REVIEWING METRICS

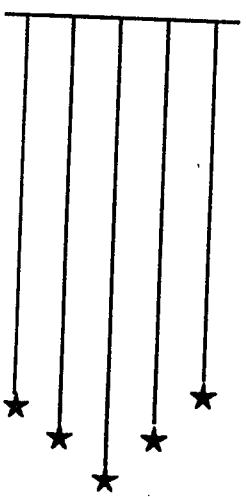
p-924

PROJECT REPORT

Submitted in partial fulfillment of

the requirements for award of degree

M.Sc (Applied Science) Software Engineering



SUBMITTED BY

DINESH KUMAR .R

Under the guidance of

External Guide

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Project Manager

MASCON GLOBAL LTD

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

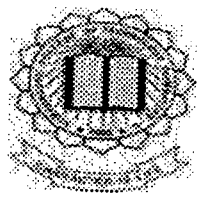
KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE - 641 006.

Department of Computer Science and Engineering

Kumaraguru College of Technology

Coimbatore - 641006.



CERTIFICATE

This is to certify that the project work entitled "**Reviewing Metrics**"

Has been submitted by

Mr. Dinesh Kumar.R

In partial fulfillment of the award of the degree of
Master of Science in Applied Science- Software Engineering of
Bharathiar University, Coimbatore
during the academic year 2002-2003.

28/03/03

Guide

31/3/03

Head of the Department

Certified that the candidate was examined by us in the Project Work Viva Voce Examination held on 5/4 and the University Register Number was 9837S0044.

Internal Examiner

External Examiner

CERTIFICATE

March 14, 2003

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Dinesh Kumar. R, student of Kumaraguru College Of Technology,Coimbatore has successfully completed the project on"**Reviewing Metrics**"in our concern,from Nov 5th ,2002 to April 5th 2003 under my guidance.

We wish him all success in future endeavors.

Prince Satya
Project Manager

Mascon Global Limited Padma Complex 320 Anna Salai Chennai 600 035 T/ 91-44-4313101 8 F/ 91-44-4349330 www.masconit.com

ACKNOWLEDGEMENT

Acknowledgement

I thank the almighty; he has been very generous and kind to me.

My parents have been my source of inspiration. They have sacrificed almost every thing to provide me with an excellent foundation. I will never be able to translate my gratitude in the form of words.

I take the opportunity to express my thanks to **Dr.K.K.Padmanabhan**, **Principal, Kumaraguru College of Technology**, **Coimbatore** for his kind co-operation in allowing me to do this project.

I shall always be grateful to ***Mascon Global Ltd (MGL),*** **Chennai** for providing me this golden opportunity to carry out the project.

I am very much indebted to ***Mr. T. Gopal,*** Vice President - Projects, MGL, Chennai my project guide for his constant support and encouragement without which this project would not have seen the daylight.

Kumaraguru College Of Technology was the best thing that could have happened to me. I am indebted to the institute.

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I owe my special thanks to my internal guide ***Mr.S.Mohanavel B.E. M.B.A,*** **Sr.Lecturer, CSE, Kumaraguru College of Technology**, for his constant support and encouragement at every stage of this project.

My sincere thanks to **Mr. Princesatya**, Systems Manager for he helped me in all ways for the successful completion of this project.

My Heartfelt thanks to ***Mrs.S.Devaki,*** **Asst Professor, CSE, Kumaraguru college of Technology** for his support.

I thank ***Ms.Jayashree,*** Senior Programmer, MGL, Chennai for the help she extended for completing this Project.

I thank Mr. Hari and Mr. Gireesh my Project mate for their support in documenting this project.

Last but not the least, I thank all my lecturers, friends and colleagues they made life much easier for me.

Dinesh Kumar R

SYNOPSIS

SYNOPSIS

This project entitled "**Reviewing Metrics**" was done at Mascon Global Ltd, Chennai.

The purpose of this system is to satisfy the needs of the company during its project development. The system helps Developer, Management and customer of software concern through various aspects.

The idea of this system is to provide an application that performs the complete requirements that are needed for the software concern during project development. This reduces the task of organization in maintaining the project and its details at the time of development. This system provides a highly secured and effective way of completing the project development.

For the **Developer**, the system provides the details regarding their development projects requirements such as its Scope, Objectives and approaches, risk strategy, plan for the project Test, Project Infrastructure, Development Environment and Project work plan.

For the **Management**, the system provides the details regarding the various ongoing projects in their concern and the complete detailed information about the projects with its current status can be viewed from the Management perspective.

For the **Customer**, the system provides the details regarding their current status of their project and they can send feedback to the respected person.

CONTENTS

Contents

About Mascon

1 Introduction

Mascon has been Providing IT services Worldwide.

1.1 About the Organization

This project is being carried out in **Mascon Global Ltd, Chennai**.As it is basically a consultancy, it handles project in various platforms, with the Motto being **" There When You Need IT "**. The company was started in 1981 with its Headquarters at Chicago. It has numerous offices across the Globe in Atlanta, Princeton Etc.In India, the software development centers are Located in Chennai, Bangalore and New Delhi.

1.2 MASCON – AN EXECUTIVE SUMMARY

Mascon believes that a true partnership is built by providing a Quality Technology Solution at an Affordable Price. They have proven processes and methodologies, with an excellent bank of skilled Professionals.

Mascon has a well-equipped SDC (Software Development Center) at Chennai, which also houses the corporate office. In addition, they have offices and support centers at Bangalore and New Delhi in India.

1.3 Vision

Mascon plans to be the most admired Global Provider of Software Solutions committed to make our customers win. Vision is to be recognized throughout the world for our excellence and accomplishments within these core areas

We pride ourselves in providing full and superior value-added services in our tireless pursuit of client satisfaction.

1.4 Mission

Mission is to help clients achieve business excellence through the strategic use of Information Technology. Mascon business is to solve client s problems through the integrated application of consulting and information technology services, and related products.

1.5 Commitments

- Achieving strong and profitable business growth.
- Be the undisputed leader in our domain.
- Create Centers of Excellence Globally in cur domain.
- Create Products & IP to make us the preferred strategic partners for customers.
- Exceed revenues of $200 million in 5 years.
- Share the rewards of growth with employees.
- Support education amongst the less fortunate members of the society.

1.6 Business Area

- E Business Solutions and Services.
- Full life cycle custom application development.
- IT products (Enterprise Application).
- Communication Technologies.
- Enterprise Application Integration.
- Offshore Software Development.
- Management Consulting.

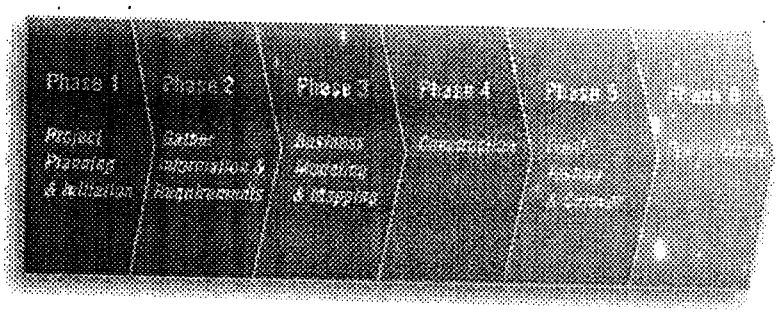
PROJECT PLAN

2 Project Plan

2.1 Project Approach

The Project is been classified into six phases. Namely,

- **Project Planning & Initiation**
- **Gather Information & Requirements**
- **Business Modeling & Mapping**
- **Construction**
- **Final Testing**
- **Optimization.**



2.2 Team Structure

Our Team structure consists of the following persons who are exclusively involved in this project.

1. **Project Manager - 1**

2. **Senior Systems manager-2**

3. **Programmers - 7**

This team is molded to get a good outcome for this package. I'm proud to say that I'm one among the programmers who shape this project.

2.3 Major Activities:

Project Planning & Initiation	Gather Information & Requirements	Business Modeling & Mapping	Construction	Final Testing & Cutover	Optimization
Phase 1	**Phase 2**	**Phase 3**	**Phase 4**	**Phase 5**	**Phase 6**
Analysis about the project	Assess current business	Install Environments	Prepare the development and test environments	Perform company- wide transition	Perform implementation review
Project Mgmt. & Planning	Define business requirements	Train project team	Test environment, tools, and test data	Install Production Environment	Perform production system review
Define scope, objectives, & approach	Provide Overview training	Map business solution	Code and unit test customizations	Prepare for application cut over	Perform performance review
Develop Quality Plan	Assess fit	Design Architecture	Code and unit test interfaces	Complete data conversion	Refine system
Develop Risk Strategy	Propose Architecture	Design customizations	Code and unit test conversions	Verify historical transactions in Production environment	Begin archive procedure
Develop plan for education & training project team		Design conversions	Configure the production environment	Perform Cutover	Begin purge procedure
Create Project Infrastructure		Design Interfaces	Prepare and execute the Business system test	Complete comprehensive checklist of production - specific tasks is confirmed	Modify security
Plan Project test and development environment		Develop test scenarios and business processes	Create customization, interface, and conversion documentation	Enter real information and conduct general business transactions	Assess and Propose Future Direction
Develop Project Work plan		Define business policies, procedures, and infrastructure	Create systems operations manual	Technical staff begins support to the end users and maintain production system	
			Create user reference manuals		

3 Processing Environment

3.1 Proposed Hardware and Software configuration

The software will only be used on the following system environment

Hard ware	5 user	10 user	Unlimited * Users
Server With fast hide ultra SCSI Integrated 10/100 Ethernet card, 2 serial 1 parallel 101 key board, 3 button serial mouse, VGA Color monitor	IBM	IBM	IBM
Processor	1 X PIII 700 Mhz	1XPIII 700Mhz	2XPIII XEON 700Mhz
Memory	256 MB	512 MB	1 GB
Disc size & No	1X9GB	2X9GB	2X9GB
Back up drive (DAT)	12/24 GB	12/24 GB	12/24 GB
Client PC Processor- PIII 800 Mhz Memory- 128 MB Disc drive- 10 GB Monitor-14"VGA Color Drive-1.44" Floppy drive Windows 98 OEM pack	(5 nos)	(10 nos)	(20 nos)
UPS & Networking			
Back pro UPS - APC make	2 KVA	3 KVA	3 KVA
Supply & laying of network cable up to	100 Mts.	200 Mts.	300 Mts.
Switch	8 port	12 port	24 port
Software			
Windows NT, JAVA, JSP Scripting Lang: JavaScript Database:Ms-Access 2000	5 Concurrent user 8 Named user	5 Concurrent user 8 Named user	10 Concurrent user 8 Named user

*The size of memory and hard disk will depend on the number of users.

NOTE: The specifications given are minimum. Due to technology change, better products will become available even at lower prices.

SOFTWARE REQUIREMENT SPECIFICATION

4 Project Overview

4.1 The Goals Of This Project

The Primary goal of this project is to achieve a workable piece of system that could satisfy the needs of the company during its project development process.

Scope

The system helps Developer, Customer and Management of Software concern through various aspects.

4.2 Project Overview

The Purpose of this project is to provide the needs that are required during the software development process. This system could satisfy the needs of Developer, customer and Management of software concern. Each user could be provided with login area.

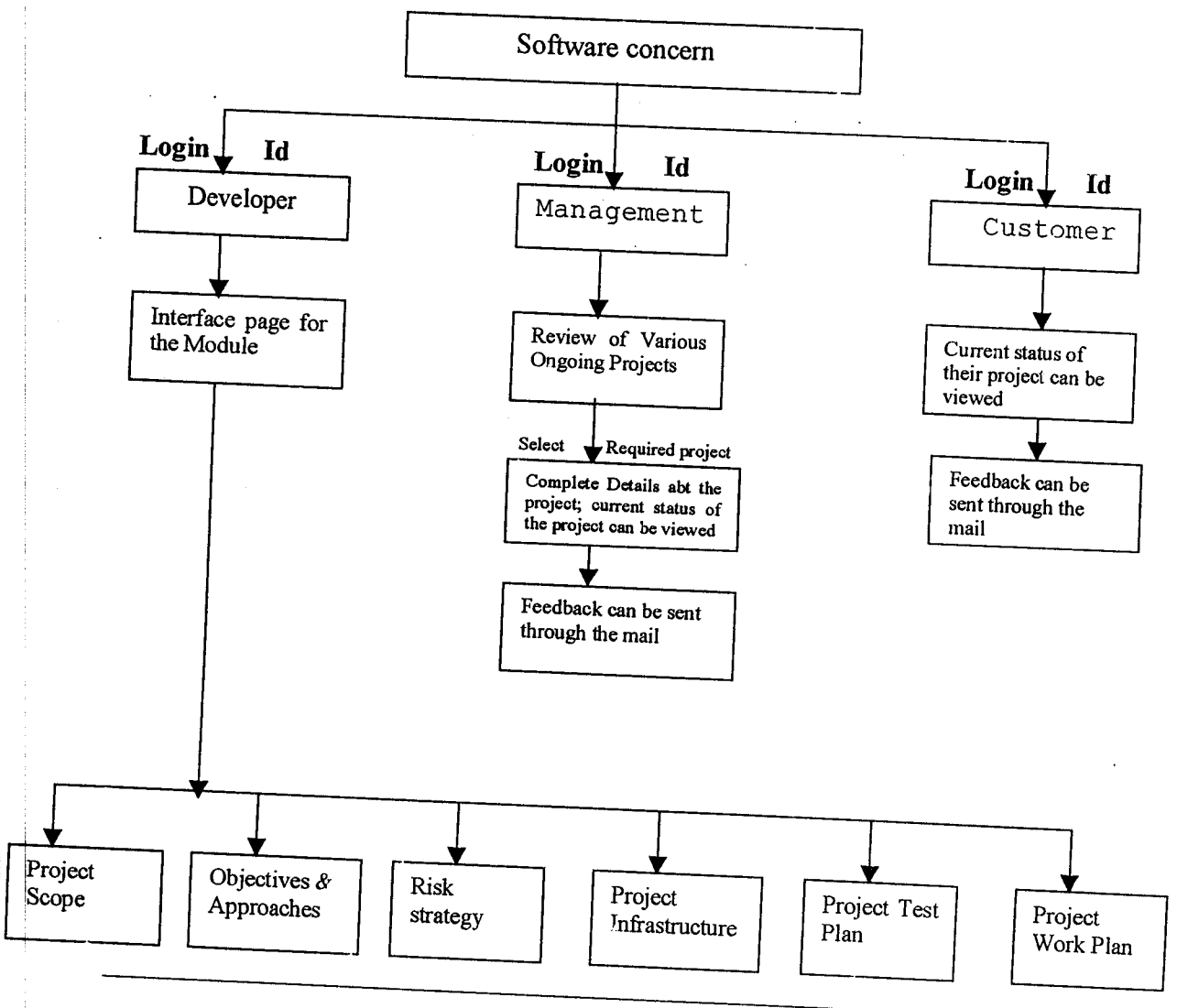
For **Developer**, the system provides details about their developing projects details such as its Design (I/P Design, O/P Design, Database Design, process Design), Project Plan (Project Scope, Objectives & Approach, Risk strategy, Development Environment Plan for project test and project work plan.), Timesheet (Daily schedule, weekly schedule). In Timesheet, the reports will be designed such that the activities and development that are involved in the project on daily or weekly basis and their status of the development project could be submitted to the project manager.

Depending on the status submitted by the programmer, the project manager could schedule their work. The project manager could generate a report on the work completion and then report could be submitted to the management.

For **Management**, the system provides details to review the various ongoing projects of their concern and their status of the projects development and the management can send remarks about the project to the respective project head.

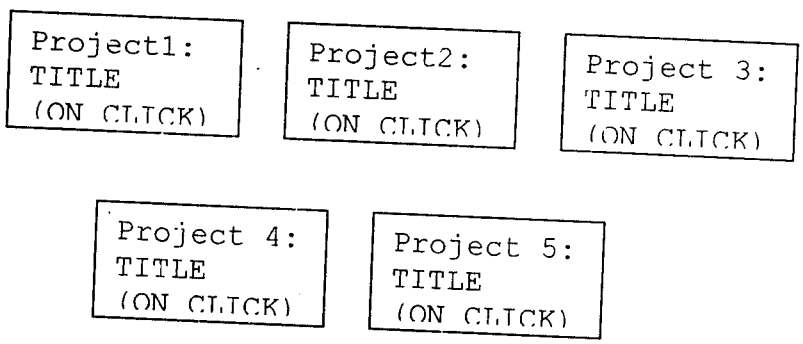
For **Customer**, the current status of their project can be determined and they can send their feedback to their respective organization. It employs advanced software features offering flexible and user friendly environment.

4.3 Product Functions:



For Example:

Consider there is 5 different projects are been carried out then they could be represented as



By selecting the required project, the management can view the details as mentioned above.

Advantage

By providing these details the management can know the Project activities that are been carried out and mutual interaction takes place among the developers.

Customer

For the Customer, the system provides the details regarding their current status of their project and even the customer can send the feedback regarding the development through mail.

5.2 Time scheduling:

Time scheduling is designed to give companies a better management tool to collect and approve timesheets through Web interfaces. Company employees, no matter where they are - traveling, at client sites, or at local offices - can enter and keep track of their hours on a daily basis or weekly basis. They can save and update their timesheets at regular Intervals.

Time scheduling offers the system administrator, the ability to easily access and to track employee time and information of how he or she spent the hours across different projects or tasks assigned.

The administrator can Automate email remainders to those employees who have not submitted timesheets.

Time Scheduling reduces the labour effect managing timesheet and provides accurate and fast data reporting.

5.3 System Design and Development:

This module provides the required project system design and development such as maintaining,

- Input Design
- Output Design
- Database Design
- Logical Design

By providing these details the developer can make ease use of the system design according to his developing project requirements.

6.4 Flexibility

Flexibility has been provided for the future scope to expand the system and for easy upgrade of the system for a later version of tools and the operating system used. The installation process is allowed to take certain decisions about the installation of the system without a compromise of the security.

6.5 Security Features:

The system security is facilitated with an in-built power of Ms-Access for the backend objects. The security at the front-end is also been provided.

Access permission can be controlled at different levels, through the security features of the package, thereby enabling the organization to have the most effective operational control. Permission can be given at a module level, screen level or at an option level within a screen.

6.6 Back Up

The data is given due importance in the system. Accidental deletion of data may create problems. Keeping this factor in mind, a strong back up and restore facility has been provided in the system for the safety of data.

Java Script

- JavaScript maintains platform independence since its scripts are interpreted at the browser level.
- JavaScript runs on both client side and server side.
- JavaScript facilitates the developer with properties related to document windows, frames, forms, loaded documents and links.
- This is an interpreter-based language and source code files are directly executed at runtime.
- JavaScript code is not compiled but it is only interpreted.

Java

- Java is fully object-oriented language with strong support for proper engineering technique.
- Java program consists of pieces called classes. Classes consists pieces called methods that performs tasks and return information when they complete their task.
- The class libraries are also called as java API's (application programming interface).
- Java systems consist of several parts: the environment, the language, API and various class libraries.

- Java programs come in two main types:

  Application

  Applets.

Applets are java programs one can download and run in web browser. Besides downloadable applets java also supports application designed to be run on local machines.

Ms-Access

- It's a relational database management system (RDBMS), which stores and retrieves information in a database.
- It supports Multi-user environment and it's user-Friendly software
- An Access database consists of the tables that hold the data and all related objects such as queries, forms and Reports that are used to manage the data.

SYSTEM DESIGN

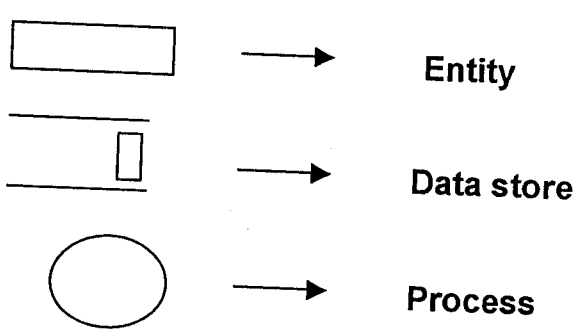
7 System Design

7.1 Introduction

Design is the first step in the development phase of any engineering product. It is the process of applying various techniques and principles for the purpose of defining a system in sufficient detail to permit its physical realization. Design forms the basis for implementation and testing, without which the risk of building an unstable system is quite high.

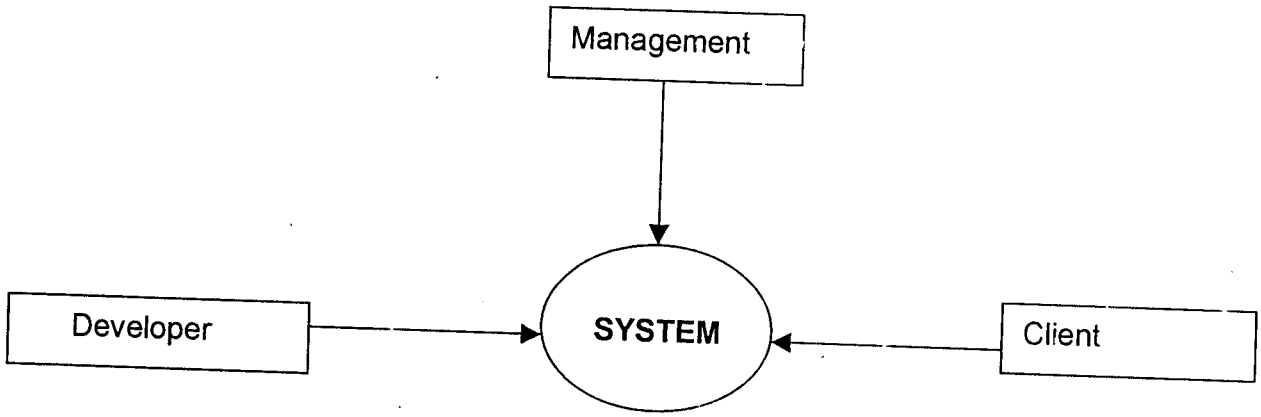
7.2 DATA FLOW DIAGRAM

A Data flow diagram is a graphical technique that depicts information flow and the transforms that applied as data move from input to output. The data flow diagram may be used to represent a system or software at any level of abstraction. In fact, DFD may be portioned into levels.

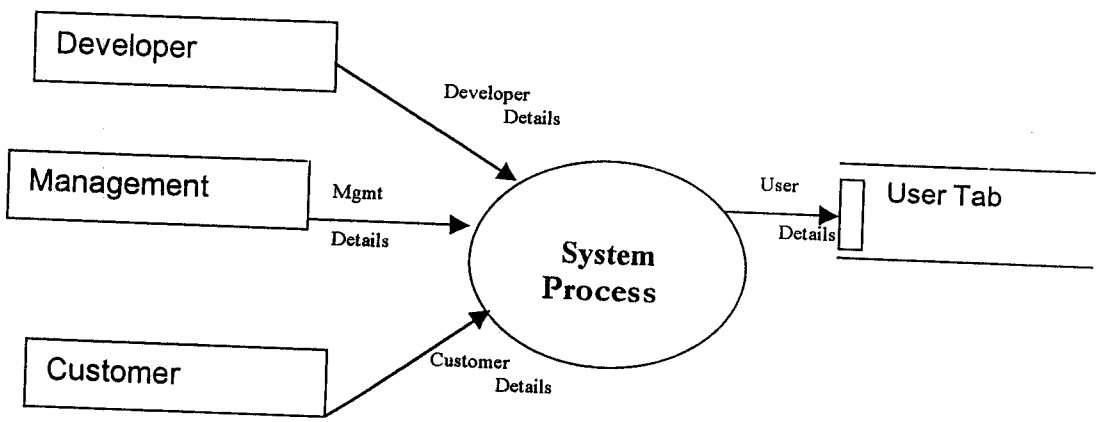


7.3 Data Flow Diagram: Level 0

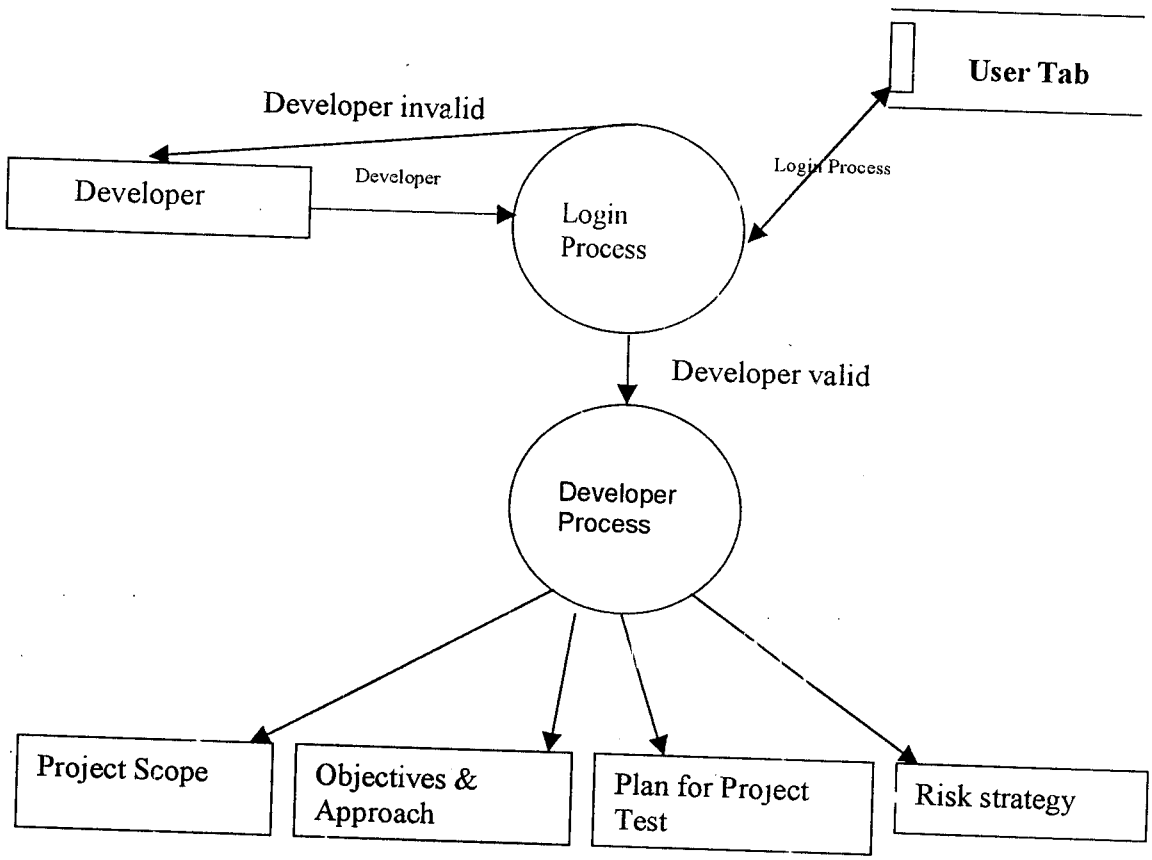
System Flow Diagram



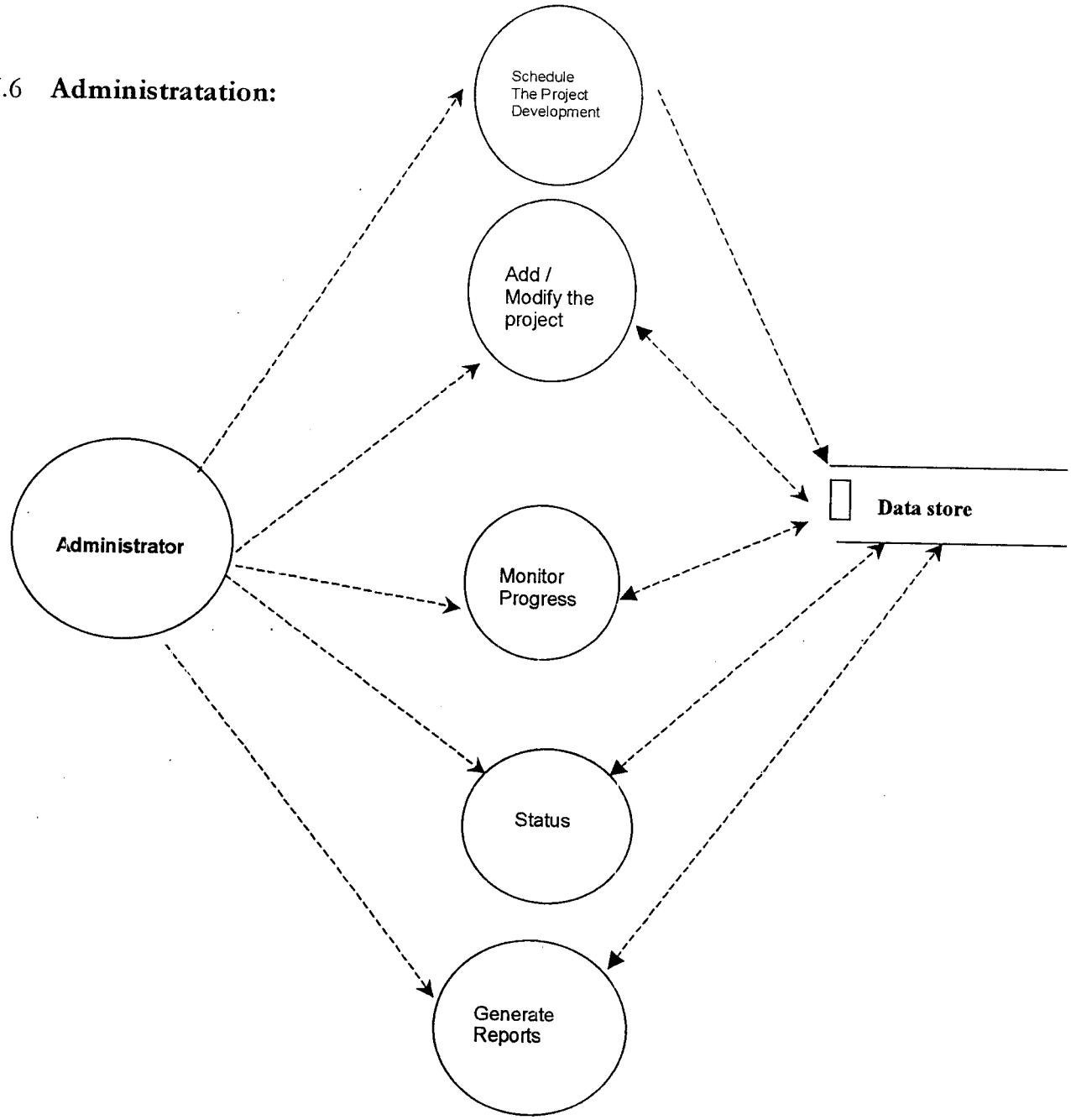
7.4 User's Data Flow:



7.5 Developer:

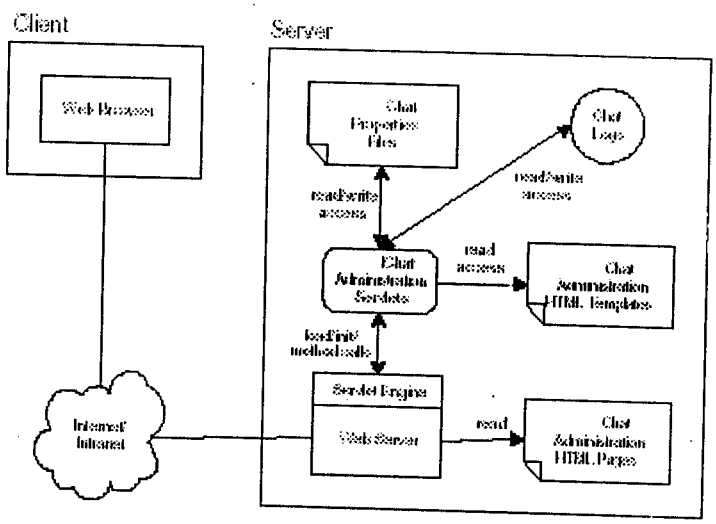


7.6 Administratation:



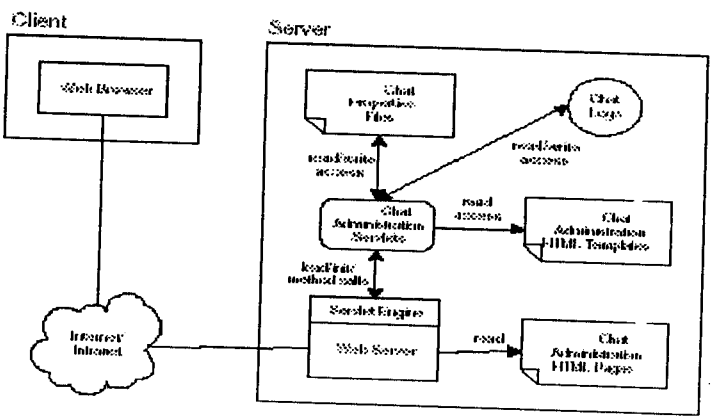
7.7 Discussion Room (Designs)

Administration System Architecture



7.8 Chat - (System Structure)

CHAT - System Architecture



SCREEN SHOTS

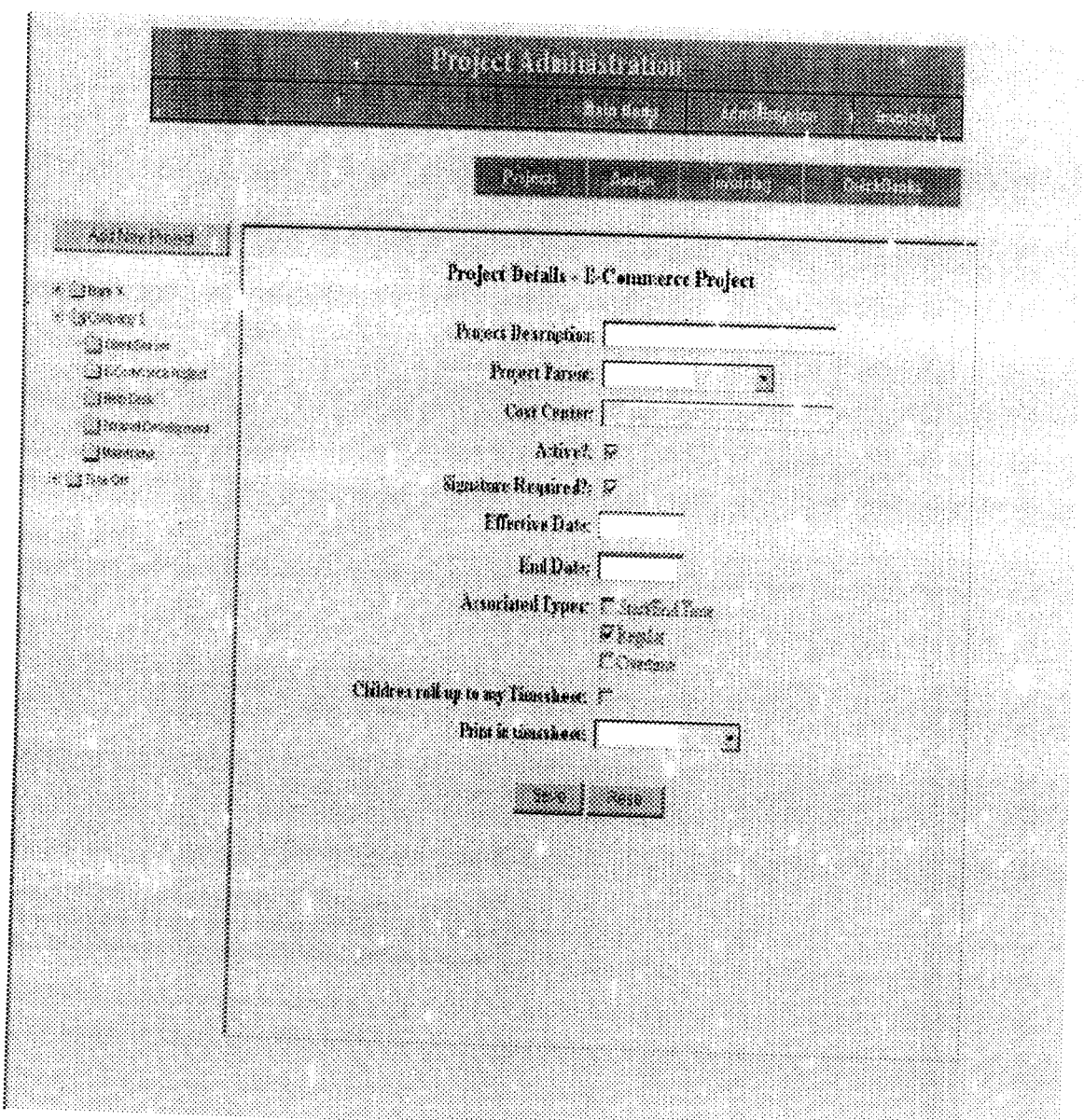
8 SCREEN SHOTS

8.1 Project Maintenance

Purpose:

This Screen is used to maintain Projects and its descriptions/details screen. The administrator can add and/or modify the project.

Screen Layout:

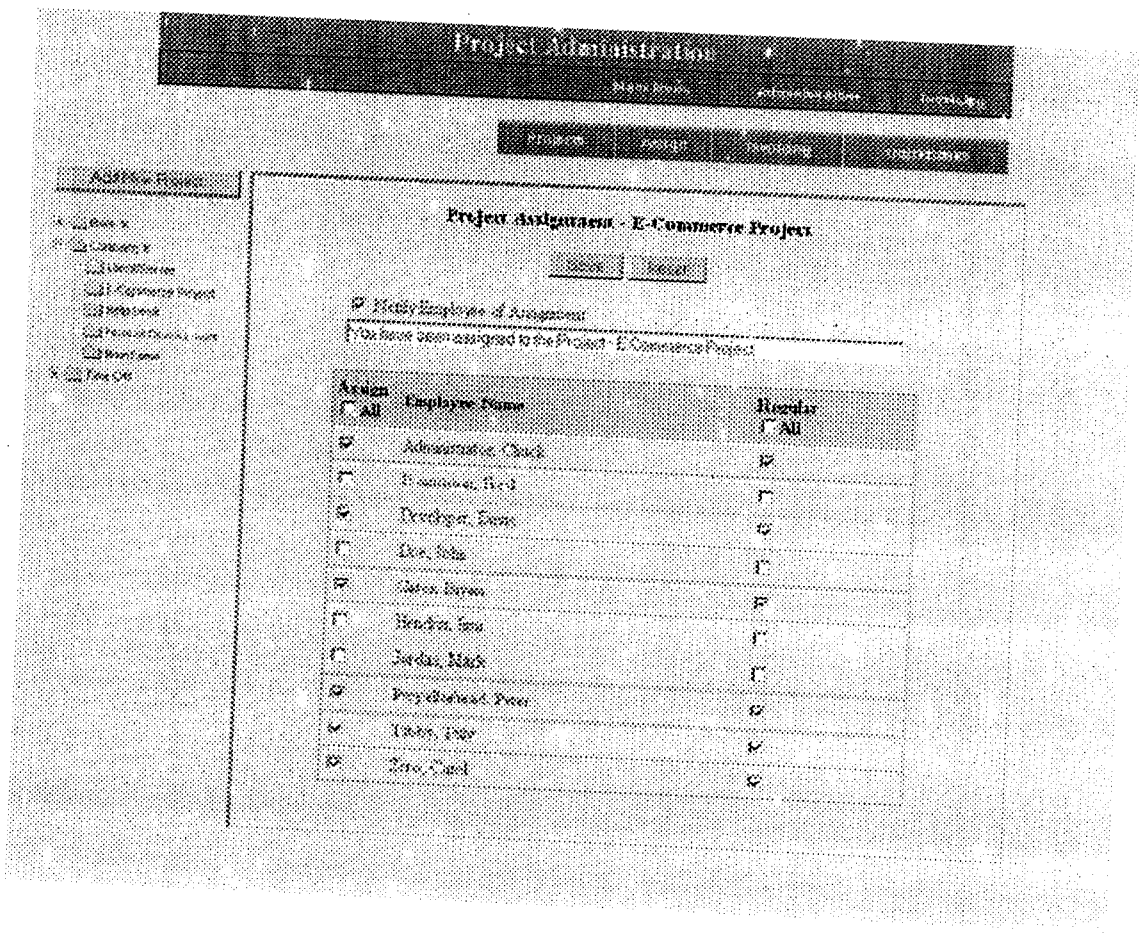


8.2 Project Assignment

Purpose:

This Screen is used to assign/unassign projects or tasks to employees. An employee can be notified (email) regarding assignment status changes.

Screen Layout:

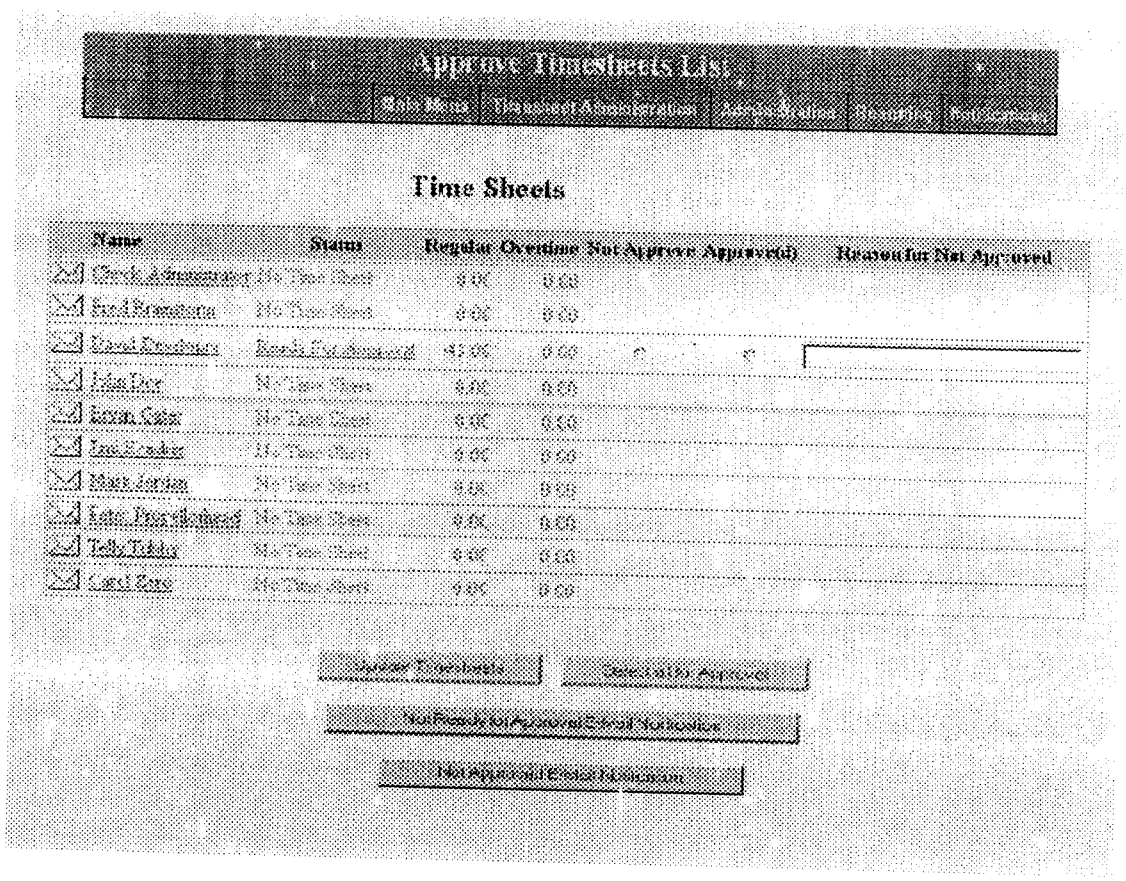


8.4 Time-Sheet (Weekly schedule)

Purpose:

Project Manager can view and approve their users timesheets after it has been submitted. If the timesheet needs to be returned, you can disapprove the timesheet with an email return notice to that employee

Screen Layout:



8.7 Implementation:

Server Module

Server module is one, which manages all routing operations.

- It will extract the user name and IP address which sent to is as a lengthy string from the client
- It will also route the messages sent from one client to other client using the IP addresses extracted.
- It will sent the messages in a format 'Format: "Message" ' to the client, so that client only needs to check whether it's a message and just display it
- It will also manage messages sent to all, by sending messages to all the users in the list.

Client Module

To start with this module has login window design and then the chat window.

Login Window

This has the following features,

- A single line text field, which will get the user name.
- A Button, which will lead you to, the next screen and save the user name.
- If the user tries to login without a name in this text field, a new label box with a message 'I think you have a name 'will show up.
- This made possible by the Action Listener Interface.
- The action event will be checked for the name on the button and if a match is found, current window is disposed off and a new frame is brought up. This will be the chat window

Client Window

It has the following features,

- A single line text field for typing the message to be sent.
- A list box, which will show the users who have logged in.
- A button, which will send the message to the user in selection.
- This List box will have a user – **To All** -, this can be selected for sending message to all the users.
- This chat window also has another list box to list the messages received and messages sent by one using it.
- The user will not be allowed to click on the items in the list because, this list box is not enabled.

In addition to this client will also have modules,

- To send the user names and IP address to the server so that it can track the users and their address to making routing easy.
- It will also have modules to sent messages to the server in a format in which it can differentiate it from user names.
- It also has module to receive the user names from the server and messages routed through server.
- It will also be able to differentiate the user names from the messages.

TESTING

9 Testing

Testing is a dynamic technique to achieve the objectives of the system. It is a very important phase in system development as it plays a very critical role in determining the reliability and efficiency of the software. Tests are conducted to evaluate the performance under different conditions.

There are four test stages for our project test plan. The first and second stages are to test the individual components (i.e.) modules. The third and fourth stages are mainly to test the overall package.

Generally, the system on whole were tested for the following,

- Validation of Inputs
- Referential Integrity Test
- Sequential Tests
- Consistency of the application

9.1 First Stage: Unit Testing

We have started the unit testing since the third phase. The programmer who has developed it generally tests a program unit. Then, they are integrated into larger part of the system.. We use Test form to represent the test result

In the testing phase the emphasis was on **Unit Testing, Integration Testing** and **Acceptance Testing.**

The different sub processes were tested individually at both main office and branch office. Once the performance was found to be satisfactory, the sub processes were integrated together and integration testing was carried out.

After clearing the unit testing and integration testing phases with test data, the system was deployed in real time environment to be tested further. During this acceptance-testing phase, which focuses on the external behavior, tests were carried out with live data provided by the real time users.

After close monitoring and evaluation, the system was found to be working satisfactorily.

PROJECT SCHEDULE

IMPLEMENTATION

12 IMPLEMENTATION SERVICE

Implementation services for the Software, has been included.

The customer will nominate one person as a single point contact for the entire project. The Project Leader / Project Manager of MASCON will have periodic review of the progress of the project with the person nominated by the customer and will advise of any requirement.

- The successful implementation requires the cooperation of the users. MASCON requests the customer to arrange a formal "Project Kick off" meeting of the users, comprising of functional heads. MASCON will present 'User Requirement Specification' (URS) document with project plan after the detailed study. The customer will return the URS with approval. During preparation phase MASCON will start the customization and the customer will prepare the data. The tentative implementation as the first implementation plan may be modified with mutual agreement between MASCON and Customer

- MASCON will furnish list of requirements, if any, in advance before the beginning of each phase of the project. The customer will confirm readiness and make the required items available to the Project Leader.

CONCLUSION
&
FUTURE ENHANCEMENT

13 Conclusion

The system has been developed and the stated objectives were achieved. The design and development of such a real time project has been really a wonderful experience for me. I discovered new and interesting facts, increased my degree of skills of programming and got well exposed to the really powerful scripting environment.

The system gave the results as it was proposed in the Earlier stages and it was designed in such a way that it could be enhanced in future with no problem. Hope this project will surely cater the requirement of all developers, Management and customers.

14 Scope for future enhancements

The system will be an on-going activity, which will be developed and enhanced based on the necessity.

Upcoming things to the system are: -

- A **Video-Interface** will be added which could help the video cam enabling facilities to give seminars or live interaction from different parts of the world.
- The system is developed in a way, which can always be updated based on the techniques and tools available.

GLOSSARY

REFERNCE