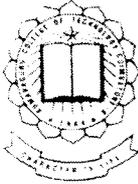


P-1020

.NET BASED VISUAL SOURCE SECURITY



MANAGEMENT SOFTWARE

PROJECT WORK DONE AT

NeST CYBER CAMPUS, TRIVANDRUM



PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE AWARD OF THE DEGREE OF

**MASTER OF COMPUTER APPLICATIONS
OF BHARATHIAR UNIVERSITY, COIMBATORE.**

SUBMITTED BY

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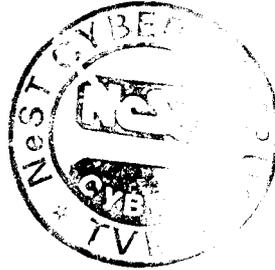
May-2003

CERTIFICATE

Certificate

This is to certify that *Ms. K. Saraswathy*, student of Kumaraguru College of Technology, Coimbatore has done a project by designing and developing a software using VB.NET titled **.NET BASED VISUAL SOURCE SECURITY MANAGEMENT SOFTWARE** in NeST Cyber Campus, Thiruvananthapuram during the period December 2002 to March 2003 as a part of her partial fulfillment of the course, M.C.A. of Bharathiar University.


Project Engineer
For NeST Cyber Campus.



Date: 22nd March 2003

Department of Computer Science and Engineering

Kumaraguru College of Technology

(Affiliated to the Bharathiar University)

Coimbatore - 641 035

CERTIFICATE

This is to certify that the project entitled

**“.NET BASED VISUAL SOURCE SECURITY
MANAGEMENT SOFTWARE“**

Done By

SARASWATHY.K

Reg. No. 0038M1061

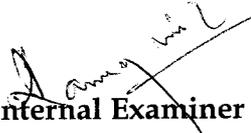
Submitted in partial fulfillment of the requirements for the award of degree of

Master of Computer Applications of Bharathiar University


Professor and Head


Internal Guide

Submitted to University Examination held on 16.4.2003


Internal Examiner


External Examiner

DECLARATION

DECLARATION

I here by Declare that this project work entitled “.NET Based Visual Source Security Management Software” submitted to *Bharathiar University* as the Project work of Master of Computer Application Degree, is a record of Original work done by me under the supervision and guidance of Mr. Mohammed Reji, NeST Cyber Campus, Trivandrum and Miss .P.Parameswari, Department of Computer Science, Kumaraguru College of Technology, Coimbatore and this Project Work has not found the basis of award of any Degree/ Diploma/ Associate ship/ Fellowship or Similar title to any Candidate of any University.

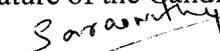
Place : Coimbatore

Date : 08.04.2003

Counter Signed by

Internal Guide

Signature of the Candidate


(Saraswathy.k)

External Guide

Acknowledgement

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SYNOPSIS

SYNOPSIS

Visual Source Security Management Software Tool (VSSM) is a Visual **Basic .NET** based project oriented version control system developed for NeST Cyber Campus, Thiruvananthapuram. VSSM tool helps us in managing and sharing files between two or more projects, quickly and efficiently in Intranet. This enables the development team to protect and track their most valuable source code. Members of the project team can see the latest version of any file, make changes and save the new version in the database. This tool contains the facility to view the history of a file, which displays the different versions of the file. It is possible to view and find the differences in various versions. By using the CHECK OUT facility a project member can modify an existing file. The CHECK IN facility helps in updating the database.

The different modules of the system are:

- An environment to display the over all project, including check-in, checkout facility.
- Project details including Customer, project member details etc.
- Report section- History report, Differences, Files Report etc.

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Introduction

1. Introduction

1.1 Project overview

Visual Source Security Management Software Tool is developed under VisualBasic.NET technology. This tool provides project oriented software management. In a project, when a file is about to be changed, this tool provides a safety net for the team members and ensures the security of the project. This tool enables the development team to protect and track their most valuable source code.

The services provided by VSSM are:

- Version listing for a file
- Difference listing

Versioning feature provides snap shots of a project for quick retrieval of any previous version of a file in the project life cycle.

Difference reporting provides quick access to changes across different versions of the same file, enabling the developers to know immediately what lines of code have changed.

Team members can also reconcile conflicts between different versions of the same file by using a visual merge capability, which provides a point and click interface for uniting files and avoid potential lose of valuable changes.

The Users Involved in VSSM is:

- Administrator
- Project manager
- Project leader
- Project members

Version control is a critical facet of team software, preventing users from accidental file loss, allowing back tracking to previous versions. It provides this robust versioning and configuration management functionality along with security capabilities.

Source control is highly desirable when developing software, or anywhere you may want to compare two versions of a file or return to a previous version.

In a project, different files may be used. In the normal case once a file is edited, it will be completely changed and it's not possible for us to retrieve the old file. So by using this Visual Source Security Management Software Tool, we keep the old and updated files as different versions. For that ,we keep track of the path where different versions are stored. When a file is updated a new version for the file is added. This feature a secure data ensures transmission or file transmission between the project members. There is no need to create a new file from the beginning as alterations can be done on the existing file, which can then be saved as a new version with same file name, having an extension denoting the version.

This document tries to give a brief idea about the project module with which we can add new projects into our system, visual source security management software that is a security tool in .NET platform.

The different modules that will make the whole system are as follows:

- **Login**
- **Project**
- **Module**
- **File**
- **Role**
- **Users**
- **Rights**
- **Folder browsers**

Login:

It allows only authorized users to enter into the system. Roles and rights have been set to the project members. The project members who have role-id greater than three have the privilege to enter into the actual project and others can view the main form.

Project:

It is the backbone of the Visual Source Security Software. In this project module, we have the privilege to add, delete, edit and update projects into and from the system keeping project code as the primary key. We can automatically set and create the folder where the project should be saved in our system with the help of folder browser module.

Module:

This module helps you to add and delete the module to the corresponding project, which should already exist in our system.

File:

This module provides facility for adding a particular file in a particular module of a particular project, which already exists in our system.

Users:

This module provides you the facility to add the users into the project or into the module or into the file according to his role-id. The role of Administrator is to select a user for the Project. The role of PM is to add a project to the VSSM software. He is responsible for selecting a User as a Project Leader (PL). The role of PL is to who splits the project into various modules. He allots users to a particular module and provides access rights.

Rights:

The rights of the user that can be assigned are read only, write only and read-write options, which has the corresponding right-ids.

Folder Browser:

This module acts a good role in our system, which automatically creates a folder when necessary arises for saving the project into our system.

1.2 Organization Profile

NeST Group is a fast growing multi million dollars, global conglomerate with operations in USA, UK, Middle-east, India, Japan and Australia. NeST has been creating and delivering innovative software solutions in engineering and business domains utilizing state of the art technologies. In the case of competency areas, a well-planned methodology for technology change management is present to be always technically agile. The quality and service standards ensure that the solutions are developed and delivered to the complete satisfaction of the customers.

The institutionalized quality policy is “We are to meet the stated and implied needs of the customers”. The unquenchable passion for quality has led NeST to achieve SEICMM Level 5 and ISO 9001 certificate in a short span of time. Being the most preferred software service providers of Technopark, the center has bagged the ‘Best Regional Software Exporter’ award for the last 3 years running. NeST Cyber Campus is a training division of NeST System.

Philosophy:

NeST follows a three-point philosophy of

- Providing total client satisfaction
- Pursuing excellence in every field
- Working towards development unique and innovative solutions for the industry

Technology management:

In each core competency area, there is a technically working group which identifies and analyses, the technology innovations. Appropriate technologies identified are assimilated through internal development projects; these technologies are transferred into normal development practice through out the organization through their internal technology training programs. This technology assimilation practice propels the development projects in component-based architectures, web based business and automation solutions, Internet security, image processing algorithms and convergence technologies.

Skill Set:

Technology competency is translated to customer solutions making use of a wide skill base. This skill set encompasses multi platform skills spanning UNIX, WINDOWS NT, and IBM operating systems. They have an experienced base in networking environment such as TCP/IP, NETBIOS, SNA, IPX/SPX and ATM. Their database development area includes DBMS like ORACLE, SYBASE and MS/SQL server and front end tools like Power Builder, VB, Developer 2000 and Borland Delphi.

Infrastructure:

The center is staffed with 200 engineers consisting of software professionals and application experts; the center is well connected with customer sites all over the world through high-speed satellite links.

Customer care:

The NeST group places prime importance on customer service standard. To maintain high service standards training is imparted in areas like communication skills and project management and human resources management skills, being a global market player, NeST also emphasize training on culture application for engineers operating in new culture environment. With the state of the art technical and customer service capabilities, NeST firmly believes that they can be a valuable service provider.

Research and development:

NeST R&D center is an autonomous global R&D center promoted by NeST group. It is engaged in a number of major development programs in the field of networking, fibre optics and wireless communication system.

The NeST Systems Pvt Ltd has got a very efficient and skilled team of engineers and scientists who work on the state-of-the art technologies and products in association with fortune 500 companies worldwide.

System Study & Analysis

2. System study & Analysis

2.1 Existing system

The existing system in this case is manual. In order to ensure a quick and error-proof system of entry and retrieval of data, the system has to be computerized.

The existing system is less secure. The team member or user working in a particular module quits without saving or deleting; there is no way to get a backup of the file.

For each project we have to create a folder to work within. i.e., there is no automatic folder creation and members have done, we need not have to look for the whole content. The leaders for seeing what the team members have modified have to browse through the files, which is time-consuming.

Limitations:

In the normal case there exists no way to save the versions of a file which are updated often. When we create and save the file, it will be kept in the secondary storage devices. If some editing is needed to be done on an already existing file, we have to open it and make the necessary changes, and then save it again to make the changes in effect. After this there won't be any way for us to see or retrieve the first saved file, as it has already been changed.

If any user needs the first saved file, he has to again recreate it. There exists no mechanism to retrieve or store data about all the files already being saved in a project. If such a mechanism for finding the various versions added to file exists data or file sharing between different projects can be done. This can save a lot of time. It's possible to protect documents among team members easily and to access file versions easily.

- Less secure
- No automatic folder creation which can be retained at any time
- No show list, show difference

2.2 Proposed system

The Proposed system **Visual Source Security Management Software Tool (VSSM)** is a Visual Basic .NET based project oriented version control system developed for NeST Cyber Campus, Thiruvananthapuram has many advantages over the existing one.

Project Functionalities

Visual Source security management Software tool which helps in the project oriented software management, helps to keep the different versions of a file in a secured form. The different facilities that are available in this tool for a team member are

- **Check Out:** - To make changes on an existing file, check out facility is used. When check out is done on an existing file, the latest version of the file will be loaded into our workspace and the needed changes are done on that file and then saved.
- **Check In:** - The updated files are saved as new versions using the check in facility.
- **History:** - History provides us with the different versions of an existing file. The user is able to find the different paths where all the different versions are saved.

When an editing is needed to be done on an existing file, check out is done. When a file is checked out, a read-write copy of the file is placed in the

working directory. Before a member checkout a file, a working directory is created on a specified drive.

Working Of Visual Source Security Management Software Tool:

Visual Source Security Management Software Tool stores project contents as Read Only for the purpose of ensuring the integrity of the files. If you want to edit a file stored in this system, you must first Check Out the file. When you check out a file, a read - write copy of the file is placed in your working directory. Before you check out files, you must first set up a working directory. Working directories tell the Visual Source Security Management Software Tool where to place files when you exercise a Check Out command.

Check Out a file from this tool, use a design environment to make the changes, save them , then check the file back in to update the repository in this tool. Only the latest copy of the file is being stored in full; the changes also are noted.

To maintain the file integrity, all users have their own working folders for all projects. When multiple users share a working folder, a file checked out by one user can be modified by anyone with access to that folder. Maintaining separate working folders ensures that users modify only files they have checked out themselves. This tool contains an administrative program that enables the administrator to set both default and custom rights on a per-project basis.

Visual Source Security Management Software Tool Need:

Source code is a precious resource. If you are working alone on an unimportant project, you may be able to work without version control but if you are working with a team of developers you need a way to keep all in sync. If you are making changes to a system which is vital to you , you need a system to help you track changes. You need a tool that will make sure that no code is lost , no changes are forgotten. Thus comes the need for visual source security management software tool.

The features of this tool are listed below.

- **It facilitates team development.**

When a group of programmers is working together on a common project, they have to coordinate their efforts to avoid overwriting each others changes. Source Code Security Tool ensure that each file is only being modified by one programmer at a time.

- **It provides version tracking.**

This tool stores the latest-and-greatest copy of each source file. But it also stores older versions making it easy to “go back in time” and retrieve an old version of a file or an entire project.

- A powerful, file based security system.
- This tool combines the task of project management and source control.

Services provided by the tool:

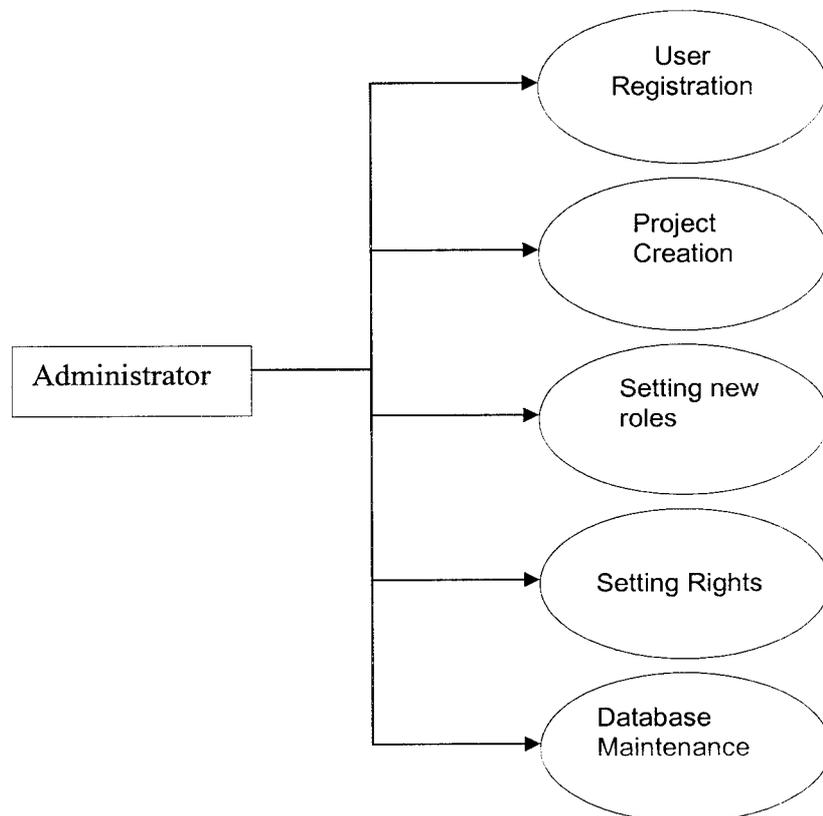
- Prevents accidental deletion of information or files when a development team works with this tool and checks in files with changes or additions, the changes cannot be lost accidentally. The tool stores all changes to a file. Check in and Check out file locking security protects files from accidental overwrite by preventing more than one user from modifying the same file at the same time.
- Organizes files into a nearly unlimited hierarchy of projects and subprojects.
- It stores any type of file.
- History Services
- As developers make changes to files and check them into the repository in visual source security management software tool , the tool maintains detailed logs of changes made on a file . The functions of history services are given below.
- Track versions, archiving and the changes that users make to files, so older versions of the files are readily available for bug fixes and other purposes. Track date and time of changes to all files as they are updated.
- A typical website or software development team includes programmers, writers, testers, managers and architects. Any development environment, however also requires the services of individuals not usually found on a development team.

- They include
 - A librarian to check files in and out , keep them where they belong , and organize and store important documents.
 - A historian to record all file activity.
 - A security guard to make sure that files go only to those with proper access rights assigned to them.

Users of Visual Source Security Management Software Tool:

Administrator's Part:

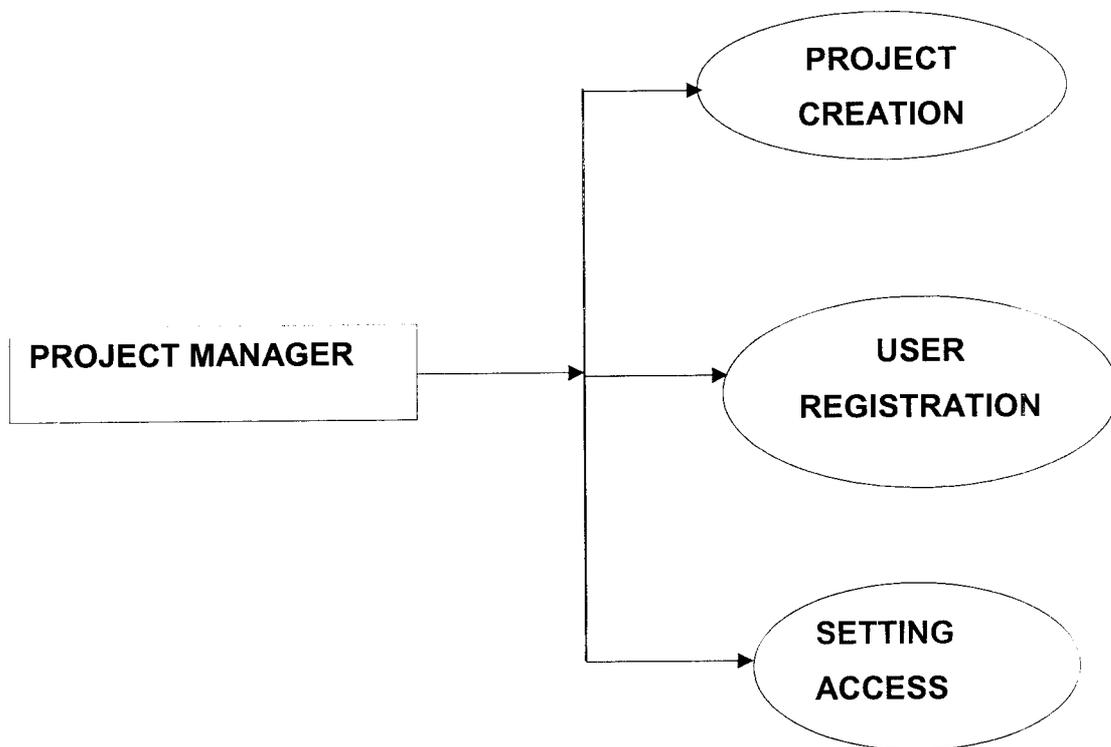
It is the administrator who adds a new user to the system. The status of the user will be set during the registration time itself. Only the administrator has the right to add or delete users to the system and also to view details about different users. The administrator has overall control over the system. The administrator will monitor the rights of the user.



Project Manager's Part:

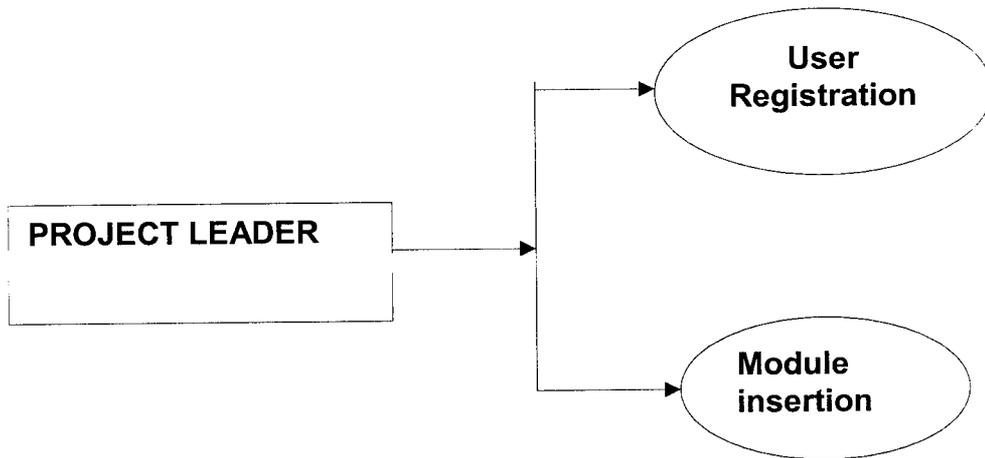
The project manager allots the project, which is to be worked out as a part of this tool. The manager assigns different details about the project such as title, starting and ending date and also the status.

The manager assigns the project leader .The manager has the right to view different details about the project



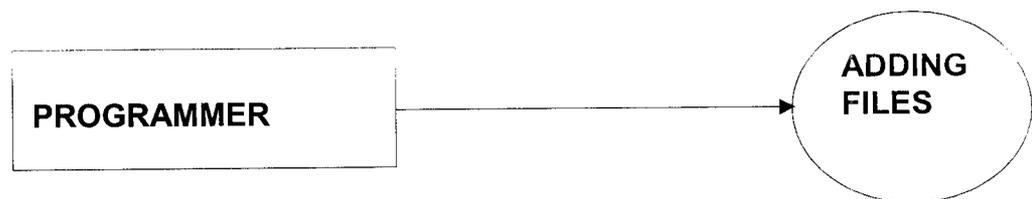
Project Leader's Part

It is the leader who assigns working module to different members. The modules assigned for a particular project will be added as a part of the already registered project.



Project Member's Part:

It is the member who has the overall right to add different files to the project. The new file will be kept in a folder with the selected module.



2.3 Major features of the system

- Highly secure
- There is automatic folder creation
- All the versions can be retrieved at any time
- Access file versions easily.

Labels provide snapshots of a file for quick retrieval, anytime during the software life cycle.

- **Protect documents among team members.**

Check in and check out file locking security protects files from accidental overwrite by preventing more than one user from modifying the same file at the same time.

- **Finely tuned security.**

Administrator assigns different rights to the project members, which are checked frequently.

- **View difference across versions.**

Difference reporting provides quick, visually enhanced access to changes between two different versions of the file.

Programming Environment

3. Programming Environment

3.1 Hardware configuration

The selection of hardware configuration is a very important task related to the software development. Insufficient Random Access Memory may affect adversely on the speed and efficiency of the entire system. The processor should be powerful to handle the entire operations. The hard disk should have sufficient capacity to store the file and applications. An Intel Pentium system with the following configuration was used to develop the project.

Processor	:	Intel Pentium III 667MHz
RAM	:	128MB
Network Interface Card	:	10/100
Floppy Disk Drive	:	3.5''
Keyboard	:	108 keys
Hard Disk	:	20 GB
Mouse	:	Logitech
Monitor	:	Samsung Digital 55bn Color Monitor with 1024 * 768

3.2 Software Specifications

Operating System	Windows 2000 server/Professional
Front end	VisualBasic.NET
Back end	SQL server

Microsoft .NET:

Microsoft released the .NET framework in February 2002, it's biggest initiative since the launch of Windows in 1991. Microsoft.NET is a revolutionary multi-language platform that knits various aspects of application development together with the Internet. The .NET initiative is all about enabling data transfer between networks, PCs and devices seamlessly, independent of the platforms, architecture and solutions. All .NET programs are compiled to an Intermediate Language (IL) rather than to native code, which can be understood by the computer processor. MSIL must be converted to CPU-specific code by a Just in time (JIT) compiler. It helps the runtime and garbage collection keep track of memory that will be released back to the operating system when it is no longer needed.

Microsoft's .NET is the next generation platform for building Web applications and Web Services. It is a platform for XML web services Areas of Microsoft.

- .NET is Microsoft's new Internet and Web strategy
- .NET is not a new operating system
- .NET is a new Internet and Web based infrastructure
- .NET delivers software as web services

- .NET is a framework for universal services
- .NET is a server centric computing model
- .NET will run in any browser on any platform
- .NET is based on the newest Web standards

.NET Platform

- **Open platform** - .NET platform is open platform, any language can be ported to .NET.
- **Versioning** - .NET supports versioning. Two versions of the same component can be run at the same time.

Outcomes of .NET

- Support for Multiple Languages with equal status
- Developed specially for the internet age
- Upgrade for mainframes based architecture to .NET platform
- Processor independence
- Conformance to standards and standardizations

Need For .NET

Many of the innovations contained in .NET platform are driven by limitations in current tools and technologies. Some of the limitations are

Limitations of ASP:

ASP is simple in concept and very easily accessible to new developers, it did not support structured or object oriented programming. A vast amount of interpreted script in ASP, leads to problems with debugging and maintenance.

Limitations of VB6:

- No capability for multithreading
- Lack of implementation inheritance and other object oriented features
- Poor error handling capability
- Poor integration with other languages such as C++
- No effective user interface for internet-based applications.

Microsoft.NET includes the .NET framework, which encompasses the languages and execution platform and class libraries. .NET initiative includes protocols (SOAP) to provide new level of integration of software over the internet.

General Goals of .NET :

- Creation of highly Distributed Applications
- Simplified software development
- Better user interfaces over the web
- Simplified deployment
- Support for a variety of languages
- Future portability of compiled applications

The .NET Framework:

The .NET framework is the infrastructure for the new Microsoft .NET platform. It is a common environment for building, deploying and running Web services and Web Applications. It contains common class libraries- like ADO.NET, ASP.NET and Windows Forms- to provide advanced standard

services that can be integrated into a standard services that can be integrated into a computer systems. The framework is language neutral. Currently it supports C++, C#, Visual Basic and Third-Party languages like COBOL, Perl, Python, Smalltalk and others - will also be available for building future .NET applications.

About VB.NET

VB.NET is virtually a new programming language, based around new core technology - the .NET. The technical changes are so extensive that the developers will be able to compete with C#, C++ and Java developers. It is full object oriented language including the features like inheritance, parameterized constructors and overloading.

The changes in Visual Basic .NET are intended to

- Simplify the language and make it more consistent
- Add new features requested by the users
- Make code easy to read and maintain
- Help programmers to avoid introducing coding errors
- Make applications more robust and easy to debug

VB Vs VB.NET

The earlier versions of Visual Basic have been targeted for windows client applications, VB.NET is intended for creating Web service applications as well. VB.NET introduces a unified property declaration syntax that includes the procedures for getting and setting the property's value.

Reasons to upgrade to VB.NET

- 1. Windows Forms Designer :** Microsoft Visual Basic®.NET enables you to build rich applications for Microsoft Windows® with unprecedented power and productivity using the new Windows Forms Designer.
- 2. Rapid Application Development :** VB.NET delivers Rapid Application Development (RAD) for the web with the Drag-and-Drop Web Forms Designer, full VB.NET code behind forms, and HTML statement completion.
- 3. XML web services :** VB.NET allows developers to build and consume powerful, integrated XML web services that reduce development time by enabling software aggregation from any platform.
- 4. Object Oriented Programming Language :** VB.NET provides developers with a first-class object-oriented programming language with support for implementation inheritance, free threading, structured exception handling, attribute-based programming and much more.

5. **.NET framework access** : VB.NET provides developers with full access to Microsoft .NET framework, a comprehensive library of classes and functionality for data access, security, XML support and more.
6. **New Productivity Features** : VB.NET includes new productivity features including control anchoring and docking and in-place menu editing to minimize time spent on building and deploying applications.
7. **Up-to-Date Assistance** : VB.NET provides continual up-to-date assistance in building robust application with the background compiler, Task list, and Dynamic Help.
8. **VB.NET Upgrade Wizard** : The VB.NET Upgrade Wizard will automatically upgrade your VB6.0 projects to take advantage of all the powerful features in VB.NET.
9. **Develop for devices** : VB.NET lets developers build applications that target a vast array of handheld and wireless devices using Microsoft Mobile Internet Toolkit.
10. **Unified Development Environment** : VB.NET provides developers with the award winning Visual Studio .NET unified development environment, which includes features like the server Explorer, Visual Database Tools, Visual Studio Macros, Crystal Reports, cross-language debugger, component designer, auto-hide windows and much more!!

About SQL Server

Fundamentals of SQL Server Architecture:

Microsoft SQL Server is a structured Query language (SQL) based, Client/server relational database. Each of these terms describes a fundamental part of the architecture of SQL Server.

Database:

A database is similar to a data file in that it is a storage place for data. Like a data file, a database does not present information directly to a user; the user runs an application that accesses data from the database and presents it to the user in an understandable format. A database typically has two components: the files holding the physical database and the database management system (DBMS) software that applications use to access data. The DBMS is responsible for enforcing the database structure, including:

- Maintaining the relationship between data in the database.]
- Ensuring that data is stored correctly, and that the rules defining data relationships are not violated.
- Recovering all data to a point of known consistency in case of system failures.

Relational Database:

There are different ways to organize data in a database but relational databases are one of the most effective. In a relational database, data is collected into tables. A table represents some class of objects that are important to an

organization. Each table comprises columns and rows (attribute and tuples in relational theory). Each column represents an instance of the object represented by the table. Each row represents an instance of the object represented by the table. When organizing data into tables, you can usually find many different ways to define tables. Relational database theory defines a process, normalization, which ensures that the set of tables you define will organize your data effectively.

Connectivity:

OLEDB: SQL server 7.0 includes a native OLEDB provider for SQL Server that complies with the OLEDB2.0 specification. The provider fully supports SQL server 7.0 and 6.5. The OLEDB provider for SQL server fully supports applications using

- Active X Data Objects (ADO)
- OLEDB

The SQL Server 7.0 Server engine uses OLEDB for communication.

- Between internal components such as the storage engine and relational engine
- Between SQL server installations when using remote stored procedures.

As the interface to other data sources for distributed queries. ODBC: SQL Server 7.0 includes an updated SQL ODBC server 3.7 driver that is compliant with the open database connectivity 3.51 specification and the ODBC 3.7 Driver Manager. The SQL server ODBC driver fully supports SQL server 7.0 and 6.x

servers. The Microsoft server DSN configuration wizard makes creating and managing SQL server data sources easier. File DSN support makes distribution data sources easier. The SQL server ODBC driver also has other improvements when connecting to SQL server 7.0 servers, such as establishing more efficient connections that are completed in a single roundtrip using default settings.

About windows 2000:

Windows 2000 uses of NT (new technology) kernel. It is more compatible and more powerful than any other workstation used previously making easier to user and management of a company, irrespective of place/ field of operation.

Features of windows 2000:

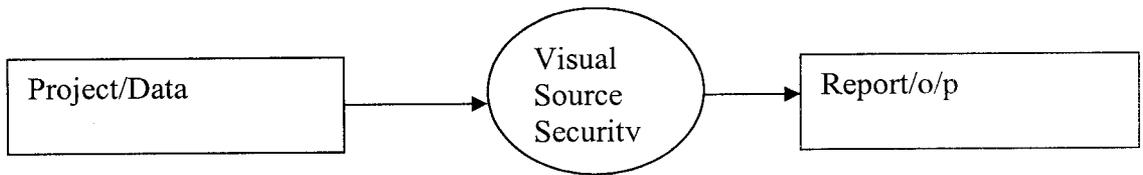
- Easy to use
- Easy to manage
- More compatible
- More powerful
- Efficient management of files and folders
- Internet and communication

System Design & Development

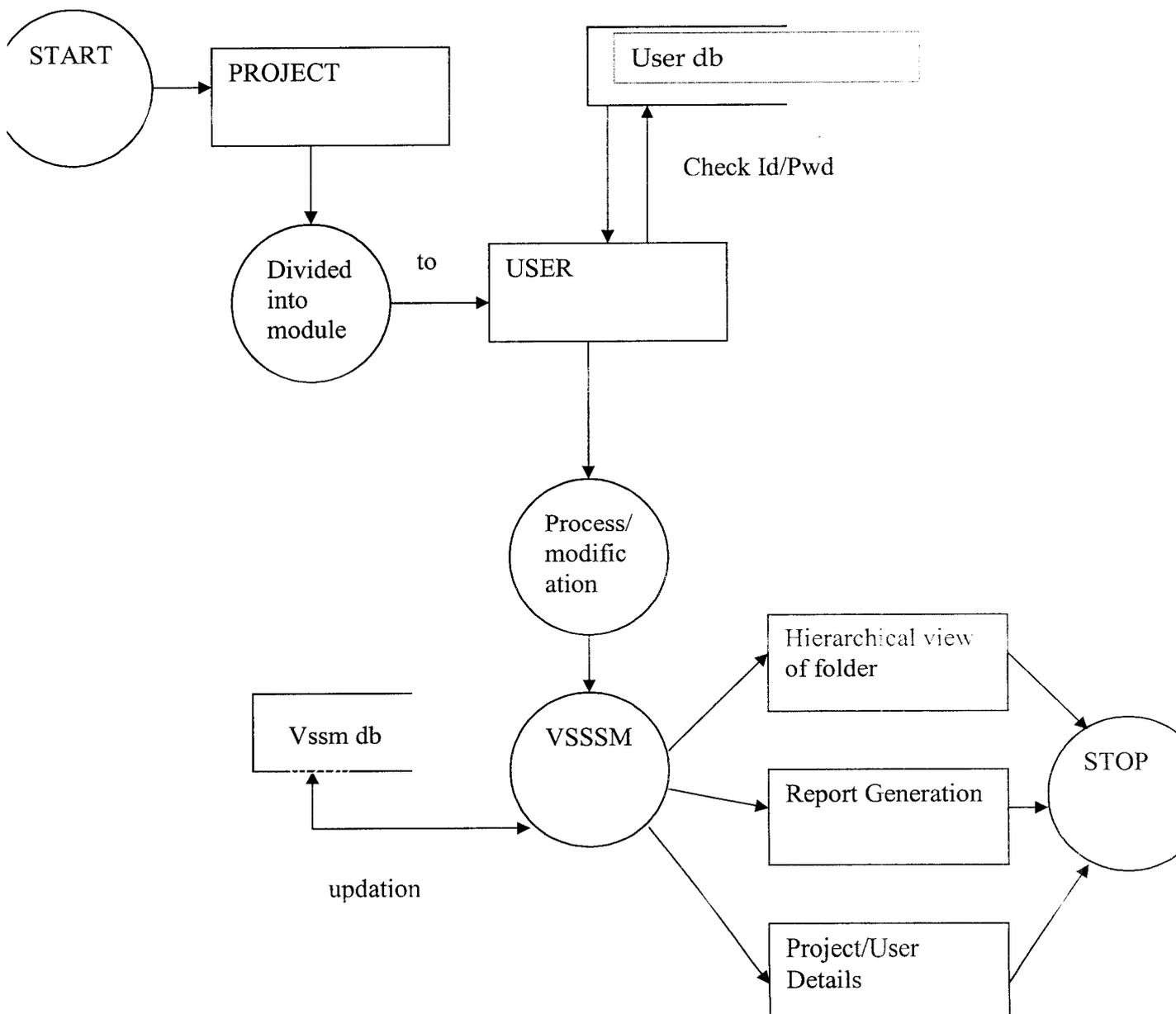
4. System Design & Development

4.1 Data Flow Diagram

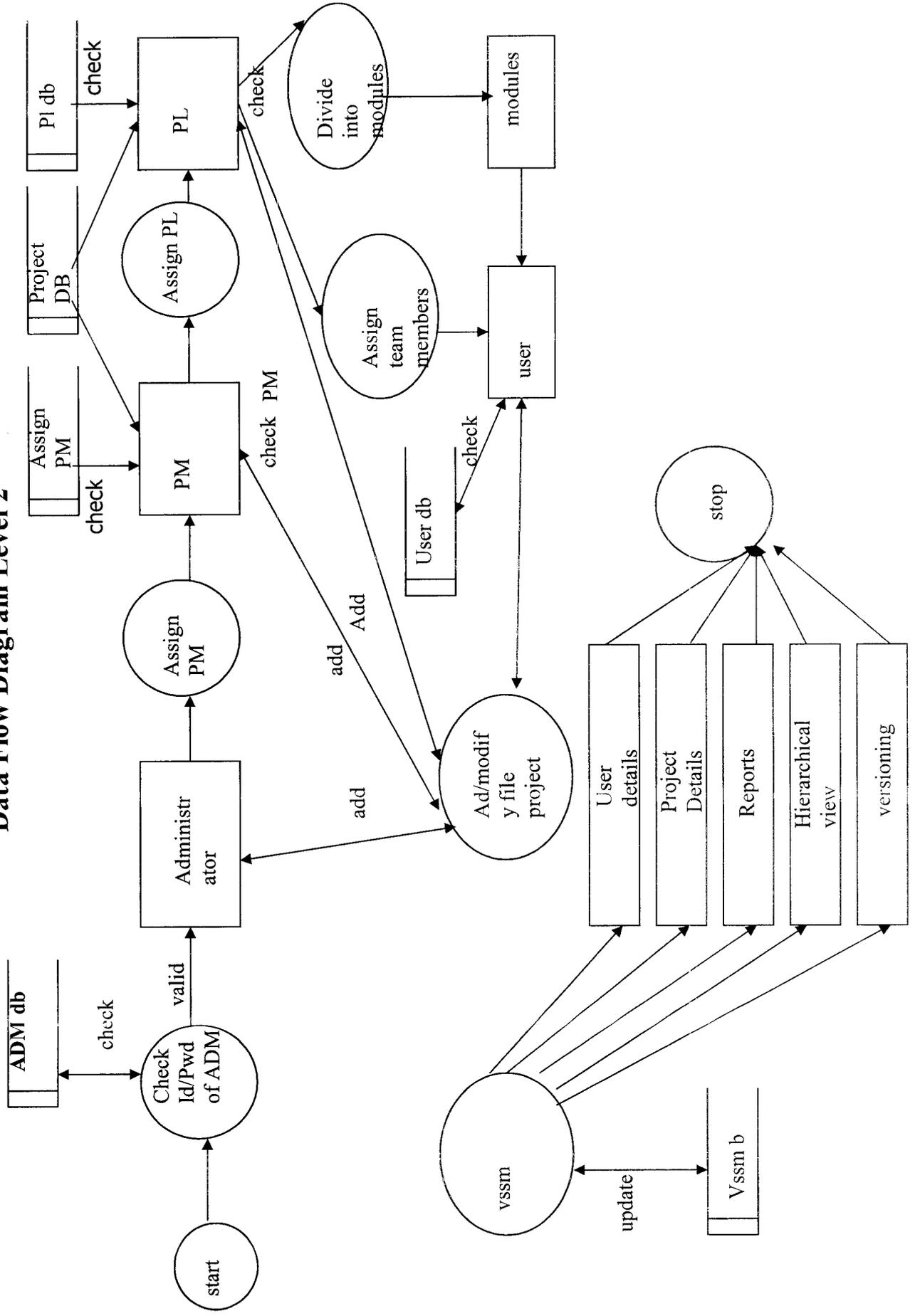
LEVEL 0 DATA FLOW DIAGRAM



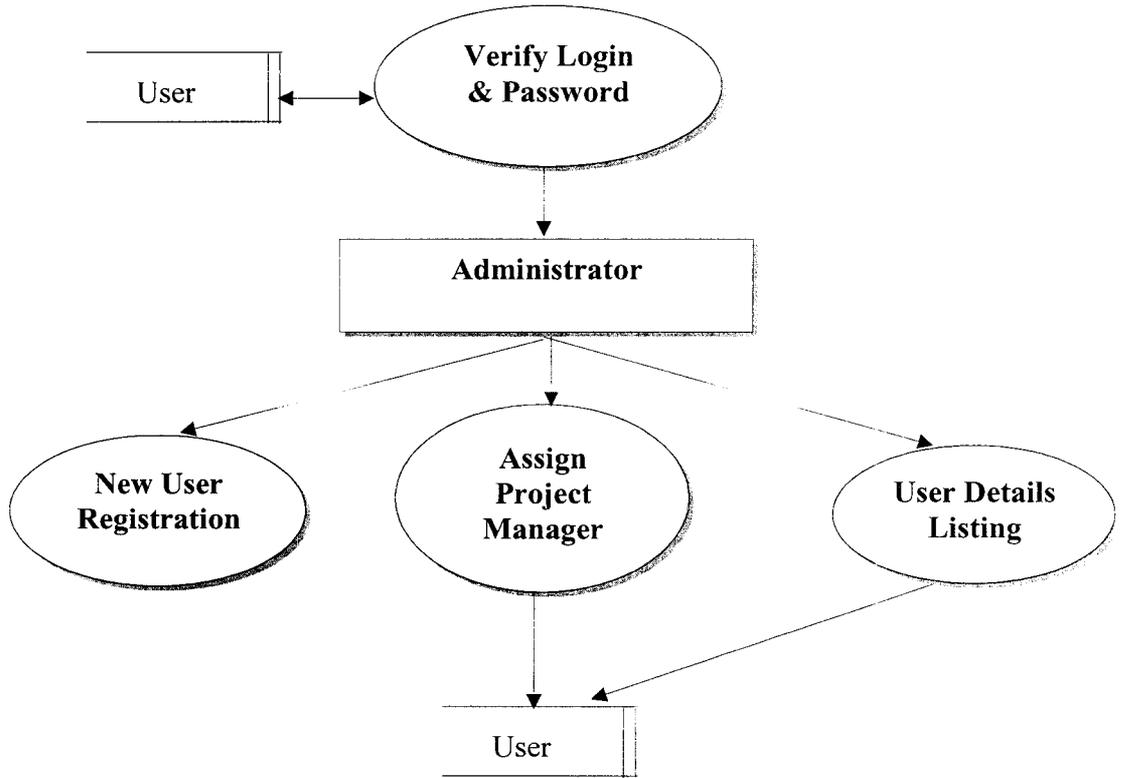
LEVEL 1 DATA FLOW DIAGRAM



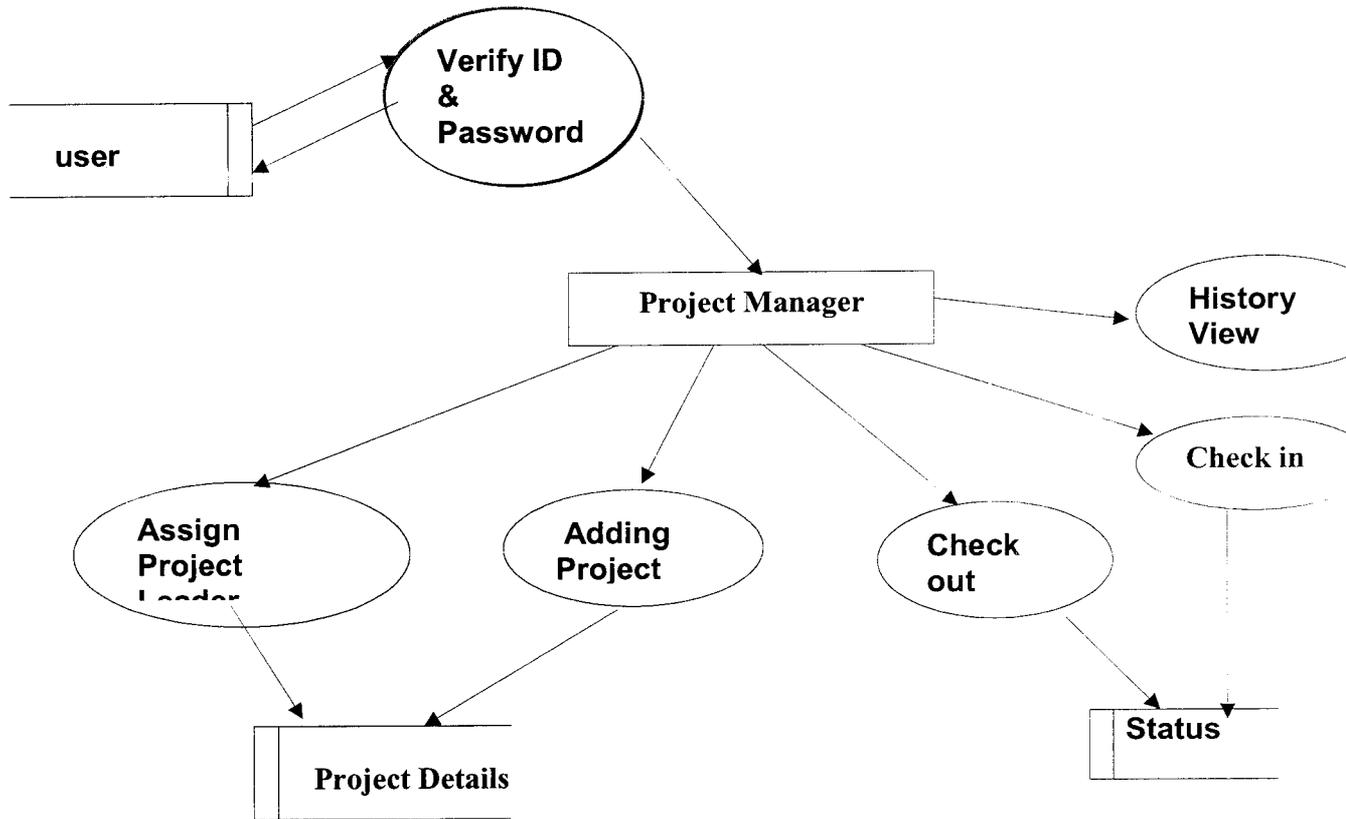
Data Flow Diagram Level 2



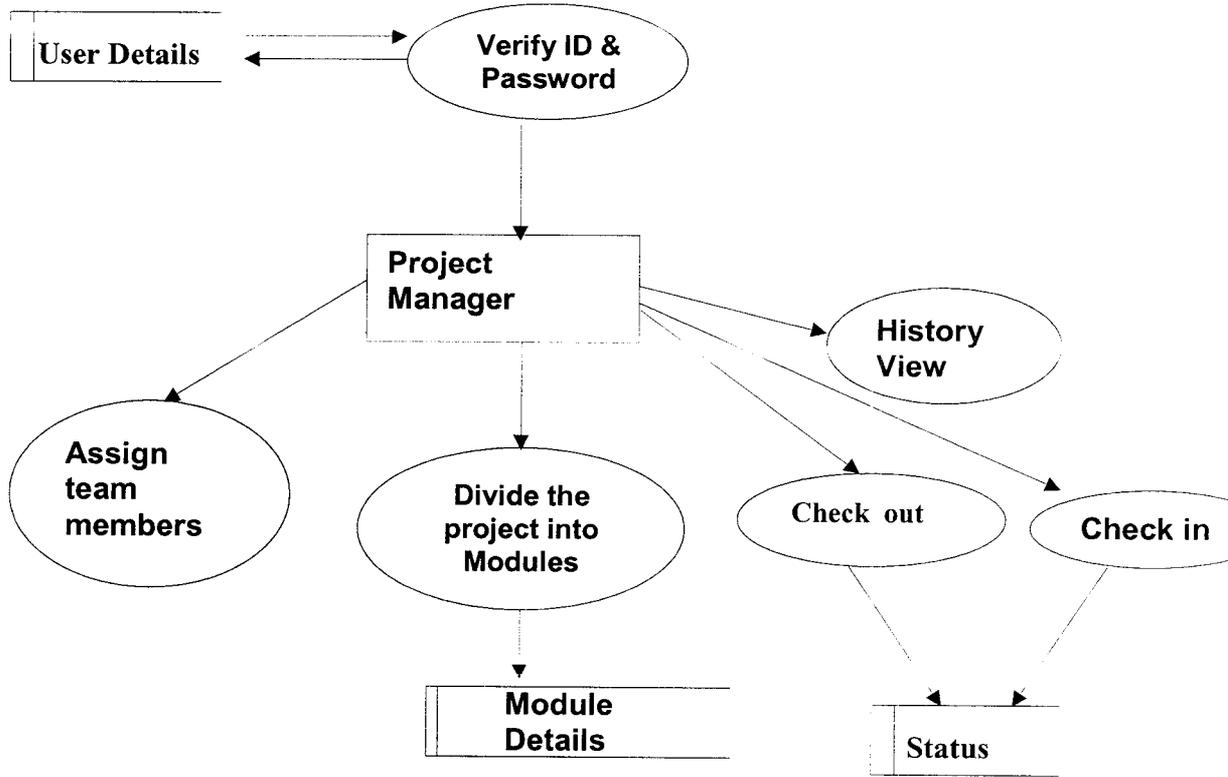
DFD for Administrator



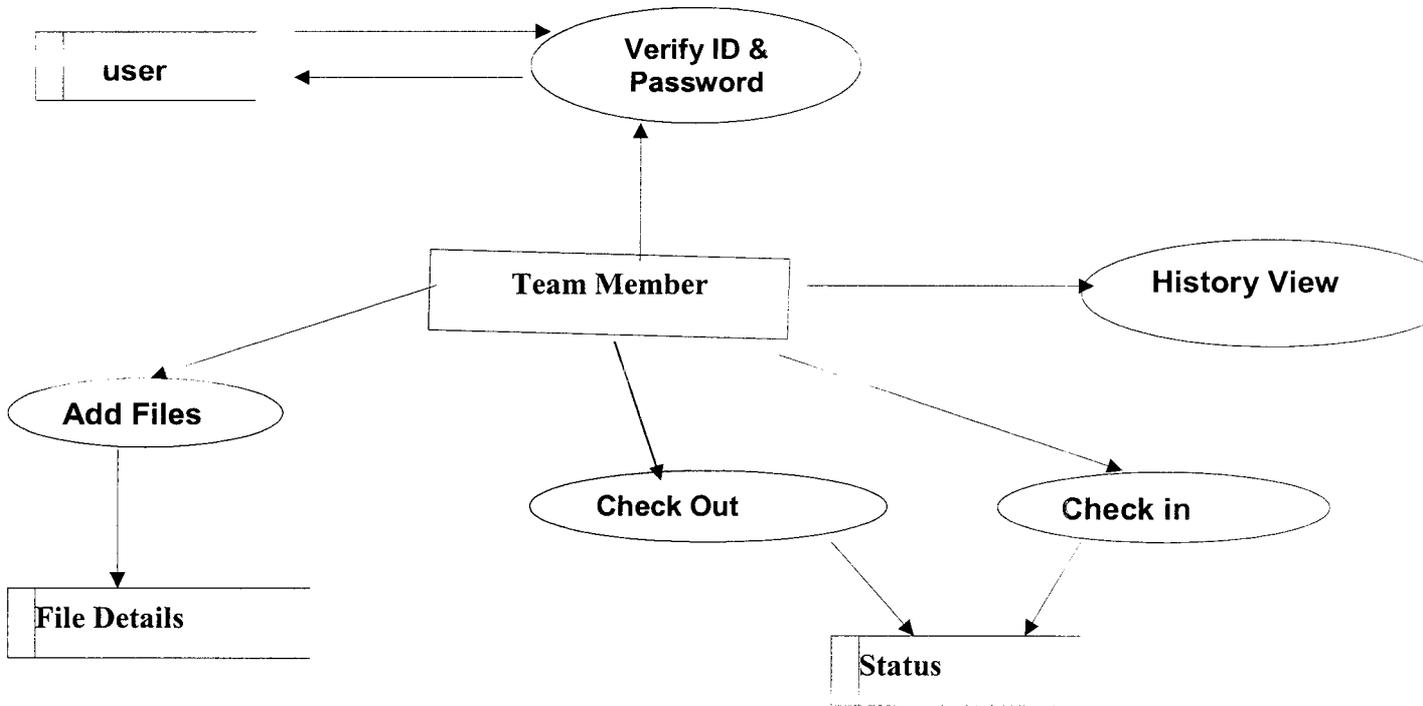
DFD FOR PROJECT MANAGER



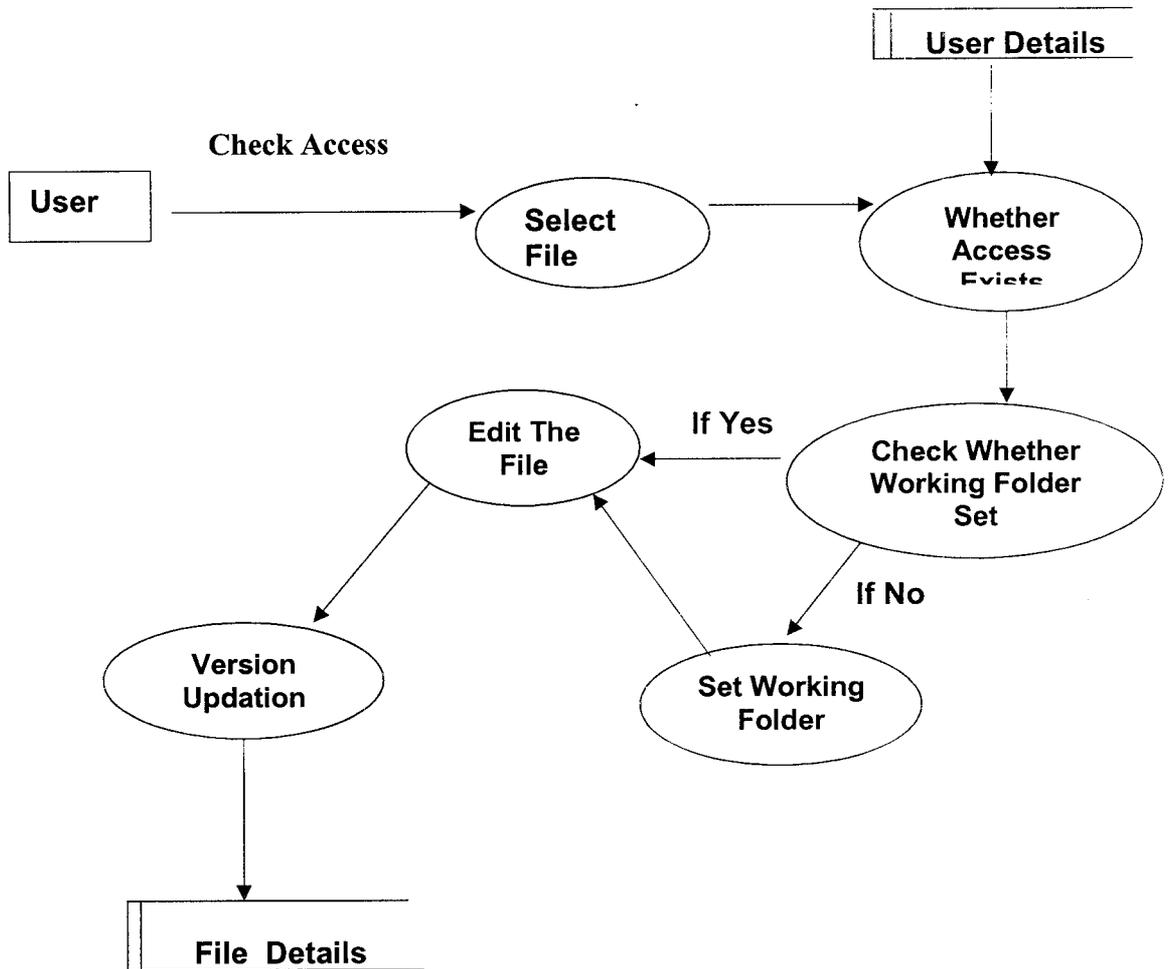
DFD FOR PROJECT LEADER



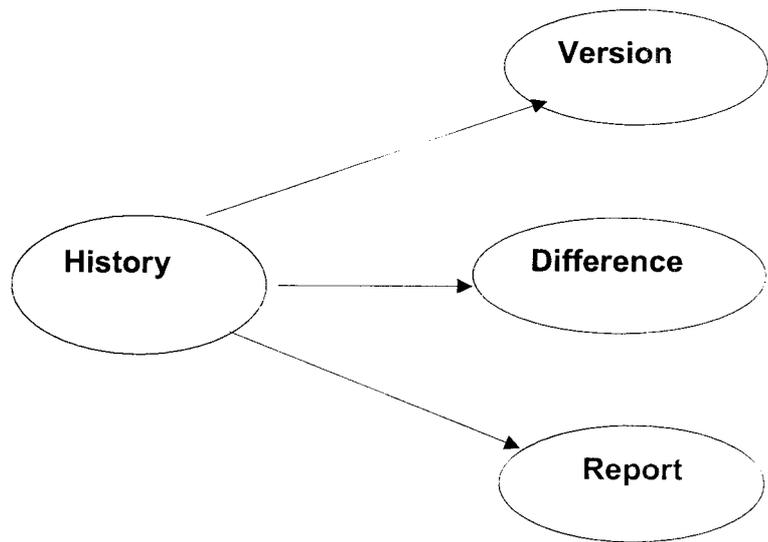
DFD FOR Team Member



DFD For Check Out



DFD for History



4.2 File Design

The tables used in the Visual Source Security Management Software are as follows:

1. User Details

Data Name	Data Type	Description
Uid	Varchar	Used to create a user id for each user in the VSSMST. It is unique for every user in the VSSMST.
Pwd	Varchar	A password is allotted to every user in the VSSMST.
Role_Id	Integer	The users in the VSSMST are categorized based on the roles performed by them. It is done through the role id.
Module_Id	Varchar	Indicates where the file is stored in the module of a project.
Right_Id	Integer	Specifies the rights (read, write and access) given to the users in the VSSMST. It is done through the right id.
Working_Folder	Varchar	Used to create a folder in the client machine where the files will be created by the programmer in the VSSMST..
Pcode	Varchar	Indicates where the file is stored in the project.

2. Project Member

Data Name	Data Type	Description
Pcode	Varchar	It is unique and is used to identify the project created in the VSSMST.
Uid	Varchar	The UserId is unique and specifies the users involved in a project in the VSSMST.

3. Project Details

Data Name	Data Type	Description
Pcode	Varchar	It is unique and is used to identify the project created in the VSSMST.
Pname	Varchar	It is used to assign a name for the project created in the VSSMST.
Date_Creation	Varchar	Used to store the date of creation of the project in the VSSMST.
Location	Varchar	Specifies where the project stored in the VSS.
PL	Varchar	It is used to select a Project Leader for a project in the VSSMST.

4.File_Details

Data Name	Data Type	Description
File_Id	Varchar	Used to create a file id for the file created. It is unique for every module of a project in the VSSMST.
FileName	Varchar	Used to identify a file.
Location	Varchar	Specifies where the file will be stored in the VSSMST.
Module_Id	Varchar	Indicates where the file is stored in the module of a project in the VSSMST.
Pcode	Varchar	Indicates where the file is stored in the project in the VSSMST .

5.File_Log

Data Name	Data Type	Description
File_Id	Varchar	Used to create a file id for the file created. It is unique for every module of a project in the VSSMST.
Module_Id	Varchar	Indicates where the file is stored in the module of a project in the VSSMST.
Pcode	Varchar	Indicates where the file is stored in the project in the VSSMST .
Uid	Varchar	The UserId is unique and specifies the users involved in a project in the VSSMST.
Location	Varchar	Specifies where the file will be stored in the VSSMST.

6.Module_Details

Data Name	Data Type	Description
Pcode	Varchar	Indicates where the module is stored in the project in the VSSMST
Module_Id	Varchar	Used to create a file id for the file created. It is unique for every project In the VSSMST.
Module_Name	Varchar	It is used to assign a name for the module created in a project in the VSSMST.

7.Rights

Data Name	Data Type	Description
Right_Id	Integer	It indicates the right given to the users of a Project in the VSSMST.
Rights	Varchar	Used to specify the right (read, write and access) given to the users of a project in the VSSMST.

8. Roles

Data Name	Data Type	Description
Role_Id	Integer	It indicates the role given to the users of a Project in the VSSMST.
Role	Varchar	Used to specify the role given to the users of a project in the VSSMST.

9. Status

Data Name	Data Type	Description
File_Id	Varchar	Used to specify the Fileid of the file in the module of the project in the VSSMST.
File_Name	Varchar	Used to specify the file name in the module of the project in the VSSMST.
Checkout_Time	DateTime	Indicates the time when the user unlocks the file after the modification in the module of a project in the VSSMST.
Checkin_Time	DateTime	Indicates the time when the user locks the file for modification in the module of a project in the VSSMST.
Label	Varchar	Specifies the purpose behind file modification in the VSSMST.
Pcode	Varchar	Specifies the project selected by the user in the VSSMST.

10. File Status

Data Name	Data Type	Description
File_id	Varchar	Used to specify the Fileid of the file in the module of the project in the VSSMS
File_name	Varchar	Used to specify the file name in the module of the project in the VSSMS.
Uid	Varchar	The UserId is unique and specifies the users involved in a project in the VSSMS.
Check_in	Date Time	Indicates the time when the user locks the file for modification in the module of a project in the VSSMS.
Check_out	Date Time	Indicates the time when the user unlocks the file after the modification in the module of a project in the VSSMS.
Curr_status	Numeric	Difference between the check_in and check_out times

11.Version

Data Name	Data Type	Description
Pcode	Varchar	Indicates the project in VSSMS .to which the file belongs.
Version	Numeric	A whole number which indicates the number of times the file has undergone modification .
Location	Varchar	Specifies where the file will be stored in the VSSMS.
Creation_date	Varchar	Used to store the date of creation of the file.
PL	Varchar	It is used to select the Project Leader to whose project the file belongs.

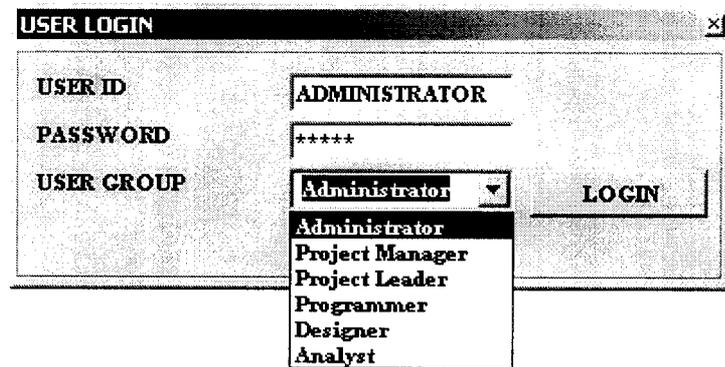
o

4.3 Input Design

Login Forms

➤ ADMINISTRATOR LOGIN

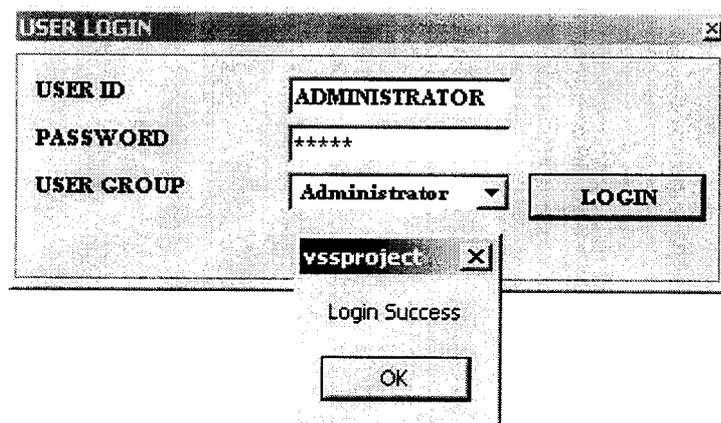
Enter the corresponding user id, password and user group of a particular user before login.



The screenshot shows a window titled "USER LOGIN" with three input fields: "USER ID" containing "ADMINISTRATOR", "PASSWORD" containing "*****", and "USER GROUP" containing "Administrator". A "LOGIN" button is located to the right of the "USER GROUP" field. The "USER GROUP" dropdown menu is open, displaying a list of options: "Administrator", "Project Manager", "Project Leader", "Programmer", "Designer", and "Analyst".

➤ LOGIN SUCCESS

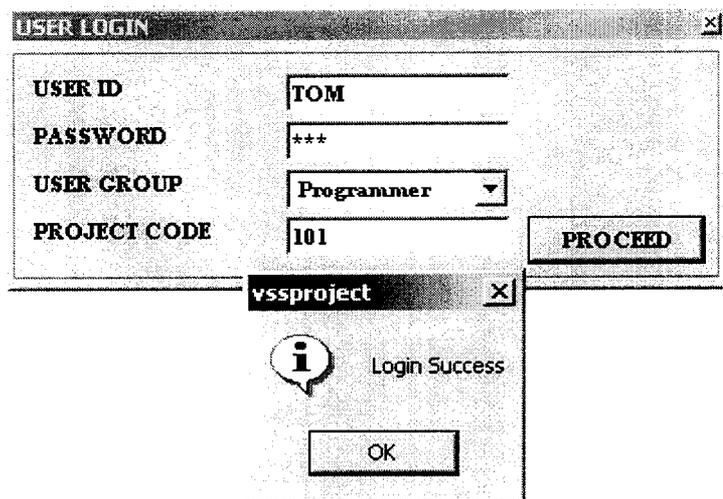
If the user id, password and user group entered are valid and then entering the login button, a message box with "login success" will be displayed.



The screenshot shows the "USER LOGIN" window with the same input fields as the previous image. A message box titled "vssproject" is displayed in the foreground, containing the text "Login Success" and an "OK" button.

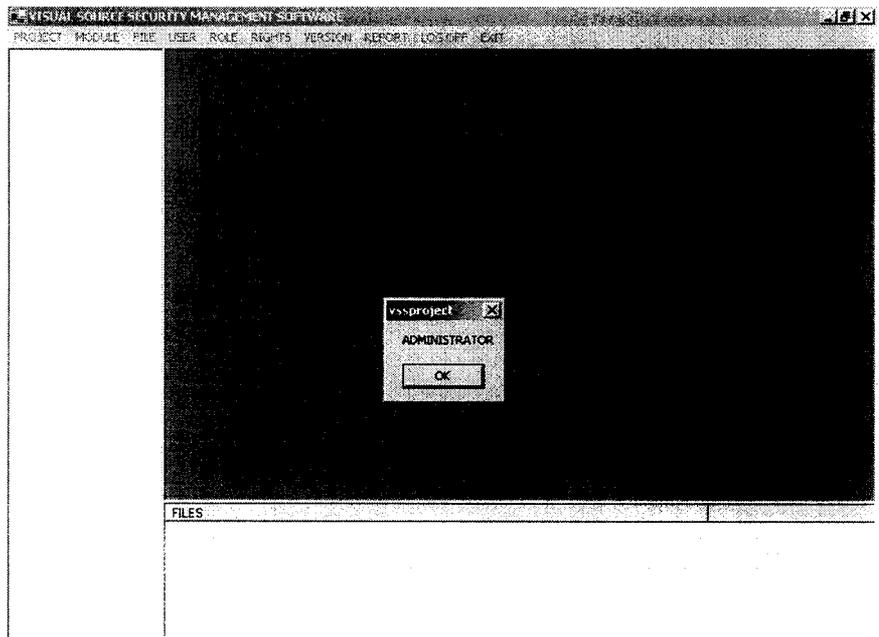
➤ USER LOGIN

If the user entered have selected programmer in the user group, then while entering login, we should specify the project code and enter the proceed button to enter into the particular project.



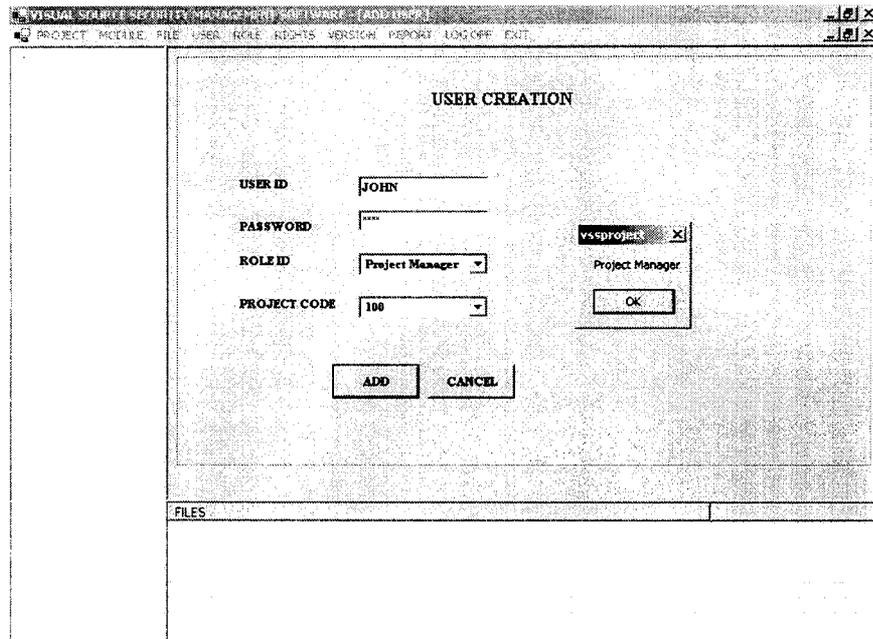
➤ MAIN FORM

All the users except programmer have the privilege to enter into the main form as soon the login proceeds.



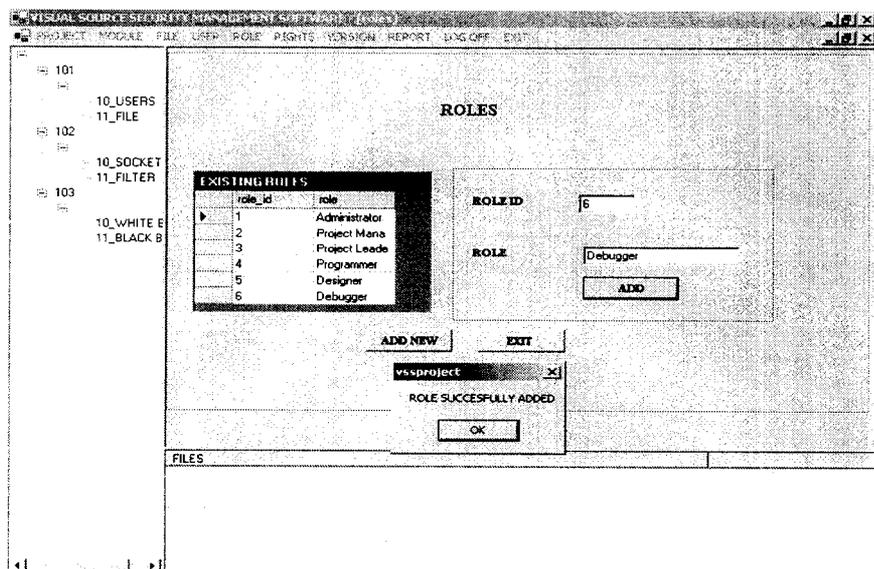
➤ USER CREATION

The Administrator have the privilege to delete the project manager, project leader and the programmer.



➤ ROLES

The Administrator have the privilege to set roles for the new users by giving them role-id and their corresponding roles .



➤ PERMISSION

The Administrator have the right to set permission for the particular user to enter into the particular project, or into the module or into the file according to their roles .

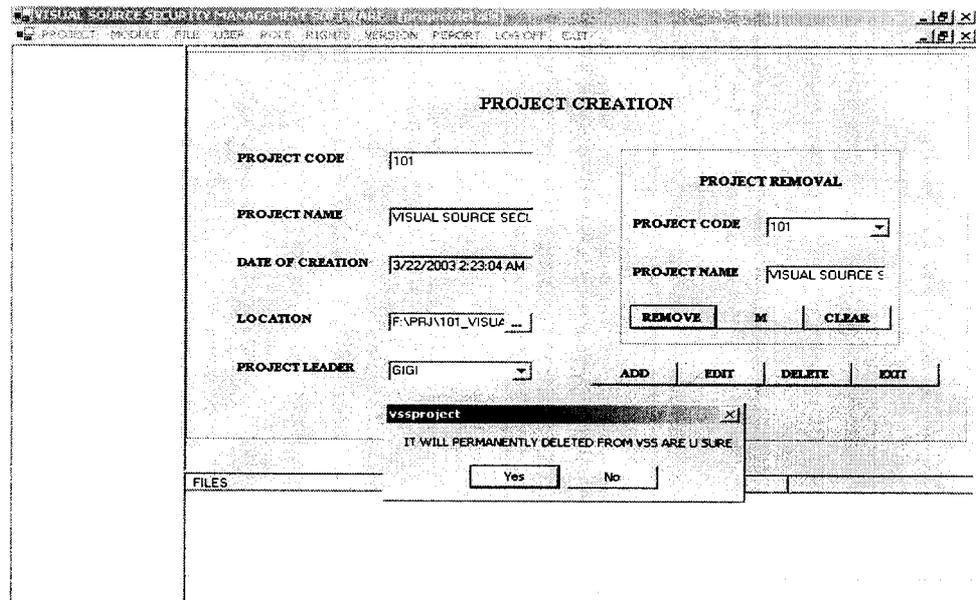
The screenshot shows a web application window titled "VSSOURCE SECURITY" with a menu bar containing "PROJECT", "MODULE", "FILE", "USER", "ROLE", "RIGHTS", "PERSON", "REPORT", "LOG OFF", and "EXIT". On the left, a tree view shows a hierarchy: 101 (10_USERS, 11_FILE), 102 (10_SOCKET, 11_FILTER), and 103 (10_WHITE E, 11_BLACK B). The main content area is titled "PERMISSION" and contains several dropdown menus: "USER ID" (TOM), "PROJECT CODE" (102), "MODULE ID" (10), "ROLE ID" (4), and "RIGHT ID" (1). A "SET PERMISSION" button is located below these fields. A small dialog box titled "vssproject" is open, displaying "PERMISSION GRANTED" and an "OK" button. At the bottom of the main window, there is a "FILES" section.

➤ PROJECT CREATION

The Administrator have the privilege to add a new project into the system

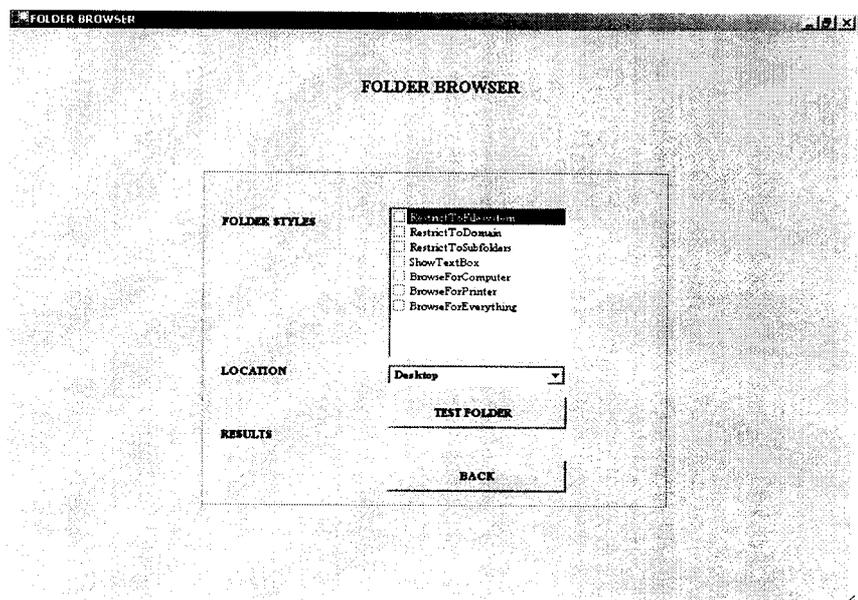
The screenshot shows a web application window titled "VSSOURCE SECURITY" with a menu bar containing "PROJECT", "MODULE", "FILE", "USER", "ROLE", "RIGHTS", "PERSON", "REPORT", "LOG OFF", and "EXIT". The main content area is titled "PROJECT CREATION" and contains several input fields: "PROJECT CODE" (101), "PROJECT NAME" (L SOURCE SECURITY), "DATE OF CREATION" (3/22/2003 2:23:04 AM), "LOCATION" (F:\PRJ), and "PROJECT LEADER" (GIGI). A "PROJECT CREATION" button is located below these fields. A small dialog box titled "vssproject" is open, displaying "Successfully Entered" and an "OK" button. At the bottom of the main window, there are buttons for "ADD", "EDIT", "DELETE", and "EXIT", and a "FILES" section.

The Administrator have the privilege to delete, edit and update the project as per their requirements.

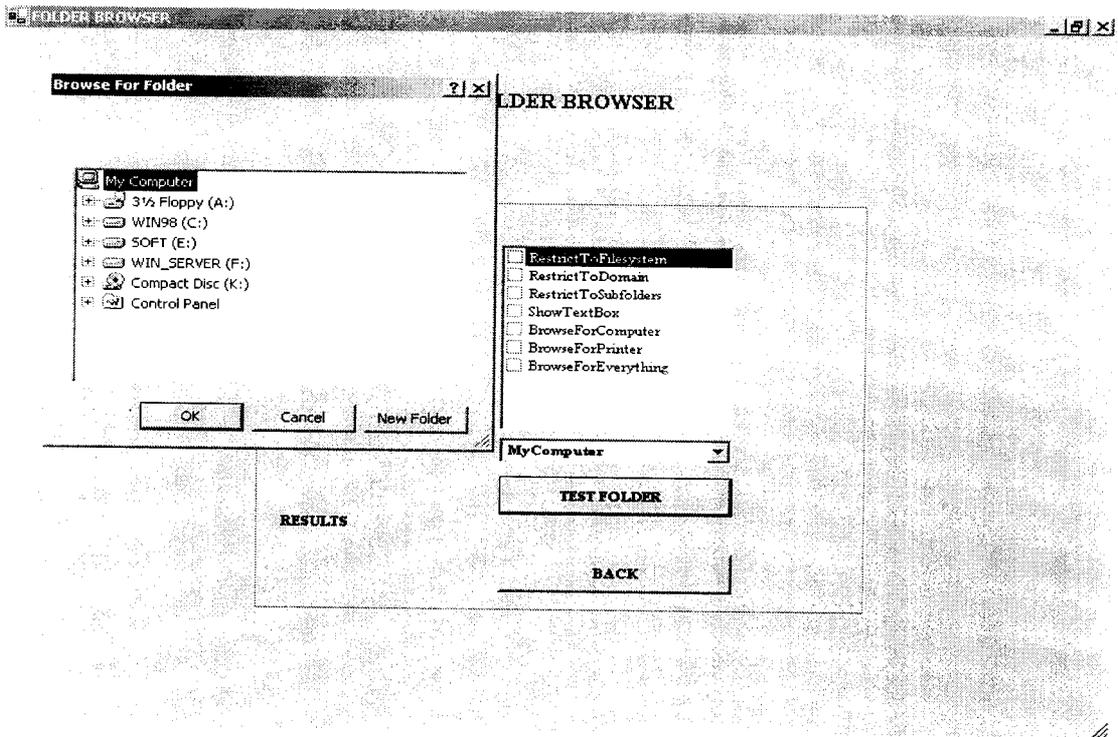


➤ FOLDER BROWSER

The folder browser gives the user the option to choose the place where the user has to save the project

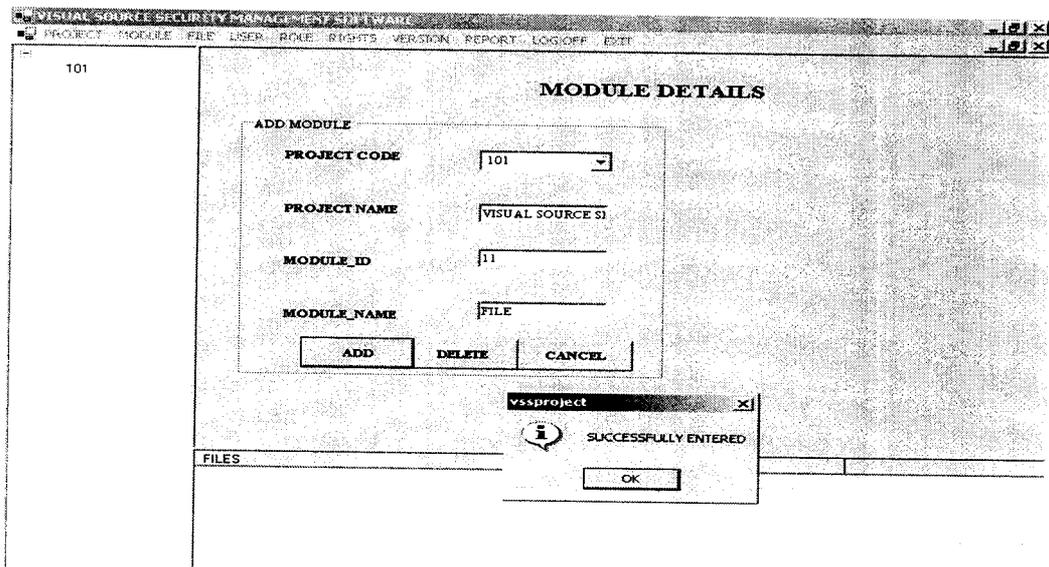


- The folder browser will be displayed as soon as the location button in the project creation form is entered.

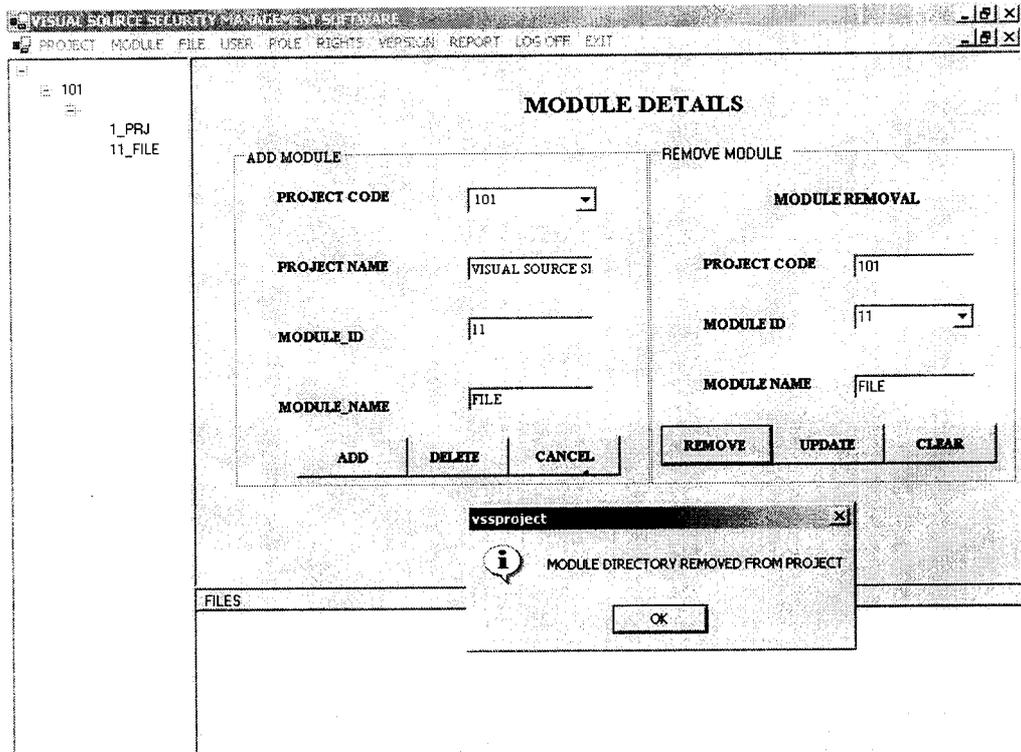


➤ MODULE DETAILS

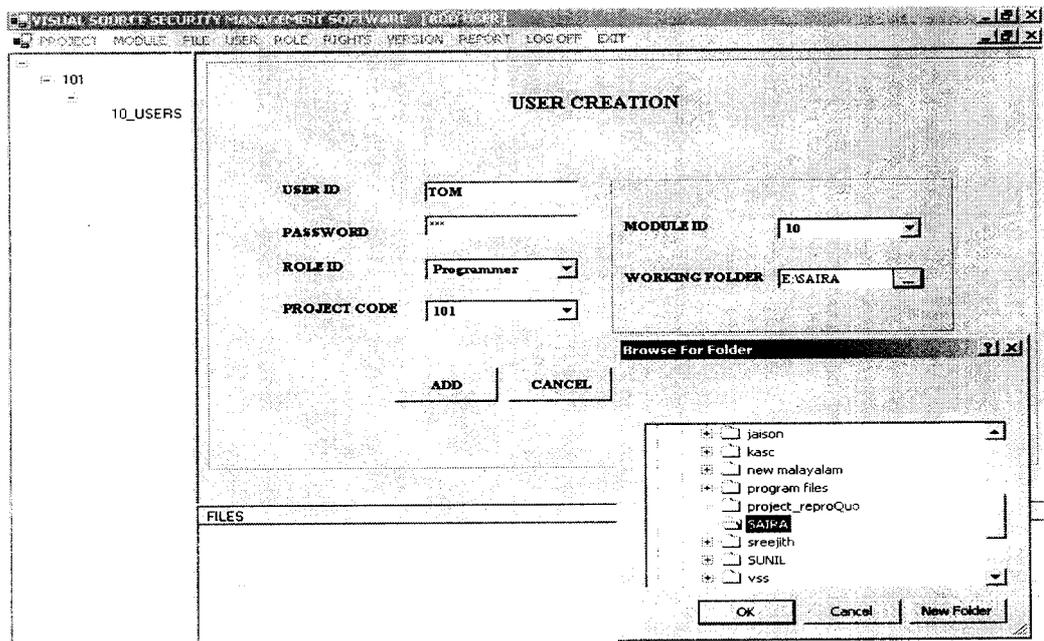
The Project Leader has the privilege to add the module into the project with module-id and project code.



The Project Leader has the privilege to delete the module into the project with module-id and project code.

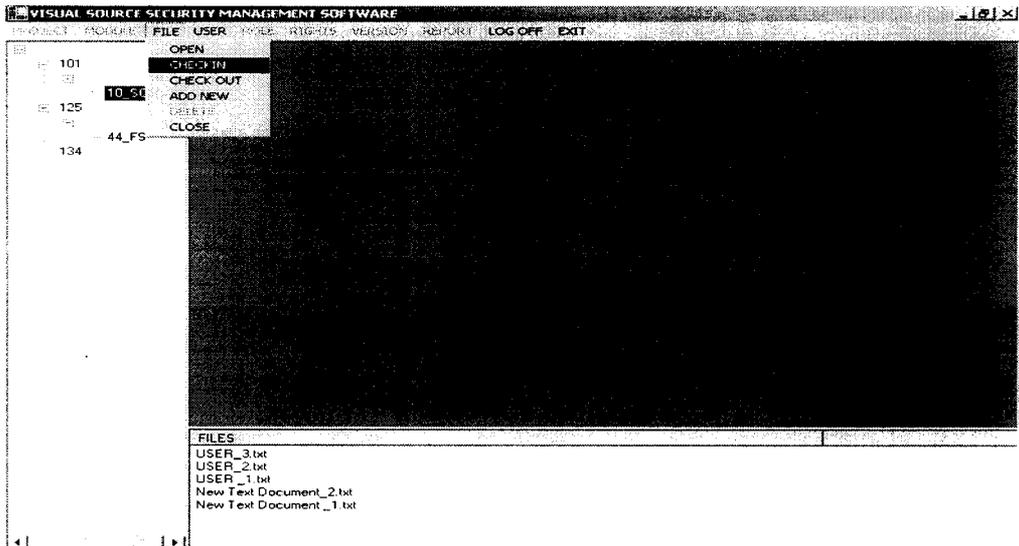


The Project Leader has the privilege to add the programmer representing the project code and the module id.

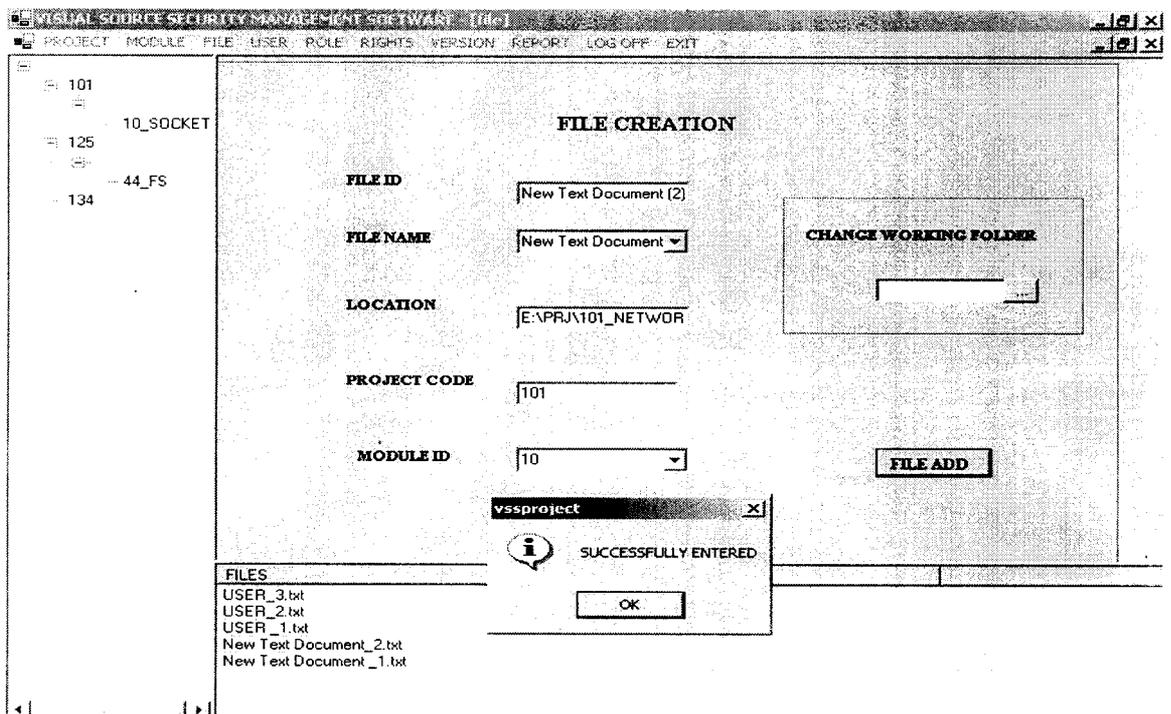


➤ FILE CREATION

This is the main form representing the files available in a particular module in a particular project.

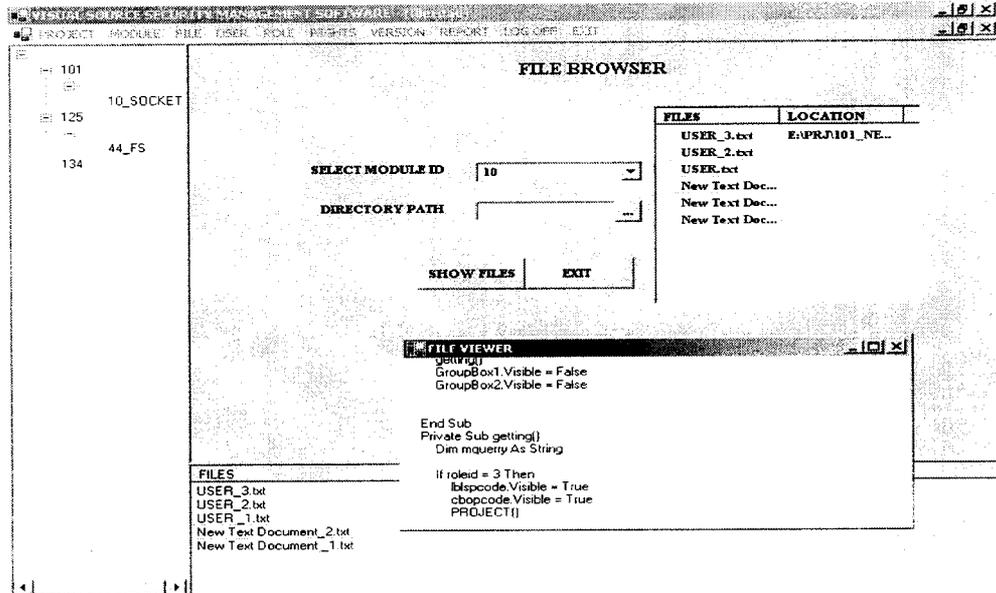


The programmer has the privilege to add a new file into a particular module in a particular project.

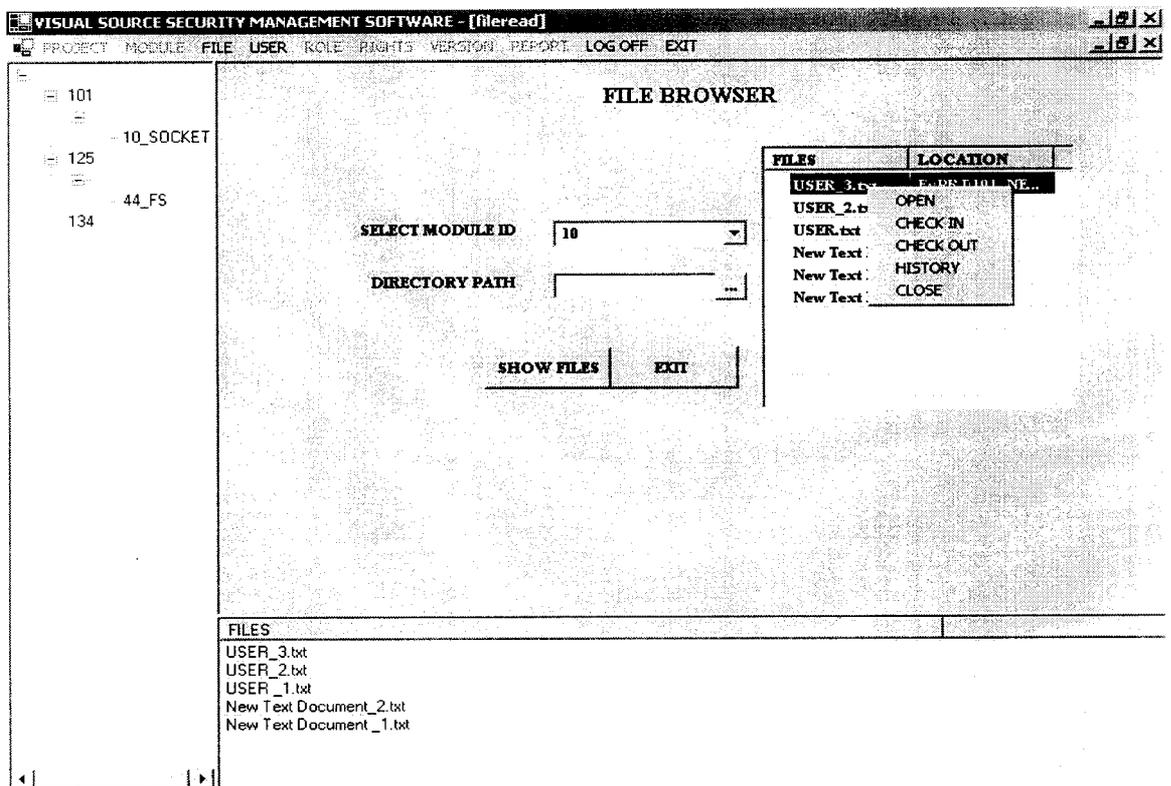


The various options that the programmer can perform are

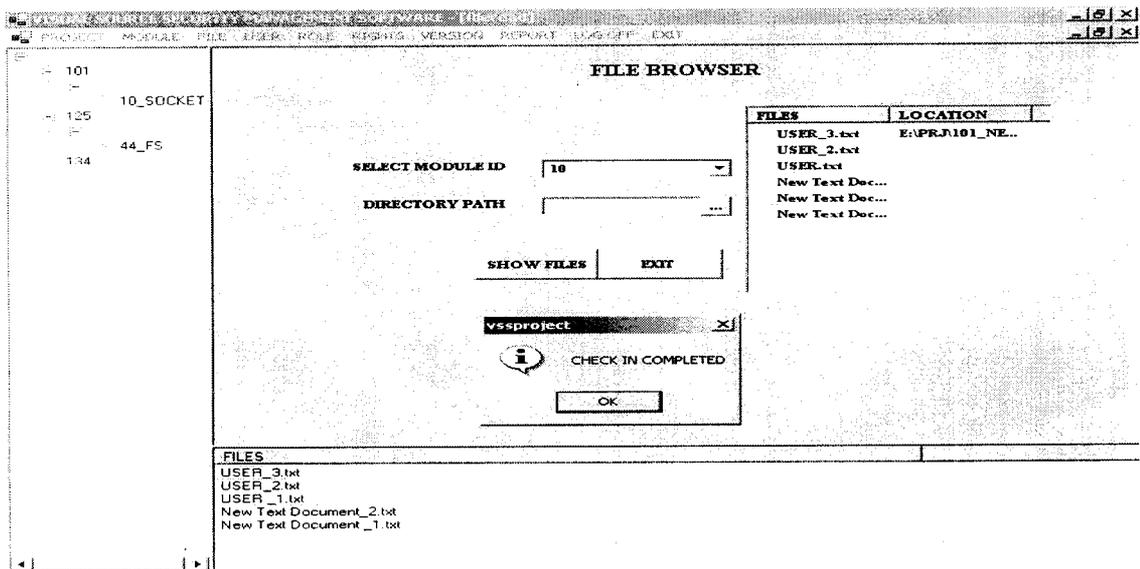
- Open the file
- Check in
- Check out
- History



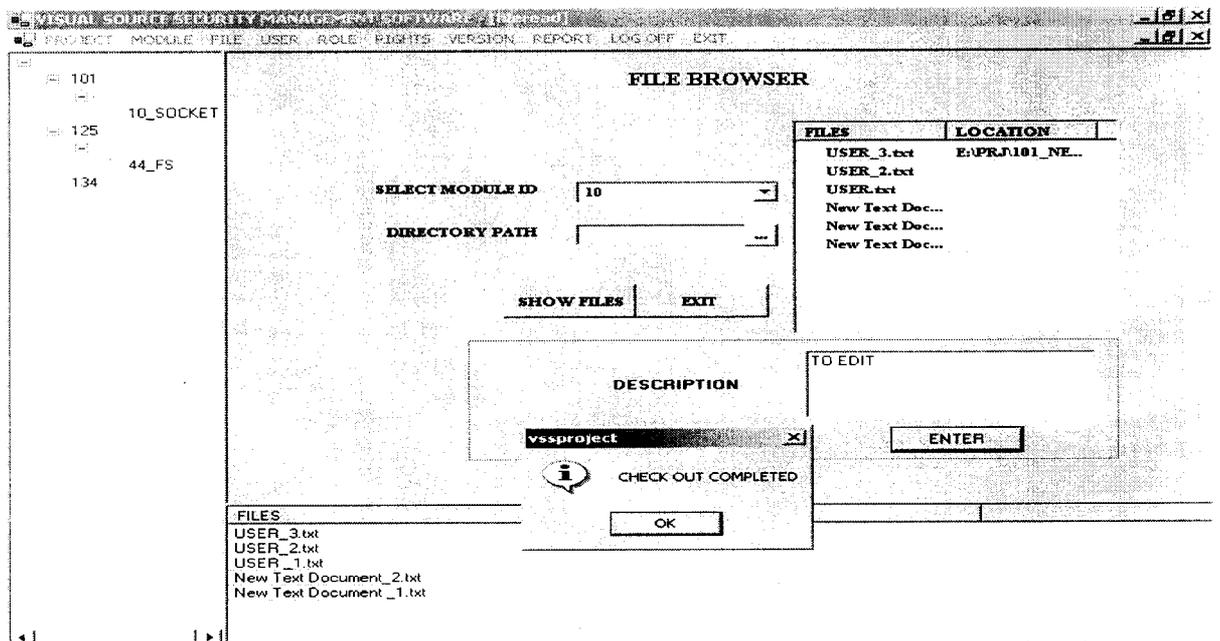
The programmer can open the file using the open button.



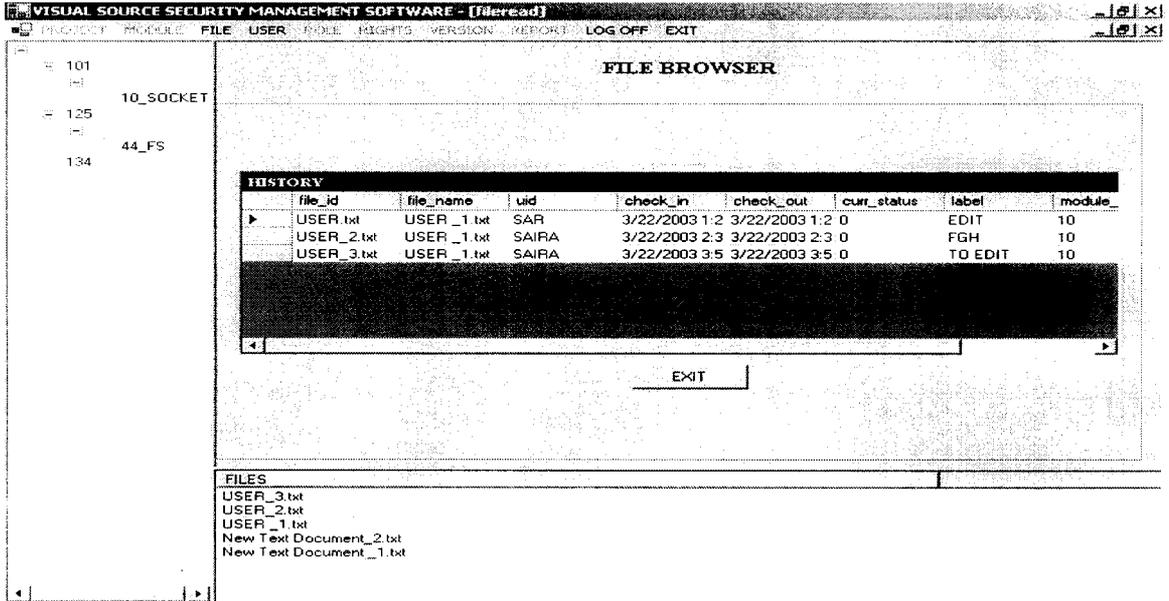
The various versions of the particular file are listed after the check in is completed. While performing check in by one user, another user cannot check in that file since it is locked. Check in is the process of copying one particular file in his area to the working folder.



Check out is the process of making necessary changes in a particular file and thus by creating a new version and copying to the working folder. After this process, a message named "check out completed" will be displayed.

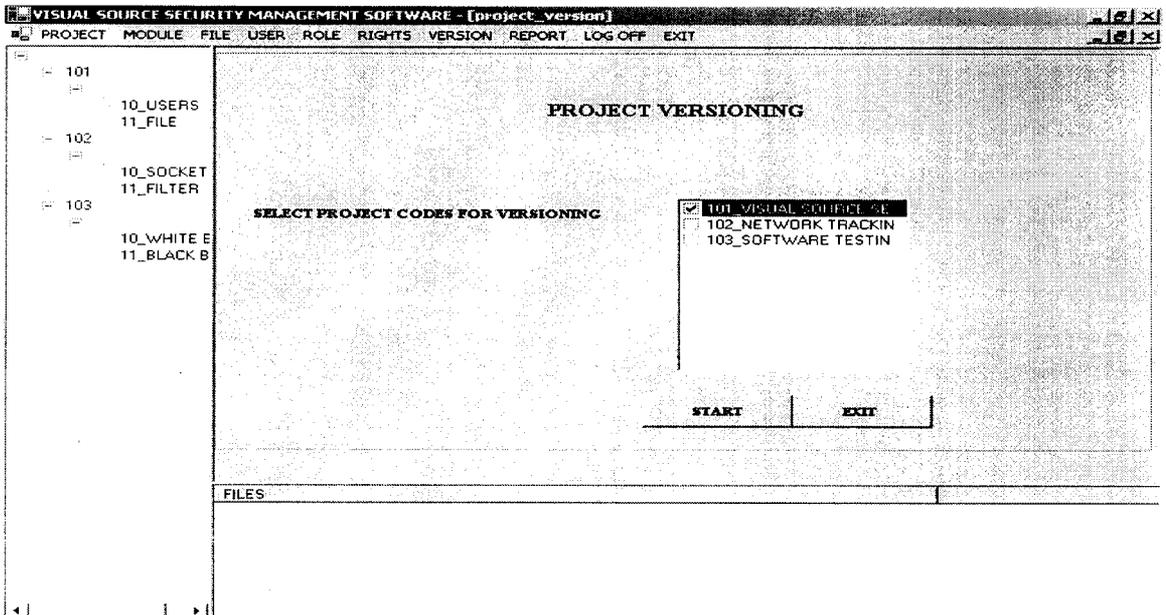


The History option is used to view the details of all the files with their file-id, file name, the check-in time of a particular user and his check out time, his label, the id of the module and its corresponding project code

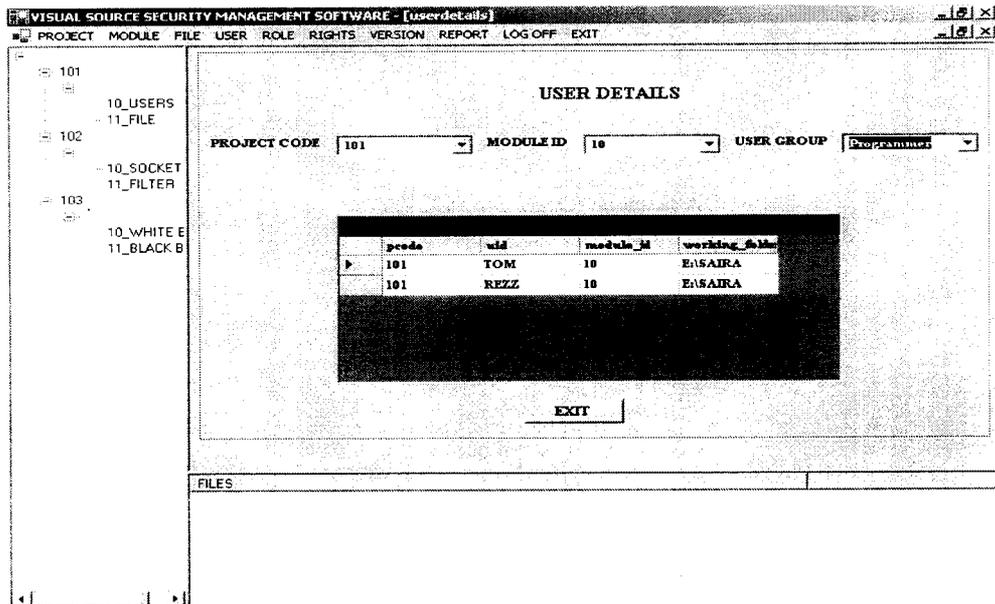


➤ PROJECT VERSIONING

The different versions of a particular project with its project code, version no and location will be displayed.

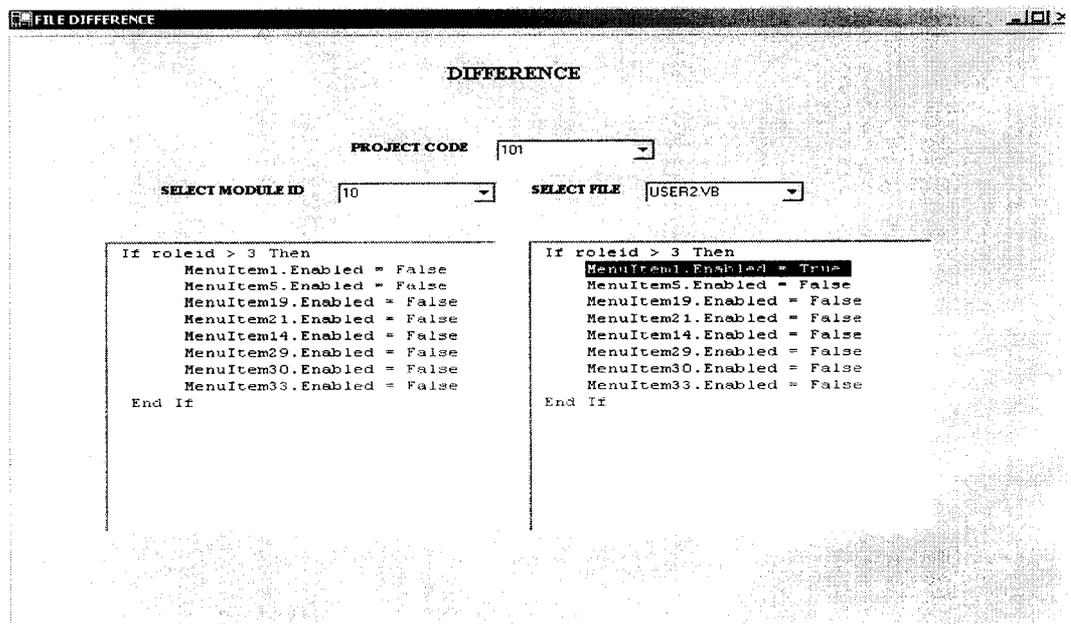


The user details of a particular file of a corresponding module in a particular project will be displayed with its project code, module id, user id and its working folder.



➤ DIFFERENCE

The difference between the versions of a particular file are listed with the help of difference option.



4.4 Output Design

USER REPORT

SELECT PROJECT LEADER: LEE

3/22/2003 MainReport

- F:\PRJ101
 - 101
 - LEE
 - VISUAL SOURCE SECURITY
- F:\PRJ102

PROJECT REPORT

PROJECT CODE	PROJECT NAME	PROJECT LEADER	CREATION DATE	LOCATION
101	VISUAL SOURCE SECURITY	LEE	3/22/2003 2:23:0	F:\PRJ101\VISU... SOURCE SECU...

Current Page No: 1 Total Page No: 1 Zoom Factor: 100%

Form1

PROJECT REPORT

SELECT PROJECT CODE: p101

MarReport

3/22/2003

PROJECT REPORT

PROJECT MANAGER PROJECT LEADER

<u>pcode</u>	<u>module_name</u>	<u>phname</u>	<u>uid</u>	<u>role</u>
p101				
p101	nestm1	nest	US1PR101	PROGRAMMER
p101	nestm2	nest	US1PR102	PROGRAMMER
p101				

System Implementation & Testing

5. System Implementation & Testing

5.1. System Implementation

Implementation includes all those activities that take place to convert from the old system to the new. The new system may be totally new, replacing an existing system. Proper implementation is essential to provide a reliable system to meet the organizational requirements. Successful implementation may not guarantee improvement in the organization using the new system, as well as, improper installation will prevent any improvement.

The implementation phase involves the following tasks:

- Careful Planning
- Investigation of systems and constraints
- Design of methods to achieve the changeover phase.
- Training of staff in the Changeover phase.
- Evaluation of Changeover.

The method of implementation and time scale to be adapted was found out initially. Next the system is tested properly and at the same time the users were trained in the new procedure.

The implementation process begins with preparing plans and activities for the implementation of the system. Discussions are made for preparations of activities. New equipments are acquired for implementing the new system. Design and coding is done according to the requirement of the user and is tested and debugged.

The successful of the implantation of the new system depends on the involvement of the staff working in the department. In the case of visual source security management software , the department staff are given with the detailed information about the project's working. The procedure for adding the module and the file is taught.

Change over is the stage of moving from existing system to the proposed system. The new visual source security management software helps the organization to add the projects in an efficient manner.

5.2 System Testing

System testing is an expensive but critical process for the software development. A test case is a set of data that the system will process as normal input. However, the data are created with the express intent of determining whether the system will process them correctly

Some of the test data includes was

- Invalid Date
- Invalid Time

In all these cases the system is found to be reliable. The following are the test performed on the system.

Password Testing

Administrator as well as the user has to specify username and password for entering into system, it will be validated with the values in the database. If they do not match, access is denied to login to the system, thereby providing a strong security.

Unit Testing

In unit testing the attention is diverted to individual modules, independently to one another to locate errors. This testing was carried out during programming stage itself. In the testing step, each module is found to be working satisfactorily as regards to the expected output from the module.

Code Testing

Here the general logic of the program is tested. Test cases were developed that result in executing every instruction in the program module, here every path through the program is tested.

System Testing.

Here the integration of all modules with in the system is tested thoroughly. This verifies whether all the specifications are appropriate. All the modules are working accurately when the buttons are invoked through the GUI windows.

Specification Testing.

The specification stating what the program should do, and how it should perform under various conditions were determined. Then the test cases were developed for each condition and combination of conditions were processed and found satisfactorily.

Output Testing:

The outputs generated or displayed by the system under consideration are tested by asking the users about the same required by them, Here, the output format on the screen is found to be correct as the format was designed in the system design phase according to the user needs.. Hence, output testing has not resulted in any correction in the system.

In all these aspects, the system was found to be reliable.

Conclusion & Scope For Future Development

6. Conclusion & Scope for future development

All the suggestions forwarded in the system proposal have been successfully completed and the final threshold of the application has been crossed. Viewing through the system development , a brief idea can be given as follows.

- Comprehending the system
- Studying the existing system
- Building up the course of action to reach the goal
- Designing the solution
- Preparing the output formats
- Testing the system
- Achieving the required results Documenting the system

Securing the source code is the most important goal of the tool. Using this tool we can retrieve all the versions of a file, since after each modification to a file, a new version of the file is added to the database.

Including Net Meeting, Chatting etc, can make future enhancements. This tool can be converted to work in wireless environment.

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