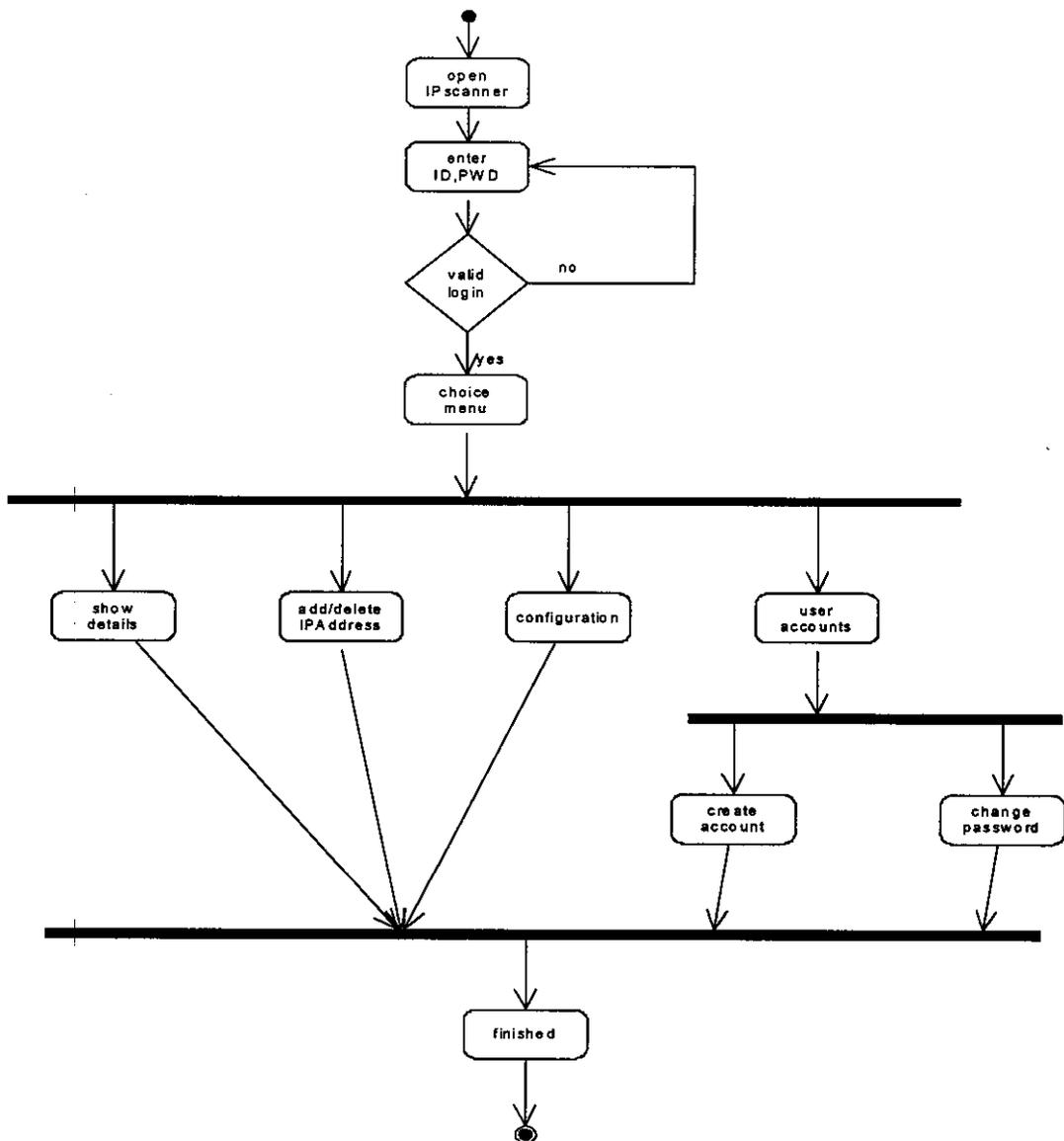


Figure 4.4.1: Activity Diagram

## CHAPTER 5

### PROJECT DESCRIPTION

IP scanner is a very fast port scanner. It is intended for the system administrators to monitor and manage their networks. Powered with multi-thread scan technology, this program can scan hundreds computers per second. It simply pings each IP address to check if it's alive, then optionally it is resolving its hostname, determines the MAC (Media Access Control Address), NetBIOS information.

The project has following modules

1. IP address
  - a. Add IP address
  - b. Delete IP Address
  
2. Show
  - a. Computer Name
  - b. Group Name
  - c. MAC address
  - d. Time To Live
  - e. Ping
  - f. Trace Route
  
3. View
  - a. IP address List.
  
4. Connect
  - a. FTP
  - b. HTTP

5. User
  - a. Create user
  - b. Change password

6. About

7. Exit

## 1. IP ADDRESS

An Internet Protocol (IP) address is a numerical identification and logical address that is assigned to devices participating in a computer network utilizing the Internet Protocol for communication between its nodes. Although IP addresses are stored as binary numbers, they are usually displayed in human-readable notations, such as 208.77.188.166 (for IPv4), and 2001:db8:0:1234:0:567:1:1 (for IPv6). The role of the IP address has been characterized as follows: “A name indicates what we seek. An address indicates where it is. A route indicates how to get there”.

Every computer that communicates over the Internet is assigned an IP address that uniquely identifies the device and distinguishes it from other computers on the Internet. An IP address consists of 32 bits, often shown as 4 octets of numbers from 0-255 represented in decimal form instead of binary form. An IP address consists of two parts, one identifying the network and one identifying the node, or host.

### a. Add IP Address

It is used to update the new IP address and allows editing and clearing the IP Address.

b. Delete IP Address

It is used to delete the existing IP address.

2. SHOW

c. Computer Name

It is used to give the computer Name, Workgroup Name and MAC (Media Access Control Address) Address depends upon the IP address.

d. Group Name

It is used to display the group name of the computers.

e. MAC (Media Access Control)

It is used to display the Media Access Control Address, which is a hardware address that uniquely identifies each node of a network. In a network (LAN) the MAC (Media Access Control) address is our computer's unique hardware number. (On an Ethernet LAN, it's the same as our Ethernet address.) When we connected to the Internet from our computer, a correspondence table relates our IP address to your computer's physical (MAC) address on the LAN.

f. Time To Live

Time to live (sometimes abbreviated TTL) is a limit on the period of time or number of iterations or transmissions in computer and computer network technology that a unit of data (e.g. a packet) can experience before it should be discarded. In IPv4, time to live (TTL) is an 8-bit field in the Internet Protocol (IP) header. It is the 9th octet of 20. The time to live value can be thought of as an upper bound on the time that an IP datagram can exist in an

internet system. The TTL field is set by the sender of the datagram, and reduced by every host on the route to its destination. If the TTL field reaches zero before the datagram arrives at its destination, then the datagram is discarded and an ICMP error datagram (11 - Time Exceeded) is sent back to the sender. The purpose of the TTL field is to avoid a situation in which an undeliverable datagram keeps circulating on an internet system, and such a system eventually becoming swamped by such immortal datagrams.

g. Ping

Ping is a computer network tool used to test whether a particular host is reachable across an IP network; it is also used to self test the network interface card of the computer, or as a speed test. It works by sending ICMP "echo request" packets to the target host and listening for ICMP "echo response" replies. Ping measures the round-trip time and records any packet loss, and prints when finished a statistical summary of the echo response packets received, the minimum, mean, max and in some versions the standard deviation of the round trip time.

h. Trace Rout

Trace route, also called trace path or tracers, is a network tool used to determine the "path" packets take from one IP address to another. It provides the hostname, IP address, and the response time to a ping.

### 3. VIEW

#### i. IP Address List

It is used to view the list of computers connected in the network and also the information's like NetBIOS information (IP address, computer name, work group), ping information and MAC address of the computers separately.

### 4. CONNECT

#### a. FTP

File Transfer Protocol (FTP) is a standard network protocol used to exchange and manipulate files over an Internet Protocol computer network. FTP is built on a client-server architecture and utilizes separate control and data connections between the client and server applications. FTP is an option ,which is used to enable the FTP connectivity for the required IP address in the network by the administrator.

#### b. HTTP

Hypertext Transfer Protocol (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information systems.<sup>[1]</sup> Its use for retrieving inter-linked resources led to the establishment of the World Wide Web.

HTTP is an option, which is used to enable the HTTP connectivity for the required IP address in the network by the administrator.

5. USERS

a. Create User

It is to create a new account for the administrator to use the software to manage and monitor the network.

b. Change password

The Administrator can reassign the password for his/her account, which is already exist and this is for the security purpose.

6. ABOUT

It gives the entire details of the software in a text format.

7. EXIT

It is used to exiting from the application.

## CHAPTER 6

### SYSTEM TESTING AND IMPLEMENTATION

Software Testing and implementation is the process done in the development stage of the software.

#### 6.1 TEST PLAN

Testing is the process of executing a program with the indent of finding any errors. Testing is vital to the success of the system. Without proper testing, hidden errors will surface after some time of use and perhaps irreversible damage has been doe to valuable data. A successful test is one that uncovers as yet undiscovered errors.

#### Test Case Report: Login

S.NO	TEST CASE	EXPECTED RESULT	ACTUAL RESULT
1.	User id: admin Password:1234	Invalid login	Invalid login
2.	User id: admin Password: admin	Valid login	Valid login

Figure 6.1.1:Login Test Case Report.

## **6.2 Unit Testing**

In unit testing, we have to test the program marking up the system. Unit testing focuses first on the modules independently of one another, to locate errors. This enables within that module alone.

In this project, each page was tested separately as a unit. The flow of control and data through that page was tested. Each page is tested with the previously prepared test cases to find errors in the page. After rectifying the errors, Once again it was tested to ensure whether there was no error.

## APPENDIX

## SCREEN SHOTS

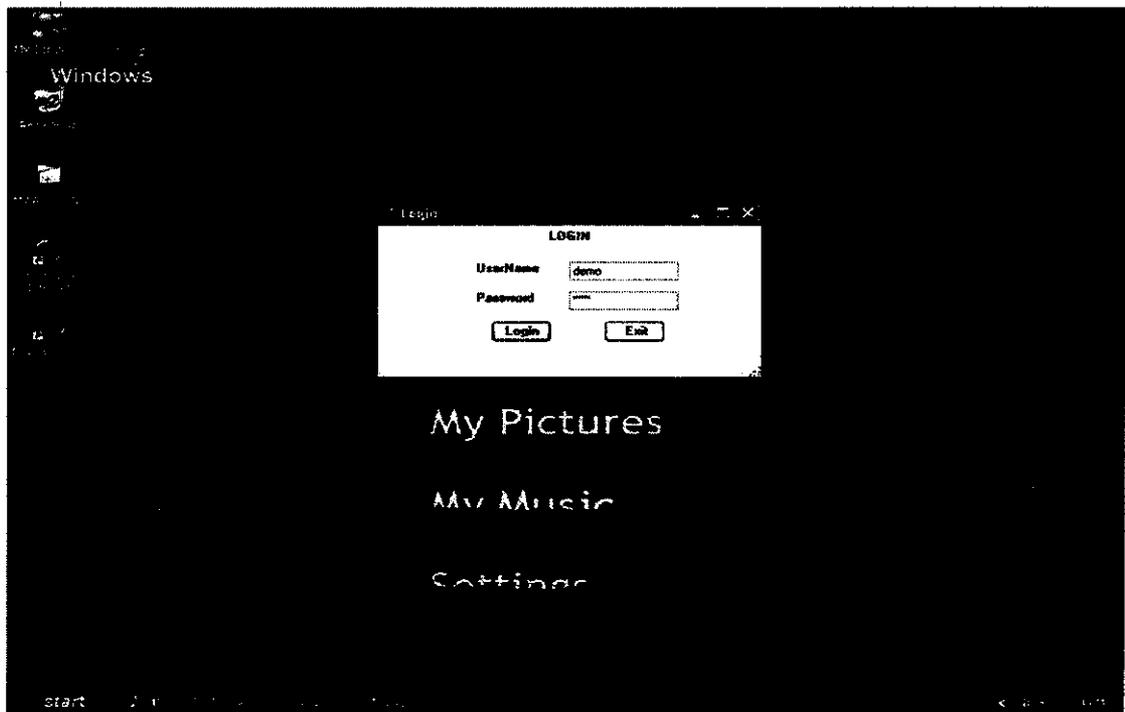


Figure A.1:Login Form

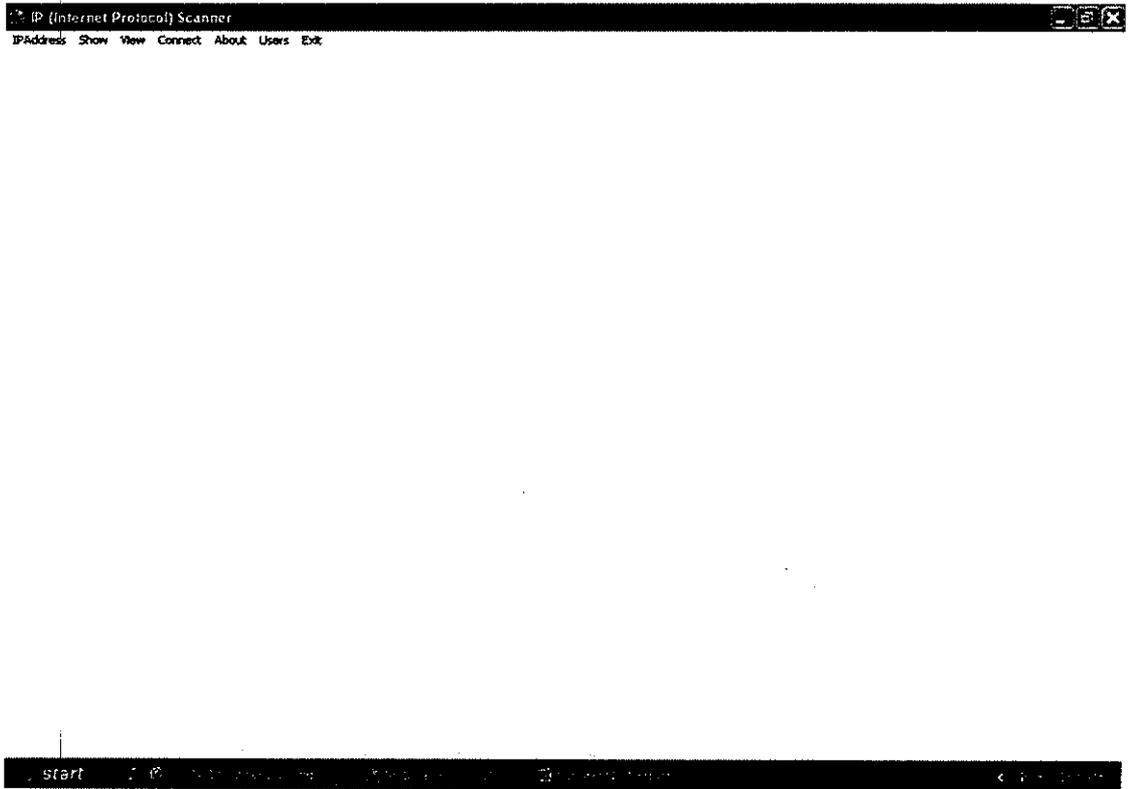


Figure A.2: Main Form



Figure A.3:IP Address Menu

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- [www.google.com/vb](http://www.google.com/vb)