P-1013

KUMARAGURU COLLEGE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Coimbatore – 641006

April 2003.

HUMAN RESOURCE MANAGEMENT SYSTEM

PROJECT WORK DONE AT

E-BRAHMA TECHNOLOGIES PRIVATE LIMITED

COIMBATORE

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

MR. A.RAJA
REG. NO.: 0038M1054

GUIDED BY

Internal Guide
Mrs. D. Chandrakala, M.E., Senior Lecturer,
Department of Computer Science and Engineering

External Guide
Miss. R.Vidhya, M.Sc.,
E-Brahma Technologies Private Limited.

Certificate

KUMARAGURU COLLEGE OF TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Coimbatore – 641006

April 2003.

CERTIFICATE

This is to certify that the project work entitled

" HUMAN RESOURCE MANAGEMENT SYSTEM"

Done By

A.Raja
Reg. No. : 0038M1054

Submitted in partial fulfillment of the requirements for the award of the degree of Master of Computer Applications of Bharathiar University.

S. Thangaraj
Professor and HOD

D. Chandra 8/4/03
Internal Guide

Submitted to University Examination held on 16 OCT 2003

D. Chandra 16/4/03
Internal Examiner

External Examiner

e-Brahma - A Center for IT Excellence Private Limited
PSG STEP Software Park II
Peelamedu
Coimbatore 641 004 India
Tel +91 (422) 2593438, 2593430
Telefax +91 (422) 2592403
e-mail itexsf@e-brahma.com

Ref : EBITEX/CBE/PCC/2003/0070

26 March 2003

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.A.Raja,Registration Number : 0038M1054 pursuing Master of Computer Applications at Kumaraguru College of Technology,Coimbatore has successfully completed his project entitled "**Human Resource Management System**" in the area of Active Server Pages in our Organization. The duration of the project was from December 2002 to March 2003.

During this period, we found him to be sincere and hard working.

With Regards

Lawanya Ramkumar

(Academic Head)

Declaration

DECLARATION

I here by declare that the project entitled **"HUMAN RESOURCE MANAGEMENT SYSTEM"**, 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 Miss.Vidhya, Chief Operations Officer, **e-Brahma Technologies (P) Ltd., Coimbatore and** Mrs. D. Chandrakala M.E., Senior Lecturer, Department of Computer Science & Engineering, Kumaraguru College of Technology and this project work has not found the basis for the award of any Degree /Diploma/Associate ship Fellowship or similar title to any candidate of any University.

Name of Candidate	Register Number	Signature
A.RAJA	**0038M1054**	A. Raja

Place: Coimbatore

Date: 08.04.2003

Acknowledgement

ACKNOWLEDGMENT

To add meaning to the perception, it is my indebtedness to honor a few who had helped me in this endeavor, by placing them on record.

With profound gratitude, I am extremely thankful to Dr.K.K.Padmanaban B.Sc. (Eng.), M.Tech, Ph.D., Principal, Kumaraguru College of Technology, Coimbatore for providing me an opportunity to undergo the M.C.A (Master of Computer Application) course and there by this project work also.

I extend my heartfelt thanks to my CSE department head Prof.Dr.S.Thangasamy B.E (Hons), Ph.D., for his kind advice and encouragement to complete this project successfully.

It's my privilege to express my deep sense of gratitude and profound thanks to Mr. V.Paramasivam and Mr. G. Ramasubramanyan, Managing Directors of e-Brahma Technologies (P) Ltd., for having allowed me to do my project work in his esteemed team and for helping me in all means in successful completion of this project work.

Gratitude will find least meaning without thanking my guide Mrs. D. Chandrakala M.E and course coordinator Mr.A.Muthukumar M.Sc.,MCA.,M.Phil., for the valuable guidance and support throughout my project.

Words are boundless for me to express my deep sense of gratitude and profound thanks to Miss.Vidhya, (Project Guide) and all my associates at e-Brahma Technologies (P) Ltd., for all their kind guidance and encouragement towards my project work.

My gratitude is due to all staff members of CSE department, my parents and all my friends for their moral support and encouragement for successful completion pf my project

Synopsis

SYNOPSIS

Information is the backbone of any organization. Therefore, it has to be made available at all times to ensure proper decision-making and towards this end, information has to be accurate, current, timely, relevant and unusable.

The project presented here is **"HUMAN RESOURCE MANAGEMENT SYSTEM"**. This has been under taken for **e-Brahma Technologies (P) Ltd., Coimbatore**. This project was developed in Active Server Pages as Front-End and Oracle 8.0 as Back-End.

The purpose of the project is to automate the human resource management activities. The activities that are covered are Performance Appraisal, Staff Management. (Allocation and Release), Resume scanning and Time Sheet. Performance Appraisal is to rate the performance of each and every person who is a part of the company.

The Staff Management is to allocate and release the staff working for the project. In this staff management the staff required for the project are allocated or released according to the information and the requirements given by the project personnel.

Time sheet records the activities of every staff and reported to the higher authority every week.

Resume scanning is to scan the resume, the company has received and searching for qualities of the applicant that meets the requirements of the company (i.e.) the technical skills and the experience.

Contents

CONTENTS

Introduction

1. INTRODUCTION

1.1 PROJECT OVERVIEW

The project titled **"Human Resource Management System"** has been developed for e-Brahma Technologies Private Ltd., Coimbatore. Performance Appraisal is to rate the performance of each and every person who is a part of the company.

It is the work of HRM to allocate the staff needed for the project and to release the staff when the project is completed. Resume scanning is collecting the resumes and select the resumes on the basis of what the company needs. Time sheet records all the activities of the employees in the organization and reports the data, which was approved by the higher authority.

The data is sorted centrally on the server, which make its specifically suitable for distributed teams who can use just the web browser to access it. No local s/w needs to be installed on the client for all web browsers are supported.

The application virtually installed on any web server whether internal with in the organization or external hosted by a web browsing company.

MODULES

- **ADMINISTRATOR MODULE**
- **PERFORMANCE APPRAISAL**
- **TIMESHEET**
- **RESUME SCANNING**

ADMIN MODULE:

This module is to maintain all the details of staff, project, activity, resume, rating measures. This maintains every possible domain of the entities involved in the project. The new entity can be added, deleted, updated, modified. This is the data source for all other transactions. Administrator can view all the details of the staffs, timesheet and project.

Staff Management

The Staff Management is to allocate and release the staff working for the project. In this staff management the staffs required for the project are allocated or released according to the information and the requirements given by the project personnel

Staff Allocation

Staff allocation is to allocate the staff required for the project. The project manager gives the staff requirements for the project. The HR manager verifies the staff master and allocates the staff for the project. Staffs are allocated on the basis of one person-one project.

Staff Release

The staff can be released either when the project is over or by a request for release. The responsibilities may be handed over to other persons and taken over by other persons. The HR Manager should approve it.

PERFORMANCE APPRAISAL

- In the case of periodic appraisal software engineer operations grade, development managers / project managers and for non-technical staff.
- Performance appraisal form is filled by self and by minimum of one superior as mentioned below.
- For operation level staff, the appraisal is done by development managers or software engineers
- For project managers / development managers the appraisal is done by directors
- For non-technical staff the department heads shall do the appraisal.
- Self-appraisal shall be done for periodic appraisals by the staff.
- Technical staff includes all software engineers, development managers and project managers.
- Summary of annual appraisal is calculated at the end of fourth periodic appraisal and second half yearly appraisal for Technical and non-Technical staff respectively.
- Performance Appraisal is to rate the staff on their performance basis and through scoring.

The four categories that are available for performance appraisal are:

- New recruits.

- Software engineers.
- Project managers/department heads.
- Non-technical staffs.

Appraisal for new recruits

- This is done on the third week of every month on completion of minimum of two weeks of service at e-Brahma.
- This monthly appraisal will help the new recruit to orient himself / herself to the professional culture of e-Brahma.
- The monthly feedback will provide opportunity for all new recruits to understand their strengths, limitations and areas of concern.
- No self-appraisal is done.

Periodic appraisal – Technical:

- Before the first periodic review the staff should have undergone minimum of two monthly appraisals.
- At the end of every quarter in the calendar year, periodic appraisal is done.
- The periodic appraisal has 3 sections.
- The HR department fills the first section. The data is derived from the time sheet and other relevant documents. The objective of the first section is to identify the total number of hours the staff spends on revenue projects, internal projects, strategic projects etc thereby contributing to the overall performance of the organization.
- The second section (performance appraisal) is filled by the staff himself and by minimum one appraiser to whom he or she has reporting relationship.
- The third section is called the performance development plan in which the staff set goals to be achieved in the next three months period. These goals should have objectively measurable parameters. This will be reviewed during the next periodic appraisal by the appraiser and the staff.
- Once the appraisal forms are filled by the staff and the appraiser, a review is done by the HR department by inviting the staff and the appraiser. In the appraisal review differences in the rating of the performance appraisal are discussed and resolved. The goals set by the staff in the development plan are also reviewed and necessary

modifications are done to arrive at realistic goals. The development plan of the previous appraisal is also reviewed and the remarks are entered.

Periodic appraisal - Non Technical

- For Non-Technical Staff the periodic appraisal is done by self and by the respective department heads or by the directors to whom they report.
- The appraisal for Non-Technical staff shall be done at the end of the second and the fourth quarter.

TIMESHEET

Time sheet in which the staff should enter the details like project id, name of the staff, number of hours worked etc., this should be maintained for all the staffs in the organization. This time sheet is only to view the details.

RESUME SCANNING

Resume scanning is to scan the resumes and select the resumes that have the qualities required by the company. The HR executive to collect the information from the mail or text document and store it in the database, company needs the staff for to allocate the project and Hr to retrieve the information from database to recruit the staff.

1.2 ORGANIZATIONAL PROFILE

e-Brahma Technologies (P) Ltd., is the flagship company of the e-Brahma group providing software services and consultancy. The fast growing e-Brahma group has a presence in software development and IT education.

e-Brahma was established in 1999 and has its corporate office in the city of Coimbatore, India.

e-Brahma is...

- One among the leading software companies in the city of Coimbatore
- An ISO 9001 certified company with a well defined process
- Promoted and led by entrepreneurs with several years of international experience having worked with Fortune 500 companies.
- Having a strong team of committed professionals.
- Geared to serve a global customer base from it's well equipped offshore development center
- An established name for successful service in the technology sector to over 50 clients in North America, Europe, Australia and India.

e-Brahma Technologies provides IT solutions and services in emerging Embedded and Internet Technologies with a strong focus in vertical domains such as Finance, Networking and Telecom

Infrastructure

e-Brahma has a sophisticated modern office, equipped with the latest technology, which has carved a world class knowledge based network environment.

These facilities enhance productivity and maintain the right kind of environment for a creative culture.

We are registered with the Software Technology Parks of India (STPI).

e-Brahma's development center is equipped with:

- Windows 2000/XP/NT/98, Linux on a TCP/IP LAN
- Contemporary software tools to support the software development life cycle activities
- High speed Internet connectivity over leased line and ISDN
- Firewall protection to ensure high level of information security

Process

e-Brahma software development processes have been certified to be compliant with the requirements of the International Standard ISO 9001 by KPMG Quality registrar.

We follow proven project management methods to ensure that software projects are properly managed to achieve predetermined quality standards. We ensure that our clients receive the benefits of reduced costs, improved control and established metrics for continuous process improvement.

System Study

2. SYSTEM STUDY

2.1 EXISTING SYSTEM

The existing system of performance appraisal, staff management and resume scanning is manual. The process of the existing system is explained in a detailed manner. The human resource manager is responsible for the performance appraisal and staff management. The performance appraisal consists of four categories i.e., for new recruits, software engineers, project mangers, department heads, and non-technical staff. The performance appraisal is done for every quarter of the year, monthly, annually, end of probation, end of project. The new recruits should undergo monthly review. A periodic appraisal should be preceded by at least two monthly reviews. The human resource manager calculates the work performance. Self and one superior do the appraisal. The measures include job knowledge, skills, etc. The rating goes from 1 to 10. Each staff prepares the performance development plan so that the improvements that are needed are described. This plan is based on the performance appraisal.

The staff management consists of staff allocation and staff release. The staff required for a project is given to the human resource manager. The HR checks with the timesheet and allocate the staff for the projects. The HR decides the staffs weight age for a project. After the project is completed, it's the work of project manager to inform the HR that the project is over. The HR releases the staffs that were included in the project.

Resume scanning is done to select the resumes that have the eligibility the company requires.

Time sheet records all the activities of the employees in the organization and reports the data in the Excel Sheet, which was approved by the higher authority.

2.2 PROPOSED SYSTEM

The proposed system is the automated system of the performance appraisal, staff allocation/release and resume verification. The system is implemented using ASP and Oracle. All the functions are implemented in the system. This helps the human resource manager to easily access the information regarding the staff and to analyze their performance. The work becomes easier with fewer clicks and easy maintenance of records.

2.3 USER CHARACTERISTICS

The user of the system is mainly the Human Resource Manager. The characteristics of the human resource manager may be to access the workload of the staff, performance of the staff, idle hours of the staff, etc. Hence every form should be integrated with another to get all correlated information together. Another type of user is the staff to calculate his performance. The form that shows the rating should be self explanatory about the measure and the measure should be valuable to measure the performance of the staff. The other user is the HR Executive who would look at the performance development plan and assess its importance and value. At last, all the department heads, project manager, HR executive and HR manager discuss with each other to get the final result.

System Analysis

3. SYSTEM ANALYSIS

System analysis is concerned with investigating, analyzing, designing and implementing along with evaluating of the information systems. The existing systems already studied, analyzed and then recorded provide the clear view on the requirements of the proposed system. Using these specifications the system designing was carried out effectively.

3.1 FACT FINDING

This is a important stage in which data about the system is collected in terms of its technical and the functional requirements. The data is collected based on the existing system outputs and inputs and its costs. Based on on-site observation the system and the needs of the system are observed.

3.2 FEASIBILITY ANALYSIS

The objective of the feasibility study is to test the technical, social and economic feasibility and investigate it. This tests the work ability, impact on the organization, ability to meet the user needs and the effective use of resources of the proposed system.

Technical Feasibility:

This is the actual study of the functioning, performance and constraints, which may actually affect the ability to achieve an acceptable system.

Process of analysis and definition are conducted in parallel with technical feasibility. Helps in determining concrete specifications associated with this technical feasibility are the development risk, resource availability and the relevant technological support. The human resource management system was found to be technically feasible.

Social Feasibility:

The social feasibility is accessed along with the technical feasibility. Impact of the system on organization structure, group relationships and other social forms has been considered. The social evaluation should actually rank in terms of the extent of the people involved to improve the jobs and skill.

Economic Feasibility:

Economic justification includes a broad range of concerns such as cost-benefit analysis, income strategies on other profit centers or products and the cost of the resources needed for development. This system uses limited resources and so economically feasible.

In general, the feasibility study has been documented as a separate report to the upper management authorities. The decisions leading to the feasibility study are planning, specification and the development steps in the hardware.

This activity of the analysis highlights the failures of the current system and the implications of the user requirements for the proposed system in terms of the data used and procedures used for its production.

Problem Formulation

4. PROBLEM FORMULATION

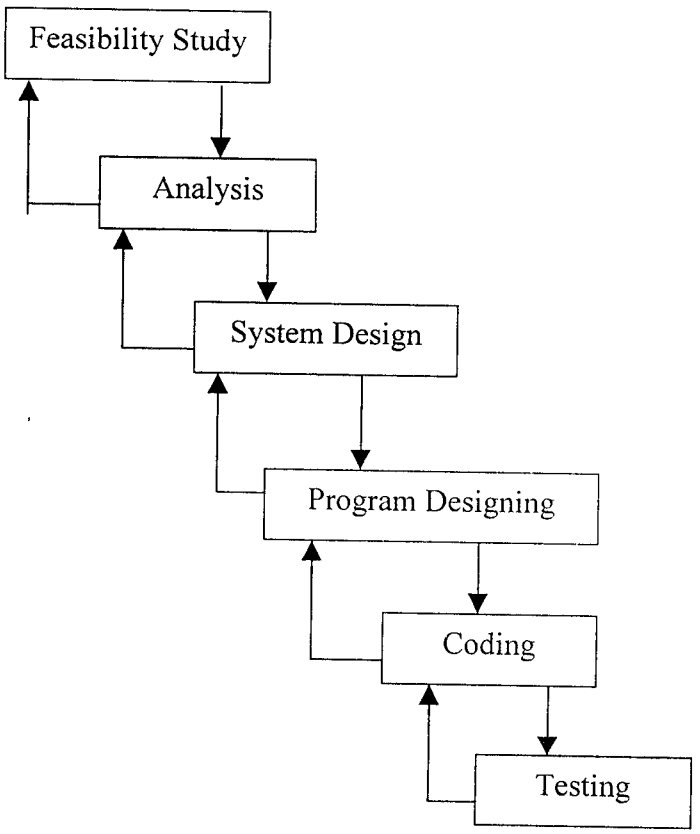
4.1 METHODOLOGY

The methodologies used to develop the "**Human Resource Management System**" are

The Waterfall Model:

This model of system development allows flow in one direction with a title bit of backtrack, from the feasibility study, analysis and system study to the program design, coding, testing and the operation.

Figure shows the waterfall model:



Bottom-up Approach:

In the above said model of system development the approach followed is the bottom-up approach. The basic components and constraints are first decided and then it is developed to the expected product of delivery.

ADO Connectivity:

Active-X Data Object (ADO) is a programming interface to access data in a database and it is a Microsoft Active-X component. The ADO Connectivity is used to access the database from Oracle.

4.2 HARDWARE & SOFTWARE REQUIREMENTS

Hardware Configuration :

Processor	:	Intel Pentium III
Cache	:	256 KB
RAM	:	128 MB
Hard Disk Drive	:	20 GB Ultra DMA
Floppy Disk Drive	:	3.5",1.44 MB
CDROM	:	Creative
Monitor	:	SAMTRON(15" color)
Keyboard	:	104 keys
Mouse	:	FRONTECH

Software Configuration :

Operating System	:	Windows 98
Web Server	:	Personal Web Server
Client side	:	Html , JavaScript
Server side	:	ASP
Back-End	:	Oracle 8
Browser	:	Internet Explorer

4.3 SOFTWARE DESCRIPTION & DESIGN TOOLS

Active Server Pages (ASP):

ASP is very powerful and yet easy-to-learn server side scripting environment. Active Server Pages comes with Internet Information Server for Windows NT server and with Personal Web Server for Windows NT workstation and Windows 98.This environment enables you to create a web site that is dynamic, fast and interactive without requiring you to worry about the capabilities of your clients browsers, which you must do if you rely on client side scripting like client-side JavaScript or client-side VBScript.

We can create dynamic web pages in many ways. Microsoft's solution to building dynamic web pages is through the use of Active Server Pages, commonly abbreviated as ASP. Active Server Pages contain two parts: programmatic code and embedded HTML. The programmatic code can be written in a number of scripting languages. A scripting language is a particular syntax used to execute commands on a computer. A program composed of commands from a particular scripting language is referred to as a script. Some particular web related scripting languages include VBScript and JavaScript. Most ASP pages are created using VBScript. The syntax is similar to Visual Basic's syntax. The embedded HTML allows for existing static web pages to be easily converted into dynamic web pages. An ASP page must contain an .asp extension.

The Internet runs on a client-server model. With the Internet, the server is a particular Web Server. The client on the Internet is a web Browser. The Web Server has to process the programmatic code in ASP before sending the HTML to the client .The client can not tell the difference between an ASP page and a static web page because in both cases, it receives just HTML.

Client-side scripting is programmatic code in an HTML file that runs on the browser. ASP scripts are server-side scripts, which are executed on the web server. These scripts are processed and their output is sent to the client.

ASP is designed by Microsoft to make it easier to web application developer to create sophisticated web applications. ASP applications are executed on the server side. Some of the benefits of ASP are as follows:

- ASP is available on multiple platforms.
- ASP development is easy to learn.
- ASP compliments client-side scripting.

JAVA SCRIPT:

Java Script is a compact, object-based scripting language for developing client and server intranet applications.

The Java Script language resembles Java, but without Java's static typing and strong type checking. JavaScript supports most of Java's expression syntax and basic control flow constructs. In contras to Java's compile-time system of classes built by declarations, JavaScript supports a run-time system based on a small number of data types representing numeric, Boolean, and string values.

JavaScript has a simple instance-based object model that still provides significant Capabilities.

JavaScript also supports functions, again without any special declarative requirements. Functions can be properties of objects, executing as loosely typed methods.

In contrast, JavaScript descends in spirit from a line of smaller, dynamically typed languages like JyperTalk and DBase. These scripting languages offer programming tools to a much wider audience because of their easier syntax, specialized built-in functionality, and minimal requirements for object creation.

- Interpreted (not complied) by client.
- Object-based. Code uses built-in, extensible objects, but no classes code integrated with, and embedded in HTML (accessed from HTML pages).
- Variable data types not declared (loose typing).
- Dynamic binding. Object references. Static binding. Object 0references must check at run-time.
- Secure. Cannot write to hard disk.

JavaScript can be embedded in an HTML document in two ways:

- As statements and functions using the SCRIPT tag.
- As event handlers using HTML tags.

CLIENT SERVER ARCHITECTURE:

In the client server model of pc the power can be spread across the client and the server. The client software supplies the interface and the knowledge of how to pass the request to the server, and then format the data from the user then it is returned from the server. The approach divides the processing across several computers, which has the advantage of not overloading any Single processor.

ODBC (OPEN DATABASE CONNECTIVITY)

Open Database connectivity helps us to access different databases. This allows a single uniform language to access different databases, instead of using the proprietary languages of each database. This is done by API (application program interface). The API is developed fro each database such that it interprets the request so that any database can write the information.

The open connectivity allows an application to get data from any kind of database. The ODBC sit on the client and is called from an application. The request from the client is sent to the OCBC driver manager, which decides whether the data base driver is installed in the client either Fulfills or denies the request and sends the information back to the driver manager which returns information to the client application.

A driver usually contains the callable API functions fro a single database. The drivers and Driver manager needs to be installed on every client machine. The drivers are dynamic link libraries (DLL) and the driver manager is an executable programs fro each database. You want to connect to a data source name (DSN). The DSN tells to the driver where the database is located.

ORACLE 8:

Oracle 8, the database for Internet computing, changes the way information is managed and accessed to meet the demands of the Internet age, while providing significant new features for traditional Online Transaction Processing (OLTP) and Data Warehouse applications, It provides advanced tools to manage all types of data in Websites , but it also delivers the performance , scalability , and availability needed to support Very Large Data Base (VLDB) and mission-critical applications.

- It simplifies the management of applications
- It simplifies the management of Internet content.
- It simplifies the deployment of applications

HTML:

HTML specifies web page elements like table, frame, paragraph, bulleted lists etc Cascading Style Sheets can be used to determine an element's size, color, position and a number of other features. Scripting languages can be used to manipulate the web pages elements so that styles assigned to them can change in response to a user's input .The advantages of style sheet includes the ability to make global changes to all documents from a single location.

System Design

5. SYSTEM DESIGN

The system design is the final phase that indicates the proposed system and its process.

5.1 Input Design

In the input design of the human resource management system the database fields; input screen and output record screen, etc are designed to match the user needs and the system feasibility.

- The databases are designed using all the necessary fields in a compact manner. The redundancy and duplication of fields are avoided.
- All the input screens in this system are user friendly and are designed in an understandable format. The size of all screens is standardized.
- Reports generated here give the minute information, which are useful in decision-making.

The design of the system states the solution to the requirements. The design will determine the success of the system and this phase indicates the final system. The input design is the link that ties information system into its users. Input design consists of developing specification and procedures for data preparation, steps necessary to put transation data into a form are usable for computer processing.

Main objectives that are to be met in the design are:

- Controlling the amounts of input
- Avoid inordinate delay
- Controlling errors

In the admin module user can create the user id, maintaining all the details staff, project, activity, resume, rating measures. This maintains every possible domain of the entities involved in the project. The new entity can be added, deleted, updated, modified. This is the data source for all other transactions. Hr can fill the following details.

- Staff details
- Project details
- Activity details
- Resume details
- Rating measure details.

Hr performs allow to Add, delete, update, modify, processing queries in search of details in all the master tables.

The performance appraisal for new recruits undergoes monthly review for three months. The new recruit's performance is to be analyzed to make him continue or to cease his course of work after probation period. No self-appraisal is done.

- Staff name
- Staff id
- Monthly review
- Merit rating measures
- Hours worked for revenue earning project

The performance appraisal for software engineers and project manager/development manager appraisal. Periodic appraisal here is done once in three months.

- Staff name
- Staff no
- Q1, Q2, Q3, Q4 (quarterly-periodic review)
- Annual
- End of probation or end of period
- Merit
- Rating measures
- Hours worked for revenue earning project
- Strategic project assignments
- Idle hours, improvement to be done.

Non-Technical Staff the periodic appraisal is done by self and by the respective department heads or by the directors to whom they report at end of the second and the fourth quarter.

- Staff name
- Staff no
- Q1, Q2, Q3, Q4 (quarterly-periodic review)
- Annual
- End of probation or end of period
- Merit
- Rating measures
- Hours worked for revenue earning project

- Strategic project assignments
- Idle hours, improvement to be done.

The HR manager verifies the staff master and allocates the staff for the project. Staffs are allocated on the basis of one person-one project.

- Project id,
- Staff Id
- Percentage of allocation
- Allocation date

The staff can be released either when the project is over or by a request for release.

- Project id
- Staff id
- Release date
- Purpose of release

The time sheet design contains the details about staff working time of every day. User to add work hrs,

- Staff id
- Project id
- Activity code
- Sun-Mon work hrs
- Total

Hr to scan the resumes and staff needed to allocate the project

- Text document or E-mail received.

5.2 Output Design

The System developed will be successfully only if it generates the outputs in the required format, the human resource management system has several screens for the purpose of providing the necessary information to the HR and user.

Major components in output design are:

- Staff Information
- Reports

Reports are standard, some of the reports are

- Staff Personal information, which gives the staff details.
- Time Sheet report, which gives the working hours of each day and there activity.
- Project Report, which contains the information about the staff are allocated.

The Human Resource Management System is designed to provide a user friendly interface ,therefore the output is understandable even by a novice.

The reports generated by the system are simple and user specific.

Error messages make entry very interactive, the user is alert with error message during the data entry.

On executing the system, it prompts for userid and password .if the above matches the user is redirected to the main menu; only the authorized user is redirected to the main menu links to staff management, timesheet, etc.

Some of the sample reports and enquiry forms are shown in Appendix B.

5.3 Database Design

Database design are crucial in managing the data received through the forms, the management of data involves both the definition of structures for storage of information for the mechanism of information .In addition, the database, must have a unique and appreciable security features.

A good database must furnish the following:

- Ease of use
- Data independence
- Accuracy and integrity
- Recovery from failure
- Performance

Data redundancy can be controlled by extensive normalization of the tables.

The Human Resource Management System consists of tables that are normalized to maximum extend, the normalization is the process of simplifying the relationship between data elements in a record

Normalization has been carried out for 4 reasons:

- To structure the data so that any persistent relationship between entities can be represented.
- To permit simple retrieval of data in response to query and reports required
- To simplify data maintenance procedures such as insertion, deletion and updating.

The database tables used in the system in desired in Appendix A.

5.4 Process Design

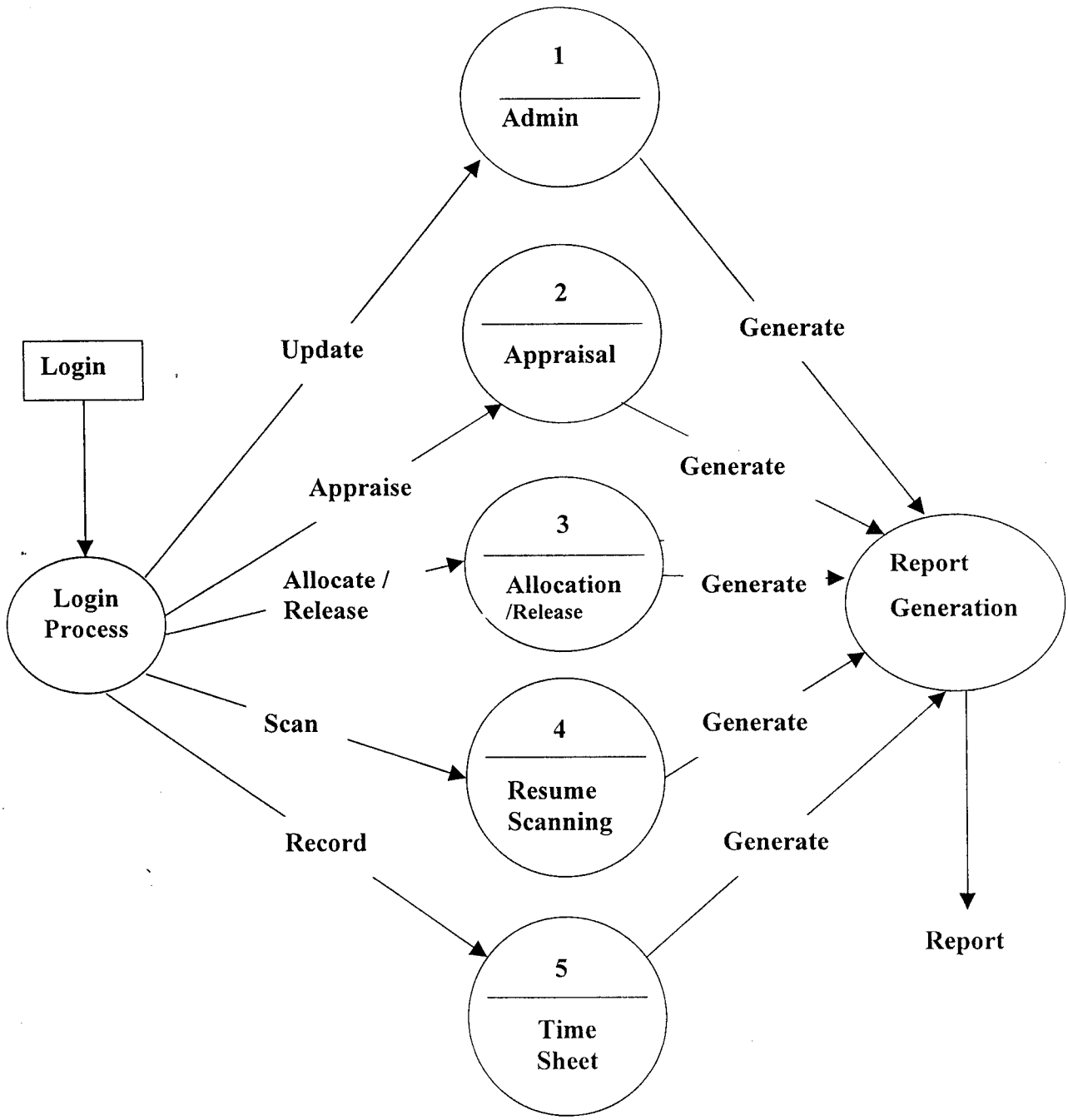
The process design is defined as a ordered set of events that accomplishes some tasks required for a system. The events are actions, operations, or series of changes taking place in a definitive manner.

Process design consists of three levels polices, procedures and standards. The architectural framework provides a definition for basic elements, how they relate and how are decomposed into greater detail, the basic element of process design is unit cell.

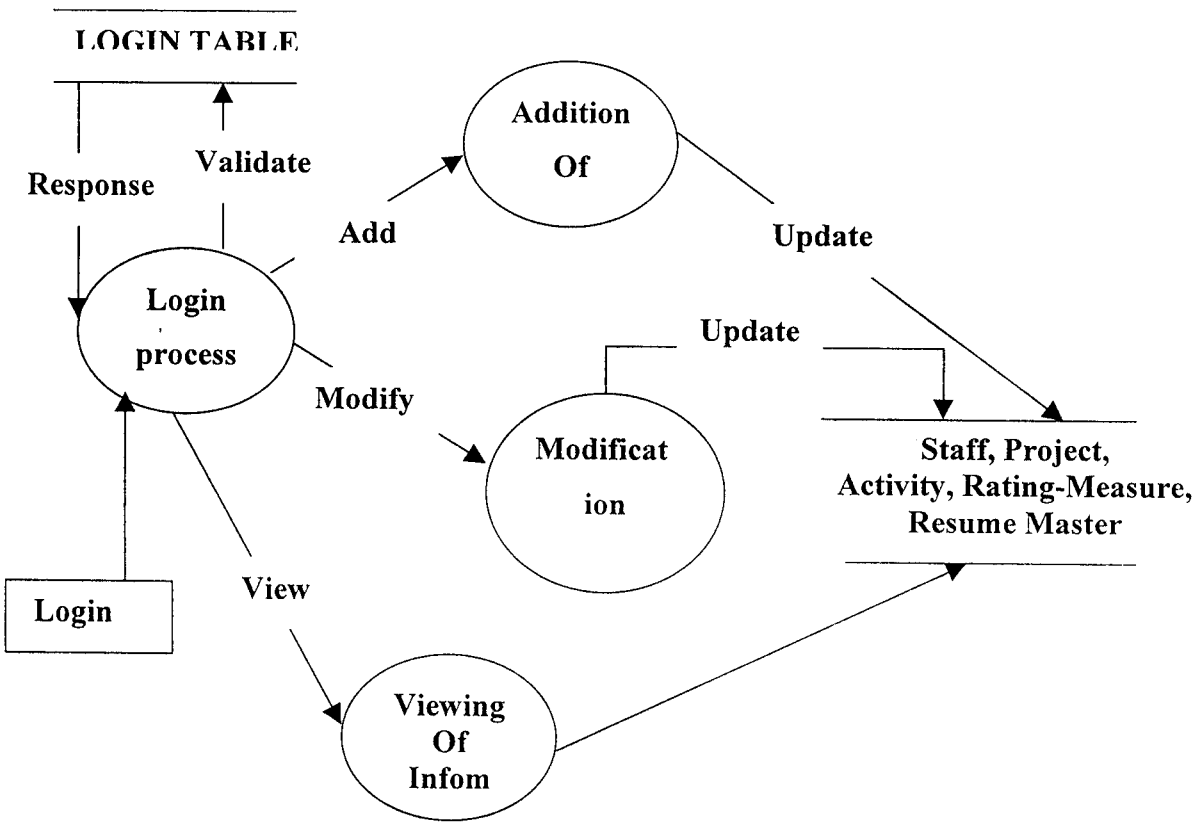
A DFD consists of numerous unit cells which is defined to the accomplish a specific task and is uniquely identified. Each cell has required entry condition with inputs, task standards, procedures, methods, responsibilities and measures. Exit conditions define the result produced, there level of validation, and may post task condition.

Data Flow Diagram

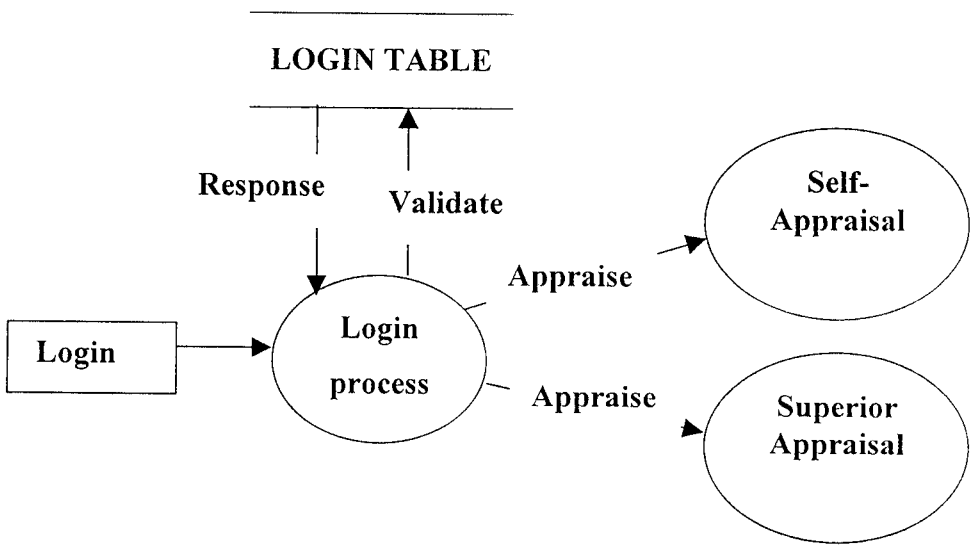
OVERALL DIAGRAM



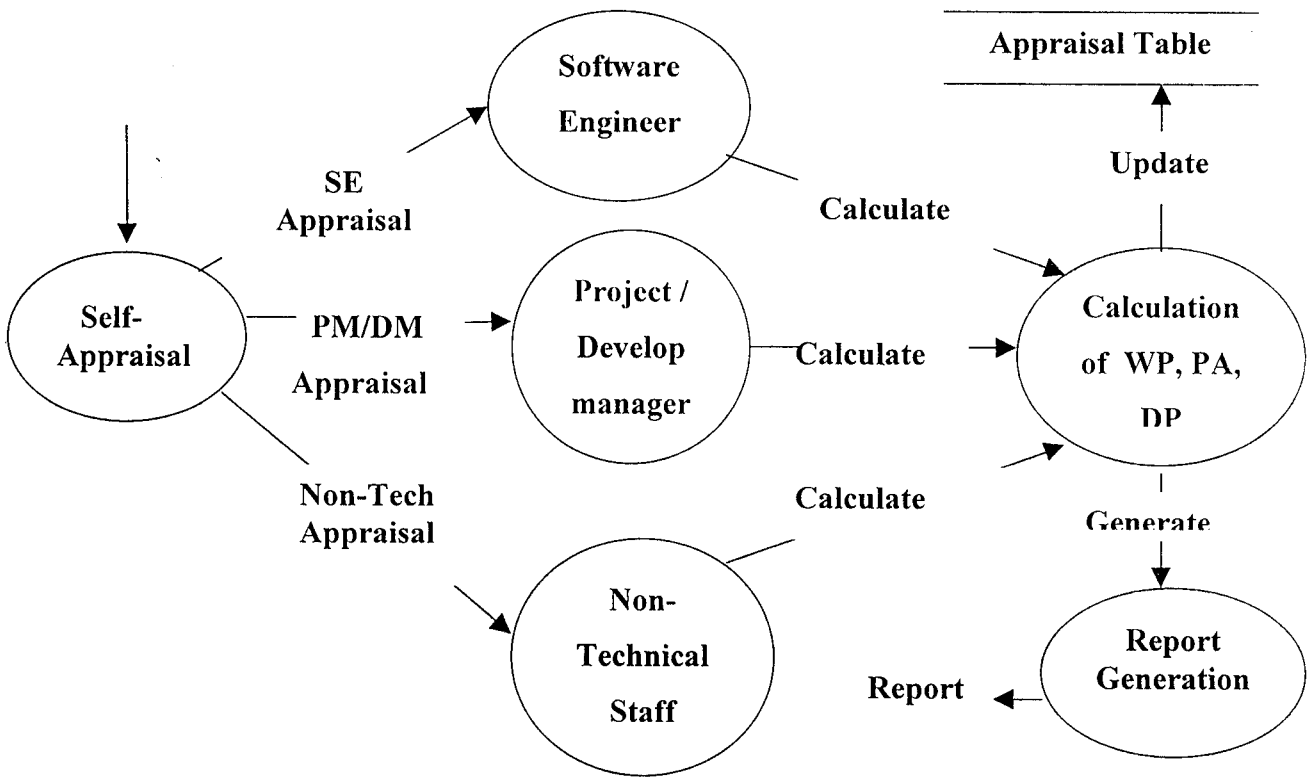
ADMIN MODULE



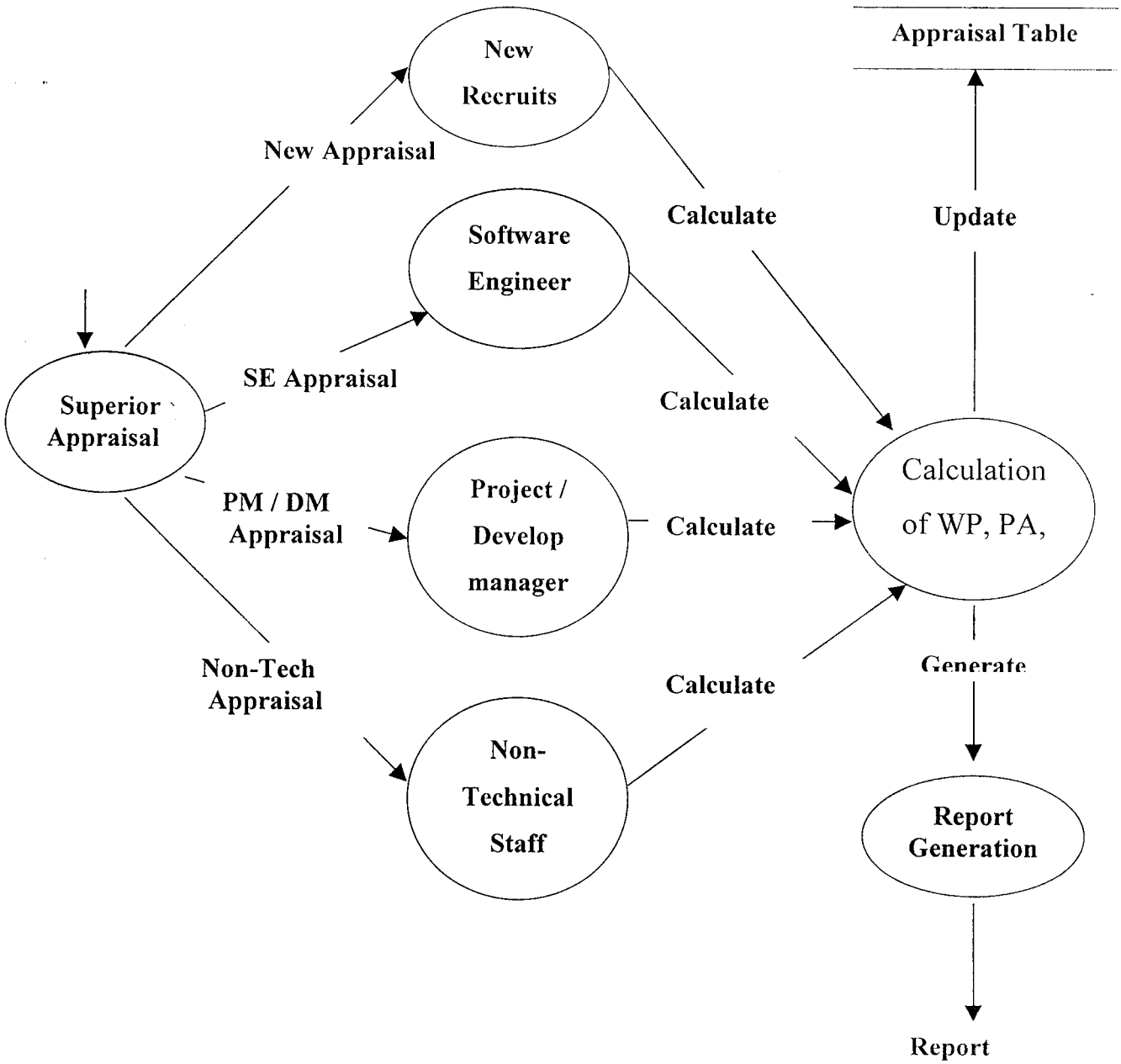
APPRAISAL MODULE



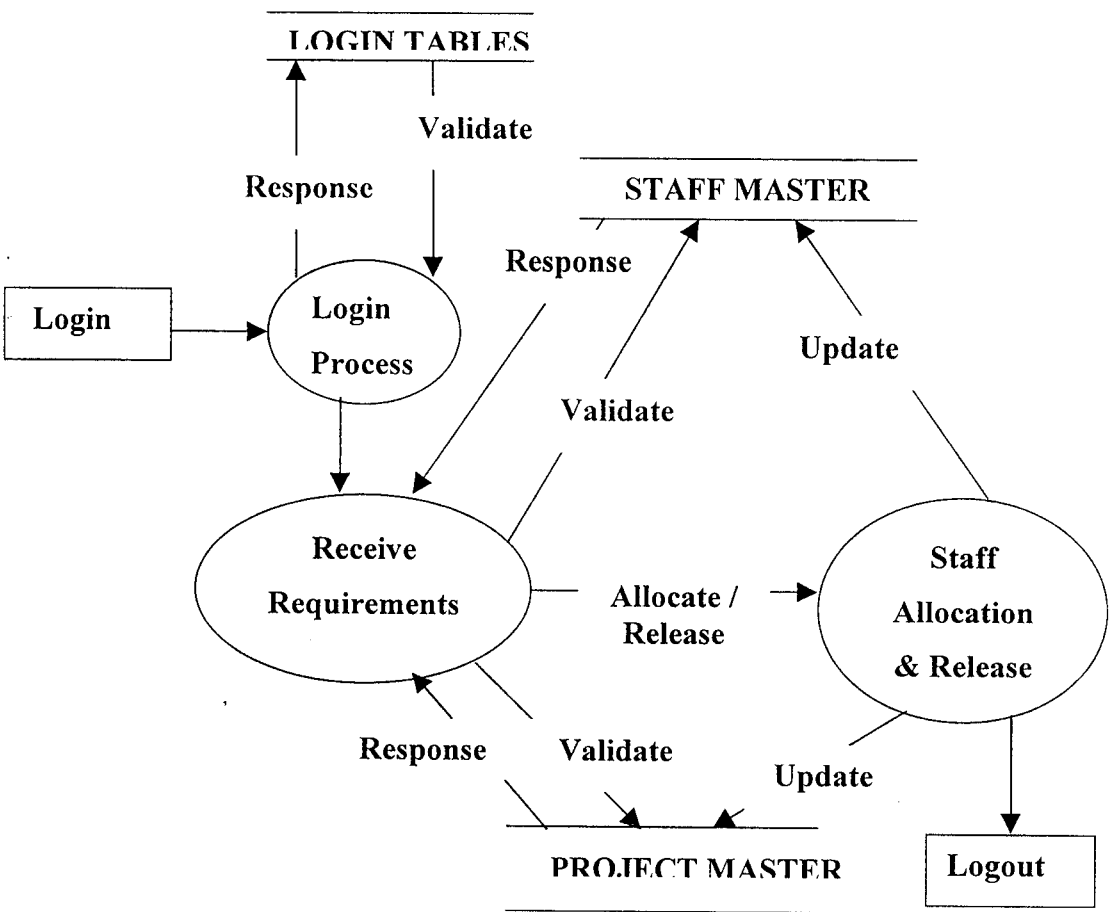
SELF-APPRAISAL MODULE



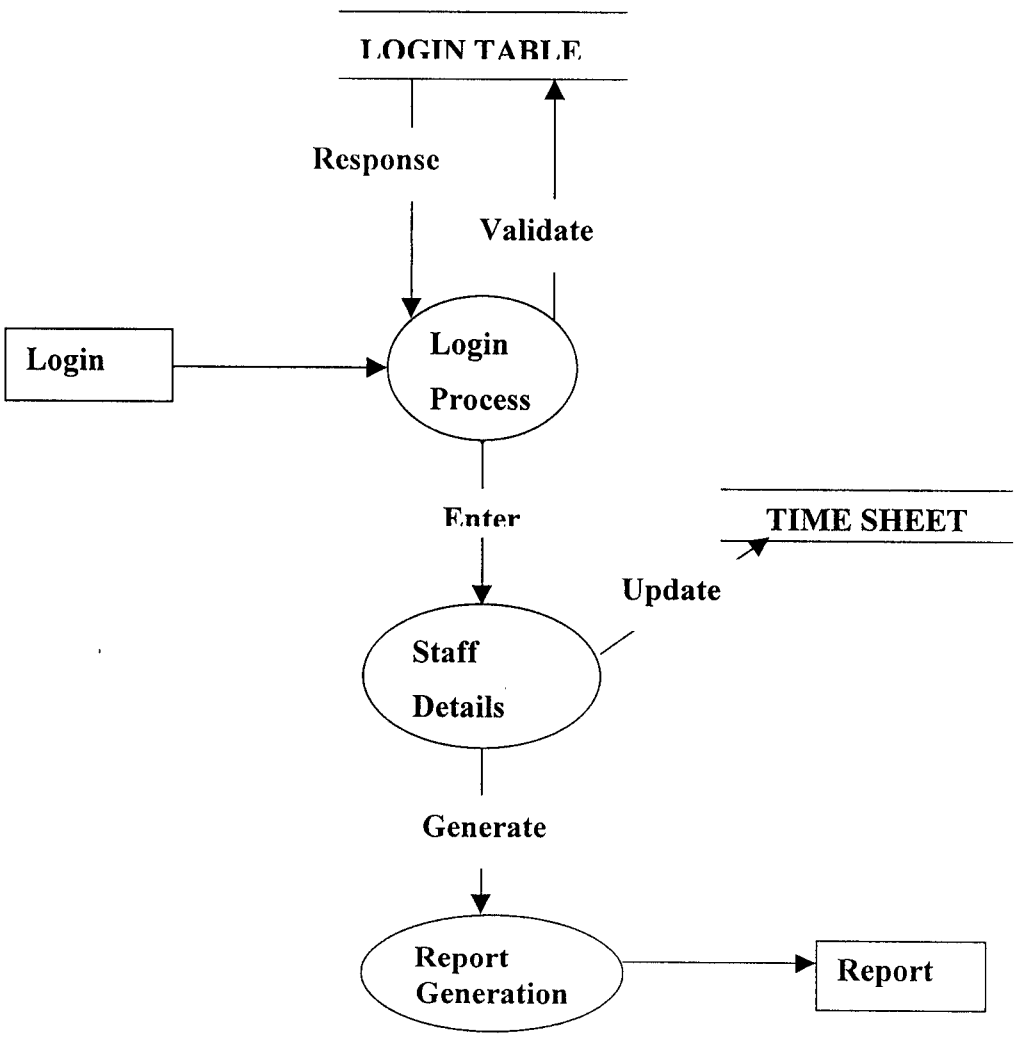
SUPERIOR-APPRAISAL MODULE



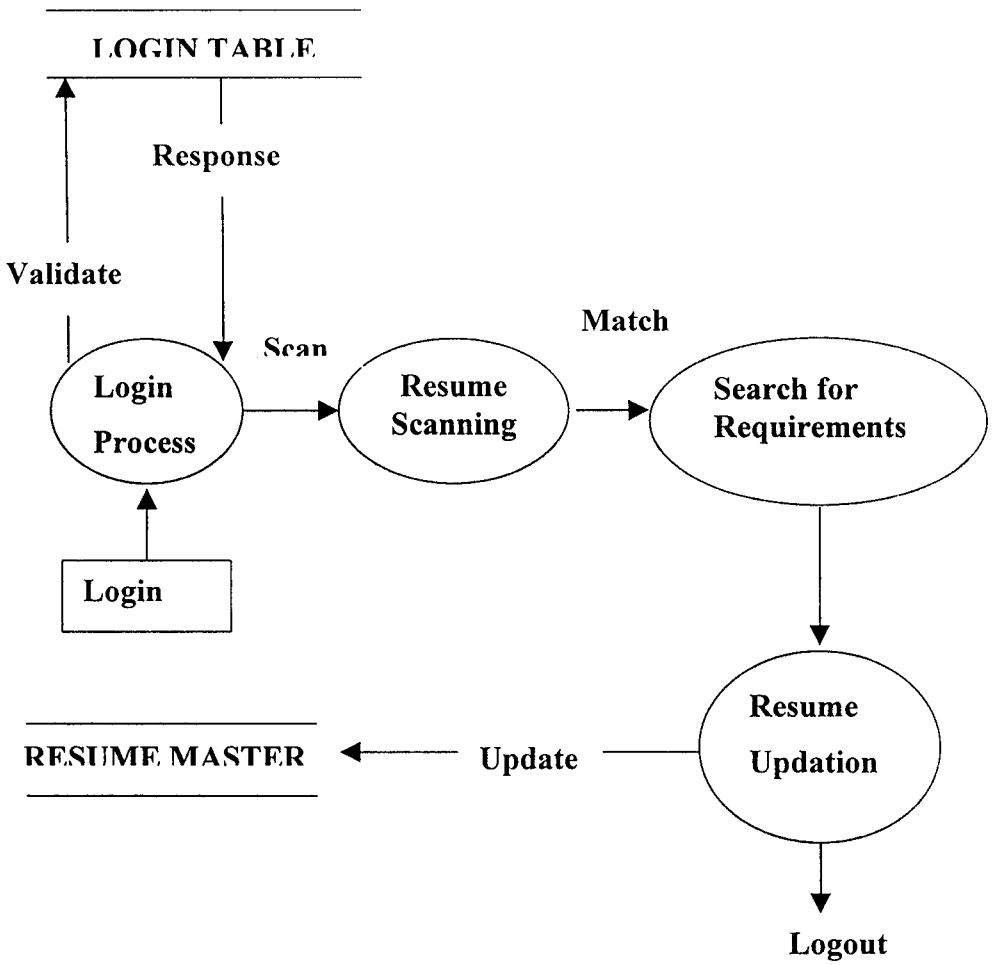
STAFF MANAGEMENT MODULE



TIME SHEET MODULE



RESUME SCANNING MODULE



System Implementation & Testing

6. SYSTEM IMPLEMENTATION & TESTING

6.1 SYSTEM IMPLEMENTATION

Implementation is the stage of the project when the theoretical design is turned into a working system. At this stage the main workload, the upheaval and the major impact on the existing practice shifts of the user department. If the implementation stage is not carefully planned and controlled. It can cause chaos. Thus it can be considered to be the most crucial stage in achieving a new successful system and in giving the users confidence that the new system will work and be effective.

Implementation involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, training of staff in the changeover procedures and evaluation of changeover methods. The first task is implementation planning, i.e., deciding on the methods and time scale to be adopted.

Once the planning has been completed, the major effort in the computer department is to ensure that the programs in the system are working properly. At the same time the user department must concentrate on training user staff. When the staff has been trained, a full system test can be carried out, involving both the computer and clerical procedures.

Education involves creating the right atmosphere and motivation the user. Staff education section encourages participation from all sides.

CODING:

Conversion of design specification into source code in the software product developed includes the usage of set of factors given below:

Structured Coding Techniques:

- Single Entry, Single Exit Constructs.
- Efficiency Considerations.

Coding Styles:

- Use of few Standards, agreed upon control constructs.
- Use of User defined data types.

In the code sheet, the code written for particular event of the selected object will get executed if the control acquires the object. For Example, control passes through the code written in the key code event of the object, says Text Box, if the key press action takes place in the corresponding Text Box on the screen. This implies that the data variables and functions written for that object are encapsulated to it. Hence the security for the execution of code holds goods. Also comments have been included in the coding when the part of the program needs to specify the remarks.

Documentation Guidelines:

Supporting documents such as requirement specifications, design documents, test plans and maintenance reports have been included. Thus documents are the result of systematic development and maintenance of software.

Program until completion notebook has been maintained on the due date of the module's completion. Also remarks are entered which are then referred in further coding.

Internal Documentation:

This consists of a standard prologue for each program init with the commenting conventions in it. The factors that are used in the commenting conventions are as follows.

- The needs are attached to block of code that perform major data manipulations perform Exception Handling.
- The needs for embedding the comments are minimized.
- Blank lines, border and identification to highlight the comments have been used.
- Comments and code are written in such a way that they agree with each other and with the requirements and design specification.

5.2 SYSTEM TESTING

A strategy for software testing integrates software test case design techniques into a well-planned series of steps that result in the successful construction of software. As importantly, a software testing strategy provides a road map for software developer, the quality assurance organization, and the customer a roadmap that describes the steps to be conducted as a part of testing. When these steps are planned and then undertaken and how much effort, time and resources will be required.

In many ways testing is an individualistic and the number of different types are tests varies as much as different development approaches.And hence testing considered as a set of activities that can be planned in advance and conducted systematically. Software testing is one element of a broader topic that is often referred to as verification and validation. Verification refers to the set of activities that ensure that the software correctly implements a specific function. Validation refers to a different set of activities that ensures that the software has been built is traceable to customer requirements.

Purpose of Testing:

- To attain the quality of the product
- To find and eliminate any residual errors from previous stages.
- To demonstrate the presence of all specified functions in the product.
- To validate the software as a solution to the original problem.

Black Box Testing:-

Black Box Testing focus on the fundamental requirements of software and on the input and output of module. It enables the software engineer to derive sets of input conditions that will truly exercise all functional requirements of a program. Black box testing, rather a contemporary approach that is likely to uncover different class of errors. It attempts to find that errors in the following category.

- Errors in database structure and database access.
- Incorrect and missing functions.
- Performance errors.
- Initialization and termination errors.

White Box Testing: -

White box testing is a test case design method that uses control structure of the procedural design to drive test cases. Using white box testing method, software engineer can test cases that,

- Exercise all logical decisions on their 'true' or 'false' sides.
- Guarantee that all independent paths with a module have been exercised at least once.
- Exercise internal data structure to ensure validity.

- Execute all loops at their boundaries and their operational bounds.

Unit Testing

Unit testing focuses verification effort on these smallest of software design modules. Using the detailed design description as a guide, important control paths are tested to uncover errors within the boundary of the module. The relative complexity if tests and errors detected as a results is limited by the constraint scope established for unit testing. The unit testing is always white box oriented, and the step can be conducted in parallel for multiple modules. The module interface is tested can ensure that information properly flows in it and out of the program unit under test. Boundary conditions are tested to ensure that the module operates properly at boundaries established to limit or restrict processing. Unit testing is normally considered on adjunct to coding steps. After source code has been developed, reviewed and verified for correct syntax, unit test case design begins.

In this system, the unit test has performed in following modules that are staff management module, performance appraisal module, resume scanning and time sheet module. The information flow has been tested; the module operates properly at boundaries.

System Testing

System testing is a series of different tests whose purpose is to fully exercise the computer-based system. Although each test has a different purpose, all work should verify that all system elements have been properly integrated and perform allocated functions.

There are four different types of system testing.

- Recovery Testing
- Security Testing
- Stress Testing
- Performance Testing

Recovery Testing

Many compiler-based systems must recover from faults and resume processing within pre-specified time. Recovery testing is a system test that forces the software to fail in a variety of ways and verifies that recovery is properly performed. In this system, the data transactions cannot be lost; the system will automatically recover from improper operations such as power failure, high network traffic.

Security Testing

Security testing attempts to verify that protection mechanisms built into a system will, in fact protect it from improper penetration. The system security must be tested for invulnerability from frontal attack.

In this System each user has their own login id and password. In this system every user has the highest-level security.

Conclusion

7. CONCLUSION

The complete design and development of the system **'HUMAN RESOURCE MANAGEMENT SYSTEM '** is presented in this dissertation. A good amount of user-friendly features have been incorporated in the Staff management system and it is possible for any user to exploit these features to get the maximum benefit.

The programming techniques used in the design of the system provide a scope for further expansion and implementation of any changes, which may occur in future. The various reports generated by the system have provided to be quite useful.

The system has been tested with sample data covering all possible options for each function. Its performance is satisfactory. The system is under implementation.

This system is developed with the specifications and abiding by the existing rules and regulations of the company.

Since the requirements of any organization and their standards are changing day to day the system has been designed in such a way that its scope and boundaries could be expanded in future with little modifications. As a further enhancement this system can be integrated with any other system.

This package has been developed using ASP for designing phase and ORACLE for storage of data. The main aim behind the development of this package is to provide a comprehensive solution that is capable of handling and meeting the company's stated and implied requirements.

Bibliography

8. BIBLIOGRAPHY

[1] Christoph Wille & Christian Koller, "Active Server Pages, " SAMS Publishing, 5th edition, 2000

[2] Scott Mitchell & James Atkinson , "Active Server Pages 3.0," TataMcGrawHill, 3rd edition, 2001

[3] Scott Johnson "Using Active Server Pages," Prentice Hall India special edition, 2002.

[4] Er.V.K.Jain,". Advanced Programming Web Design," APH publishing, professional edition, 1999

[5] Carol McCullough-Dieter "Oracle 8 Bible, " Comdex Computer Publishing, 2nd edition, 2000.

[6] William G.Page Jr, "Using Oracle 8/8i", Prentice Hall of India, Special edition, 1999.

[7] Richard Farley "Software Engineering," ABJ Publishing, 1st edition, 1998

[8] Holzschlag "Using HTML," Prentice Hall India, 6th edition, 2000

[9] DanBarrett "Javascript for web professionals," low price edition, 2000

[10] PaulJohnson "Javascript programmers reference," TataMcGrawHill, 5th edition, 1999

Appendices

Data Dictionary

APPENDICES

A.DATA DICTIONARY

1. Administrator Login Details

Table Name: admin

S.No	Fields	Data Type	Size	Constraints	Description
1	Login	Varchar	20	Primary key	Login name
2	Pass	Varchar	20	-	Password
3	Repass	Varchar	20	-	repassword

2. Staff Information Details

Table Name: staff

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Primary key	Staff Id
2	S_name	Varchar	25	-	Staff name
3	Desig_id	Varchar	10	Foreign key	Designation id
4	Doj	Date	-	-	Date of join
5	Dob	Date	-	-	Date of birth
6	Sex	Varchar	6	-	sex
7	Mar_status	Varchar	15	-	Martial status
8	Pass_no	Number	10	-	Passport number

3.Address Details

Table Name: address

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Foreign key	Staff Id
2	Per_add	Varchar	40	-	Permanent Addr
3	Temp_add	Varchar	40	-	Temporary Addr
4	Pno	Number	15	-	Phone number
5	Mobno	Number	15	-	Mobile number
6	Email	Varchar	20	-	Email addr

4. Skill Details

Table Name: skill

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Foreign key	Staff Id
2	Edu_id	Number	10	Primary key	Education Id
3	Tech_skill	Varchar	20	-	Technical skill
4	Cert	Varchar	20	-	Certification

5. **Education Details**

Table Name: educ

S.No	Fields	Data Type	Size	Constraints	Description
1	Edu_id	Number	10	Foreign key	Education id
2	Degree	Varchar	20	-	Degree
3	Branch	Varchar	20	-	Branch
4	Univ	Number	20	-	University
5	Ye_pass	Date		-	Year of pass
6	Class	Varchar	10	-	class

6. Bank Details

Table Name: bank

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Foreign key	Staff id
2	acc_no	varchar	10	-	Account number
3	Bname	Varchar	40	-	Bank name
4	Branch	Varchar	40	-	Branch Name

7. **Designation Details**

Table Name: desig

S.No	Fields	Data Type	Size	Constraints	Description
1	desigid	Number	10	Primary key	Desig Id
2	desc	Varchar	20	-	Description
3	grade	Varchar	10	-	Grade

8. **Project Details**

Table Name: project

S.No	Fields	Data Type	Size	Constraints	Description
1	Pr_id	Number	10	Primary key	Project Id
2	Pr_name	Varchar	20	-	Project Name
3	Pr_lead	Number	10	-	Project leader
4	Pr_mgr	Number	10	-	Project manager
5	Sdate	Date	-	-	Start date
6	aedate	Date	-	-	Actual end date
7	eedate	Date	-		Expected end date

9. Staff Allocation Details

Table Name: allocation

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Foreign key	Staff id
2	Pr_id	Number	20	Foreign key	Project id
3	Per_allo	Number	10	-	Percentage of allocation
4	Alo_date	Date	10	-	

10. Staff Release Details

Table Name:release

S.No	Fields	Data Type	Size	Constraints	Description
1	S_id	Number	10	Foreign key	Staff Id
2	Pr_id	Varchar	20	Foreign key	Project Id
3	Rel_date	Date	10	-	Release date
4	Por	Varchar	20	-	Purpose of release

11. Time sheet Details

Table Name: timesheet

S.No	Fields	Data Type	Size	Constraints	Description
1	Ts_id	Number	10	Primary key	Timesheet Id
2	S_id	Number	10	Foreign key	Staff Id
3	Rev_id	Number	10	-	Reviewer Id
4	Sdate	Date	-	-	Start date
5	Enddate	Date	-	-	End date
6	Sub_date	Date	-	-	Submission Date
7	Tot	Number	3	-	Total

12. Time Sheet log Details

Table Name: tslog

S.No	Fields	Data Type	Size	Constraints	Description
1	Ts_id	Number	10	Foreign key	Timesheet id
2	Pr_id	Number	10	Foreign key	Project id
2	Activ_code	Number	10	-	Activity code
3	Sun	Number	4,2	-	Sunday
4	Mon	Number	4,2	-	Monday
5	Tue	Number	4,2	-	Tuesday
6	Wed	Number	4,2	-	Wednesday
7	Thu	Number	4,2		Thursday
8	Fri	Number	4,2		Friday
9	Sat	Number	4,2		Saturday

13. Activity Details

Table Name: activity

S.No	Fields	Data Type	Size	Constraints	Description
1	Activ_code	Varchar	10	Primary key	Activity code
2	Activ_name	Varchar	20	-	Activity name

14. Rating Measure Details

Table Name: t_rating

S.No	Fields	Data Type	Size	Constraints	Description
1	App_m_id	Varchar	10	Primary key	Appraisal measure id
2	S_no	Number	3	-	Serial number
3	Desig_id	Varchar	10	Foreign key	Desig Id
4	M_name	Varchar	20	-	Measure Name
5	M_desc	Varchar	20	-	Measure description

15. Reason for appraisal Details

Table Name: t_reason

S.No	Fields	Data Type	Size	Constraints	Description
1	Reason_name	Varchar	20	-	Reason name
2	description	Varchar	30	-	description

16. Appraisal Details

Table Name: t_appraisal

S.No	Fields	Data Type	Size	Constraints	Description
1	App_id	Varchar	10	Primary key	Appraisal id
2	Staff_id	varchar	10	-	staffid
3	App_date	Date		-	Appraisal date
4	Appraiser_id	Varchar	10	-	Appraiser id
5	wp	Number	10	-	Wok performance
6	pa	Number	10	-	Performance appraisal
7	dp	Number	10	-	Development plan
8	opai	Number	10	-	Over all per app index

17. Rating Value Details

Table Name: t_rating_value

S.No	Fields	Data Type	Size	Constraints	Description
1	App_id	Varchar	10	Foreign key	Appraisal id
2	App_meas_id	Varchar	10	-	Appraisal measure id
3	Rating_value	varcharr	2	-	Rating value
4	remarks	varchar	20		remarks

18. Goals Details

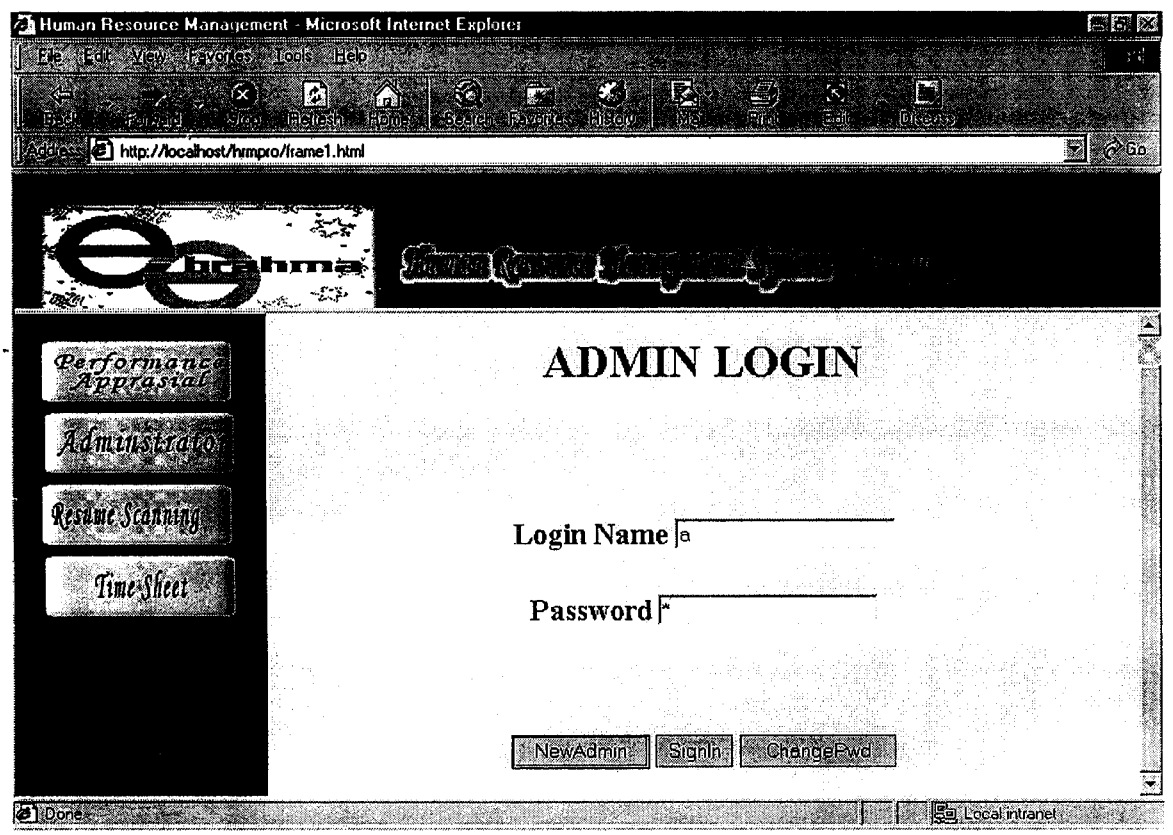
Table Name: t_goals

S.No	Fields	Data Type	Size	Constraints	Description
1	App_id	Varchar	10	Foreign key	Appraisal id
2	gsno	Number	10	-	Goal no
3	goals	Varchar	20	-	Goals
4	keymeasure	Varchar	30	-	Key measure
5	Reating_value	Varchar	10	-	Rating value
6	Appraiser_rem	Varchar	20	-	Appraiser remarks

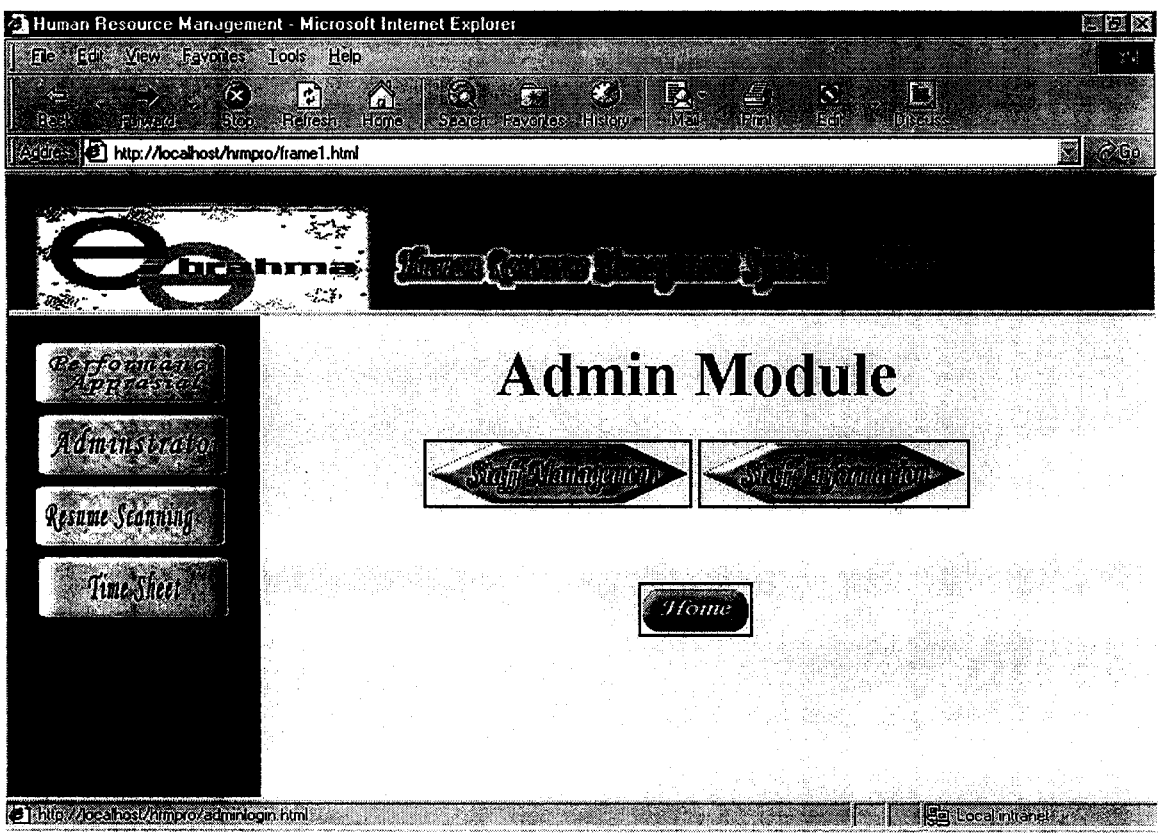
Screens

B. SCREENS

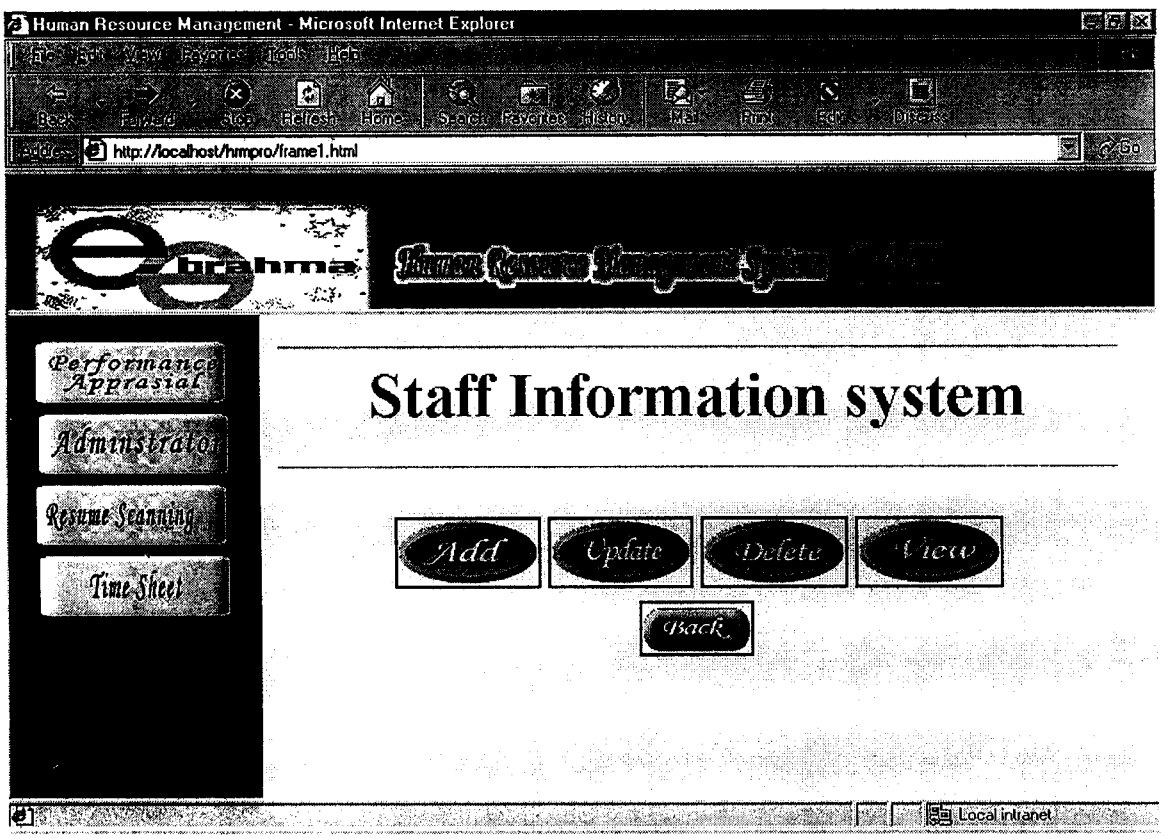
ADMIN LOGIN



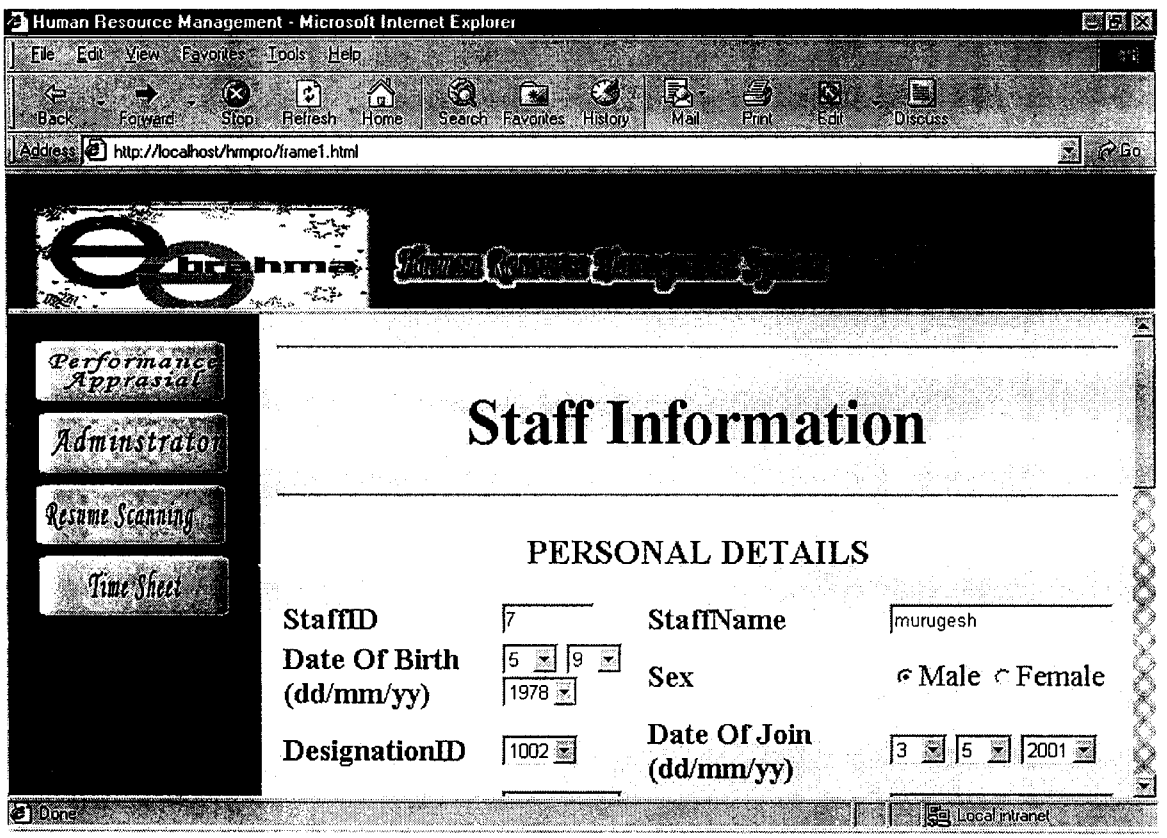
ADMIN MODULE



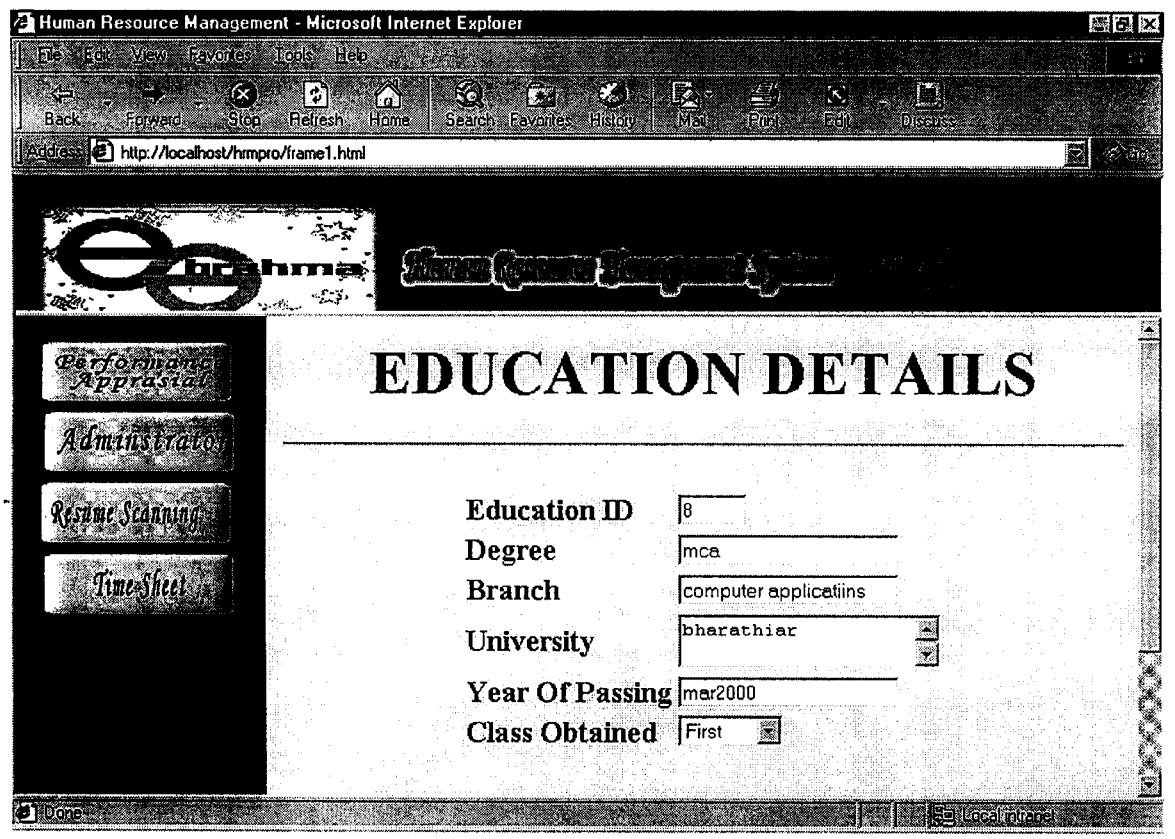
STAFF INFORMATION



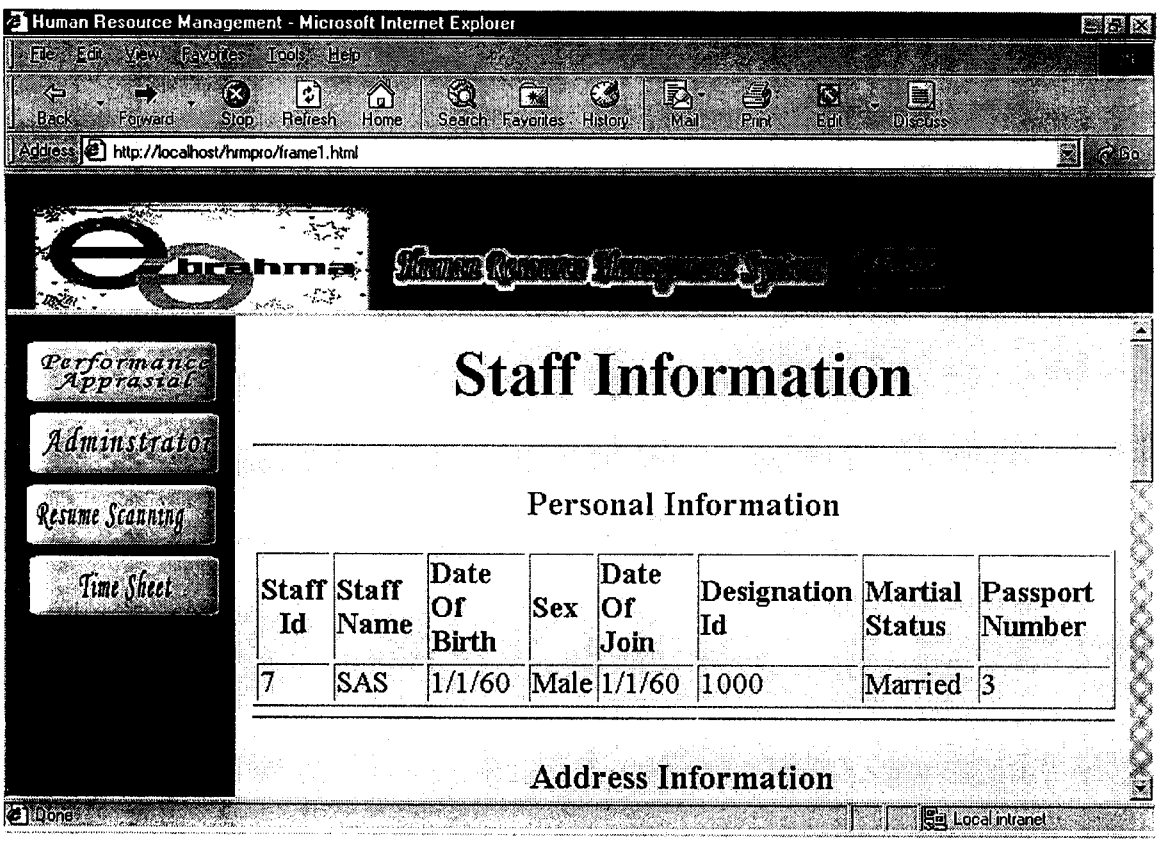
ADDING OVERALL STAFF INFORMATION



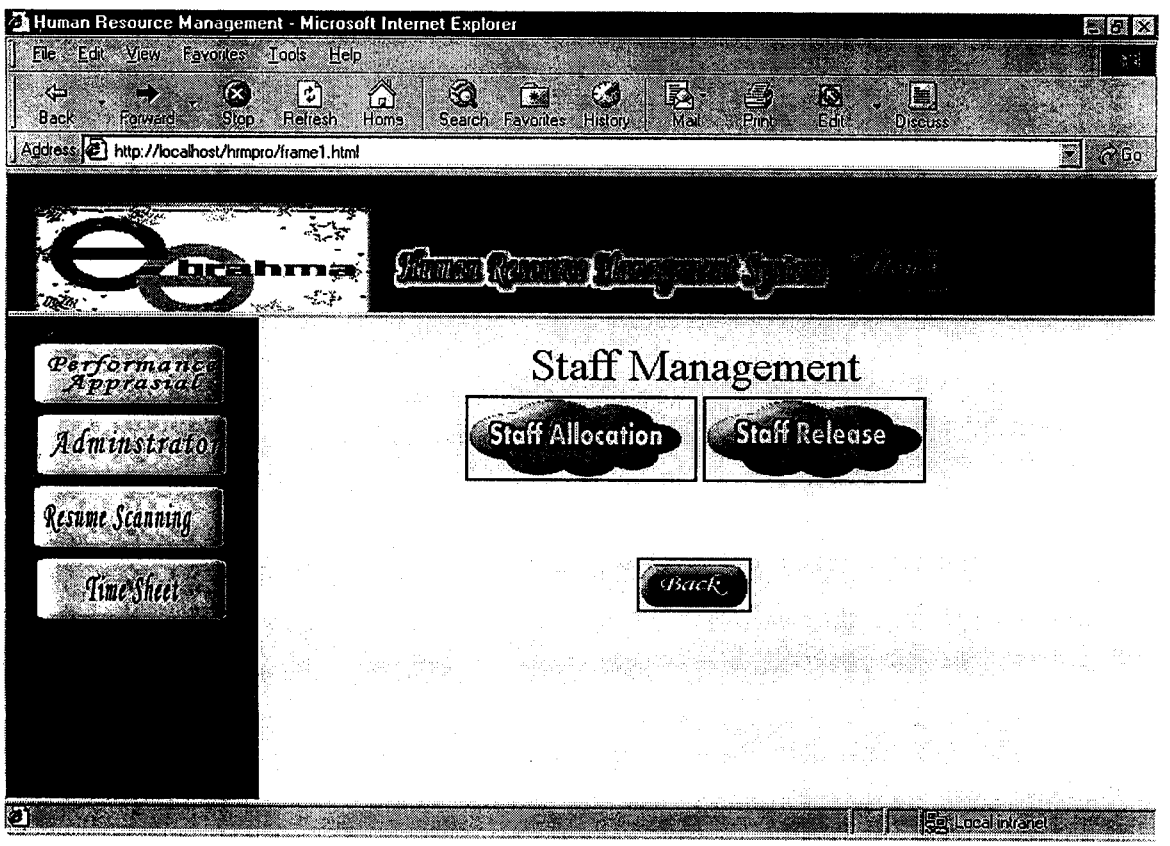
ADDING STAFF EDUCTIONAL INFORMATION



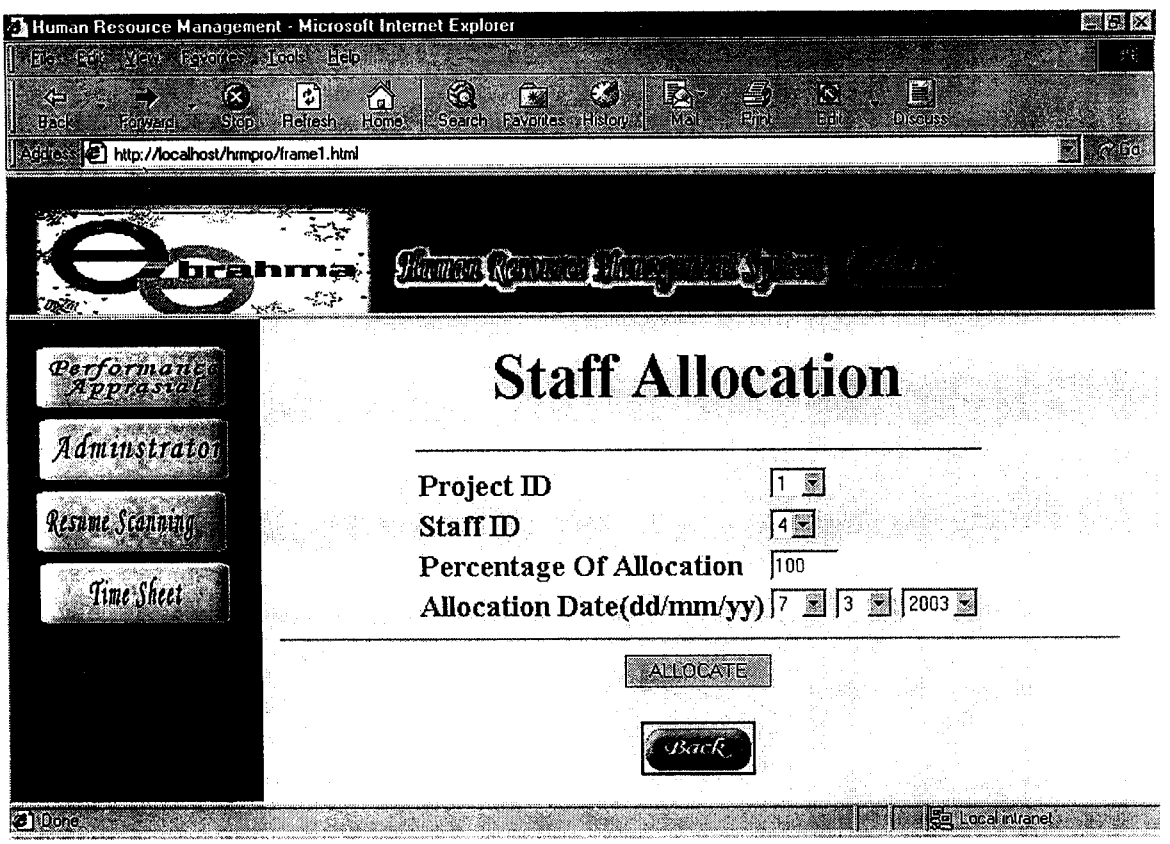
VIEWING OVERALL STAFF INFORMATION



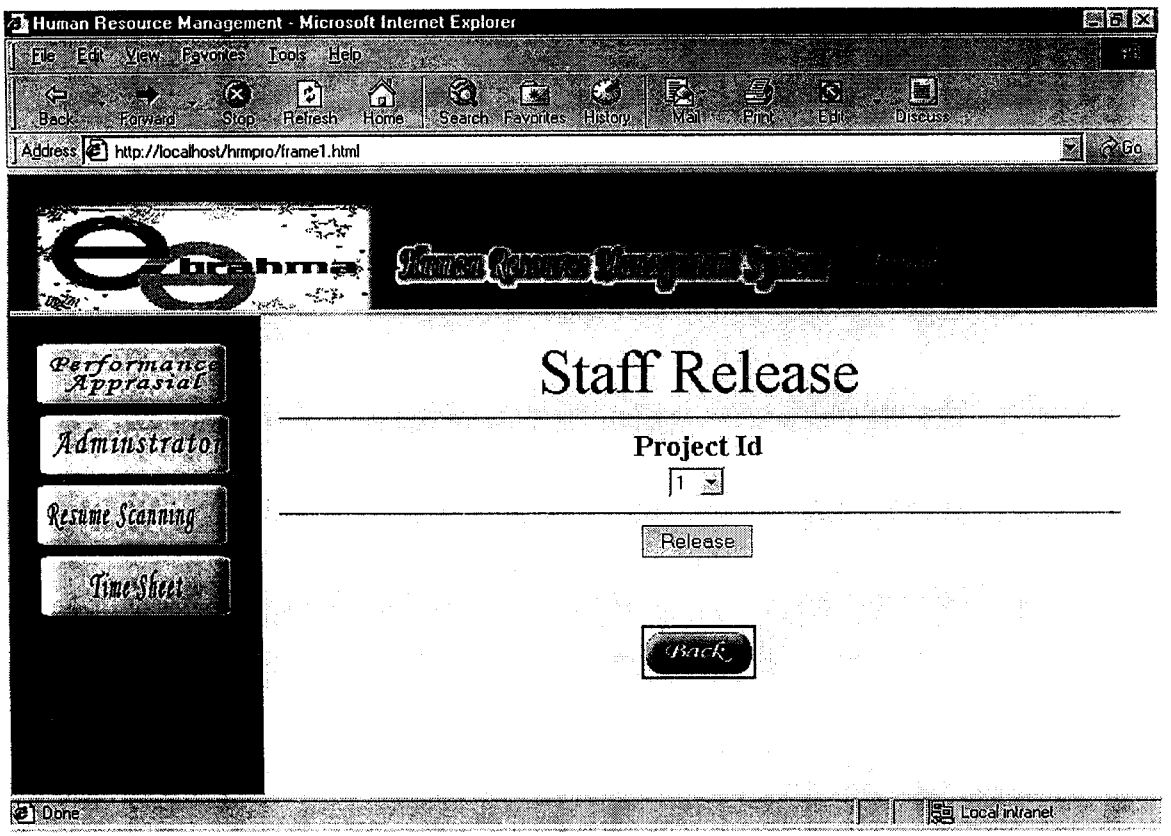
STAFF MANAGEMENT



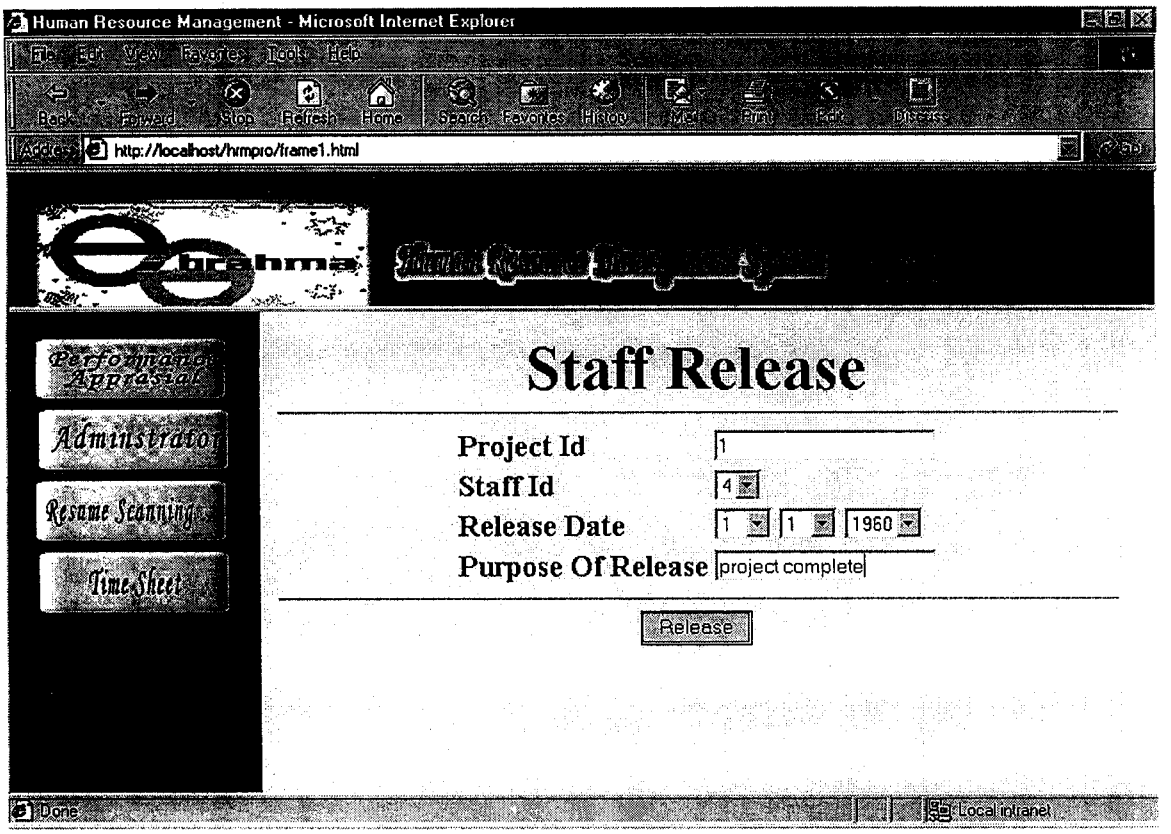
STAFF ALLOCATION



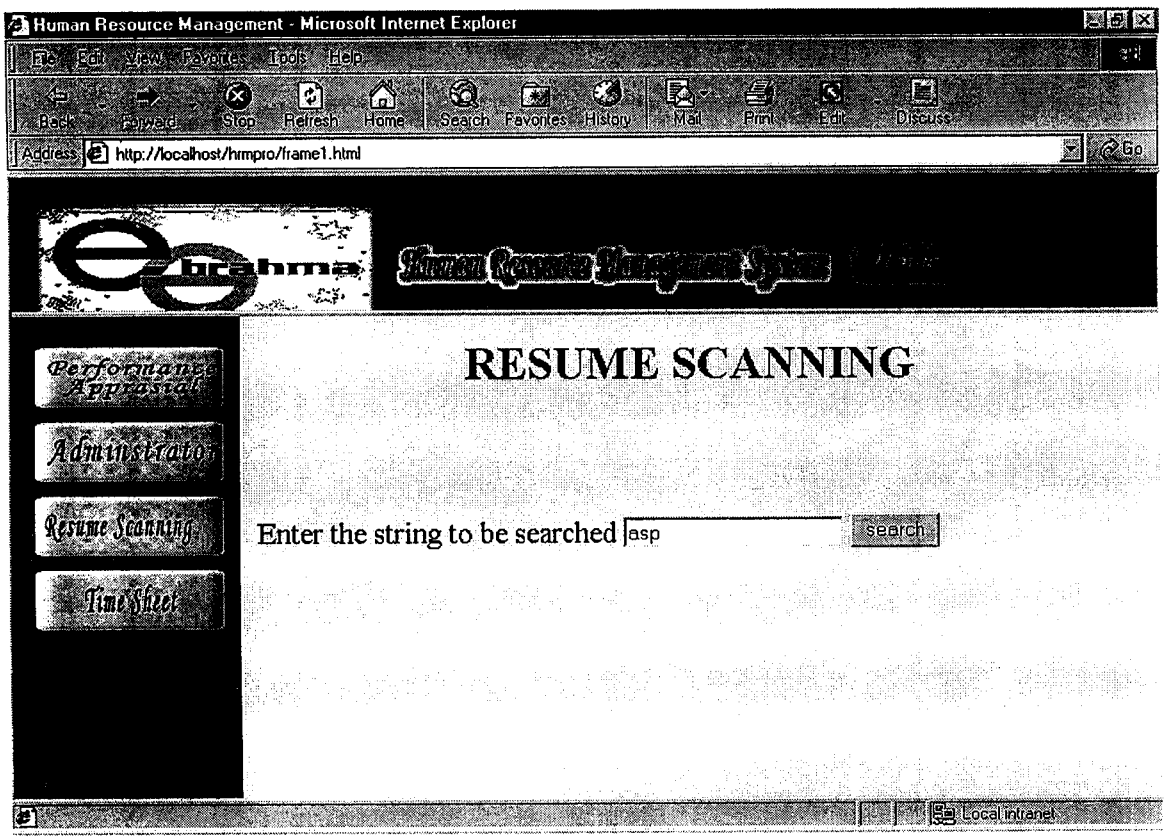
STAFF RELEASE



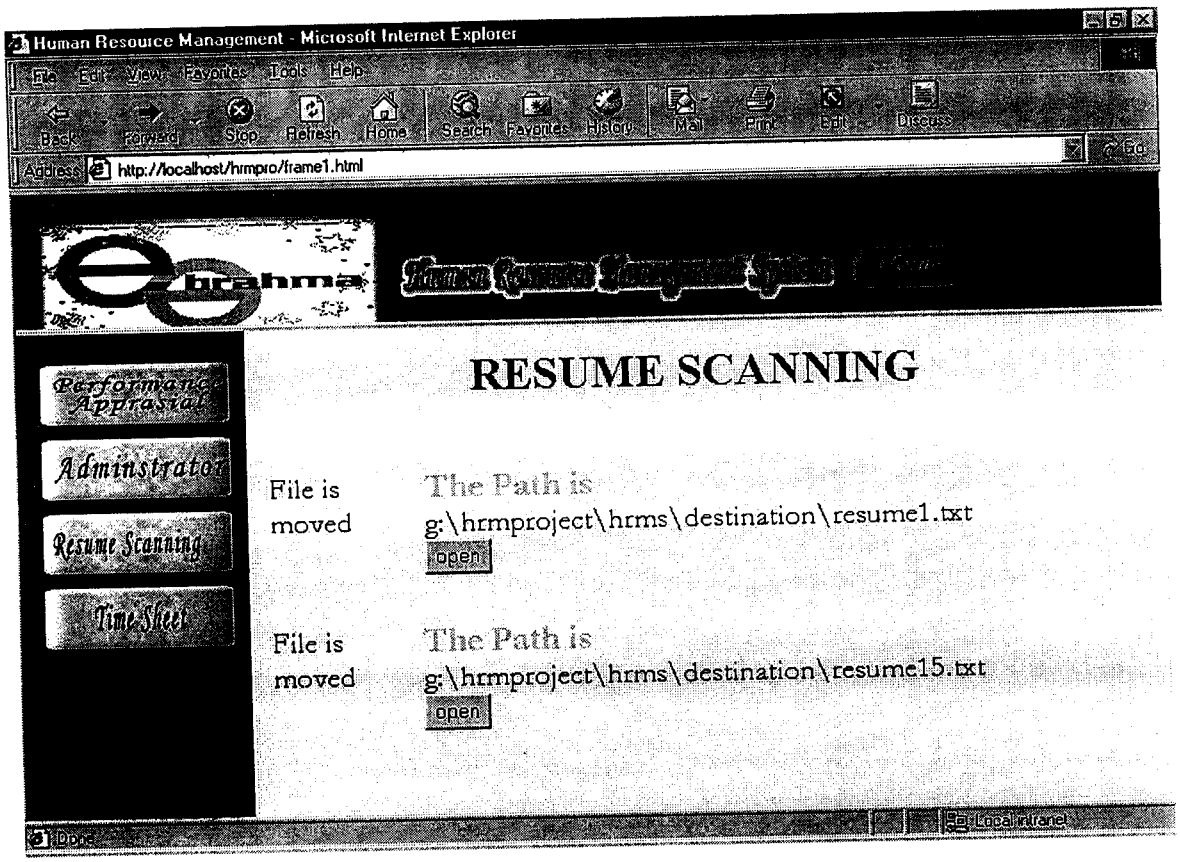
STAFF RELEASE



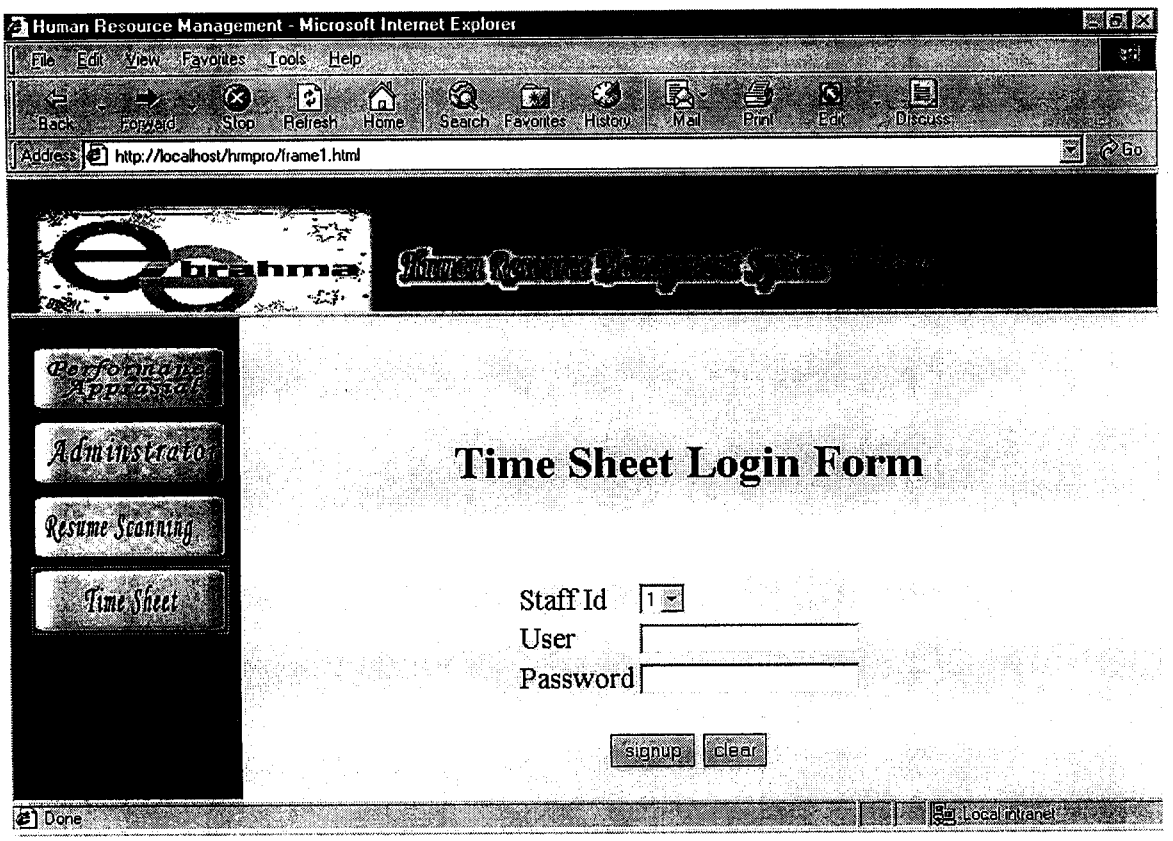
RESUME SCANNING



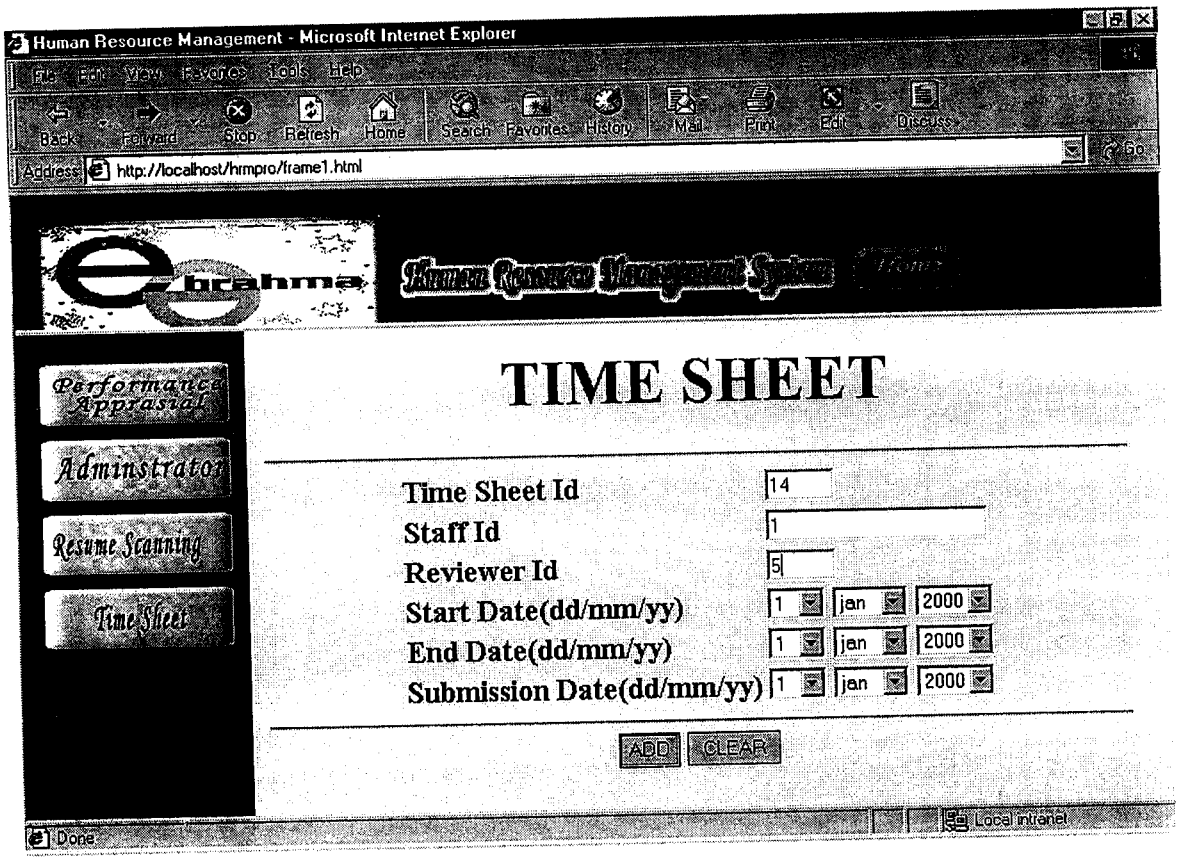
RESUME SCANNING



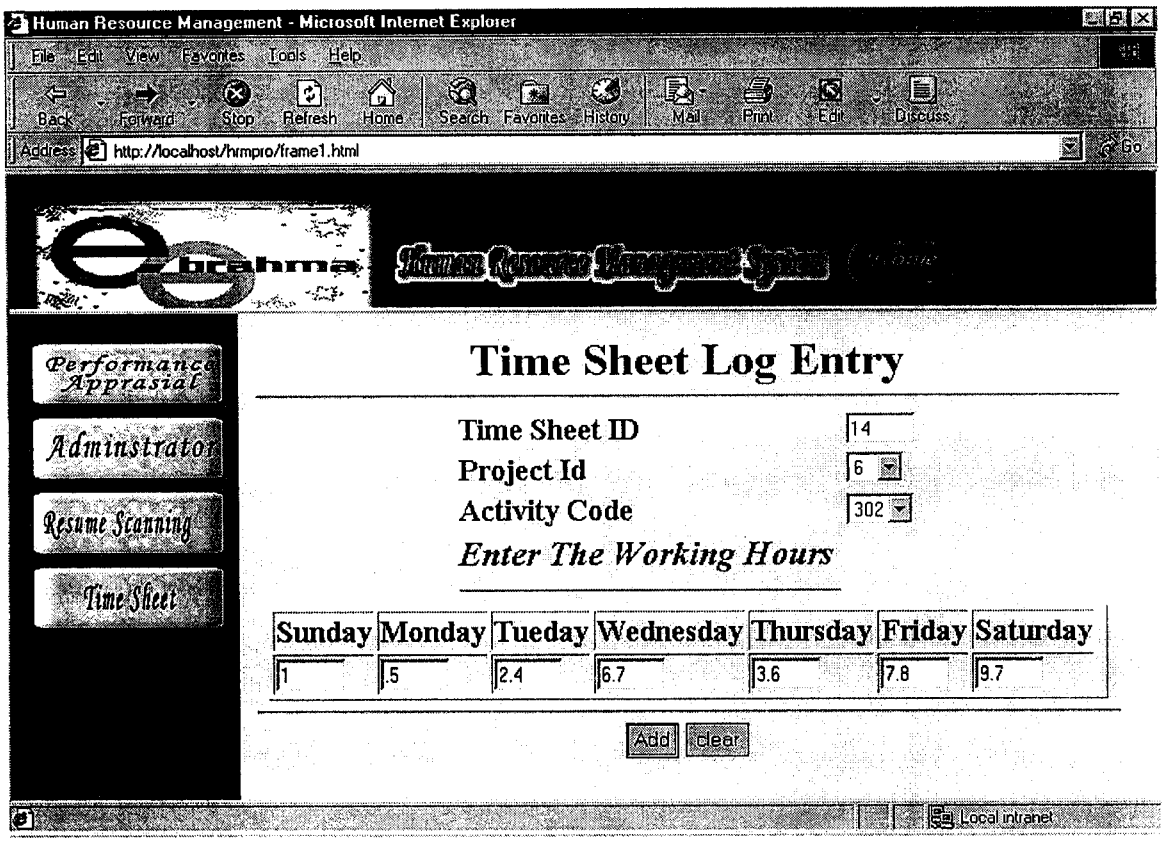
TIME SHEET LOGIN



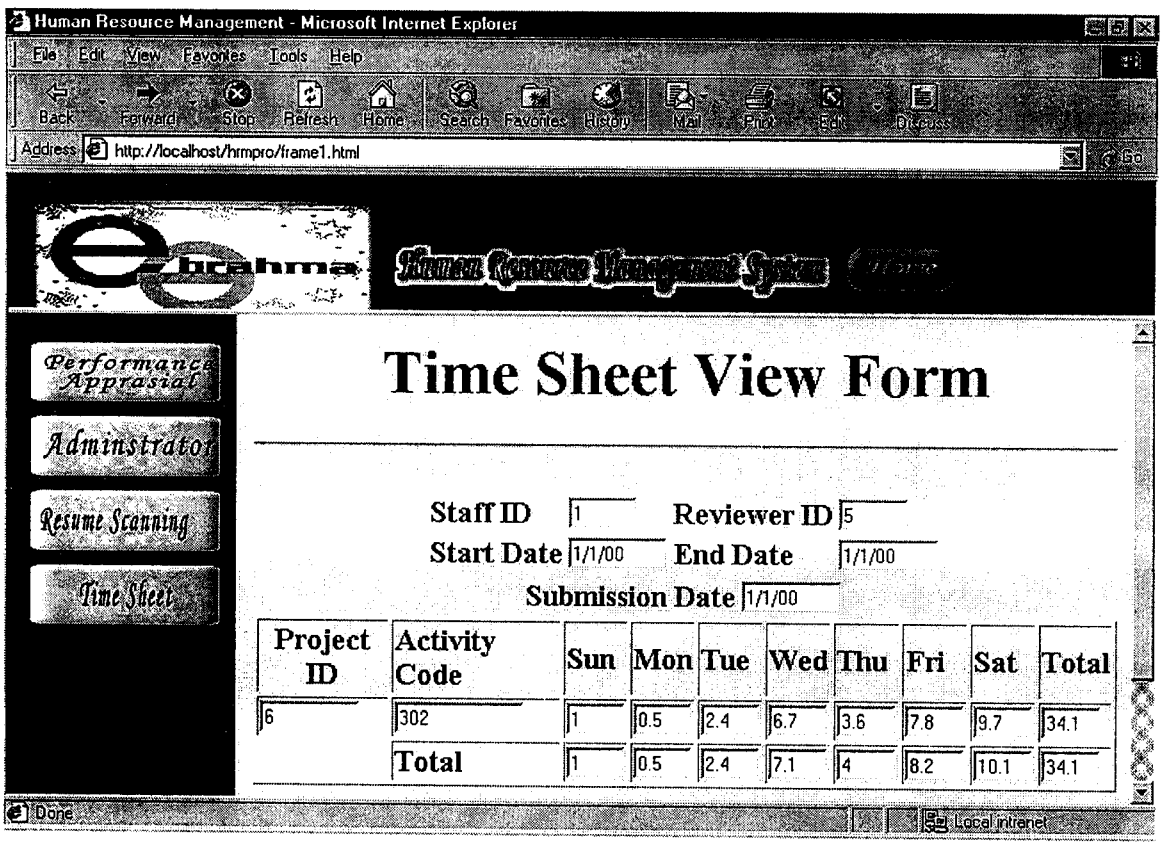
REVIEWING TIME SHEET DETAILS



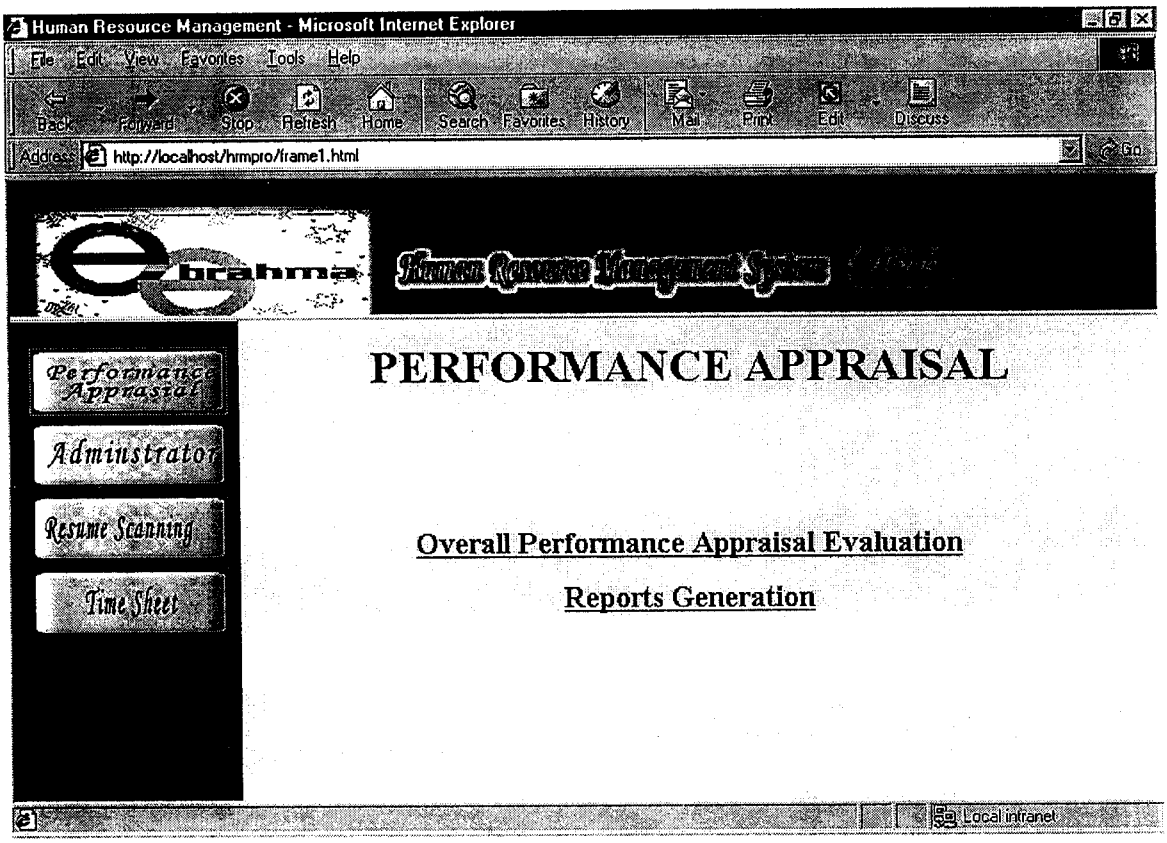
ENTERING TIME SHEET DETAILS



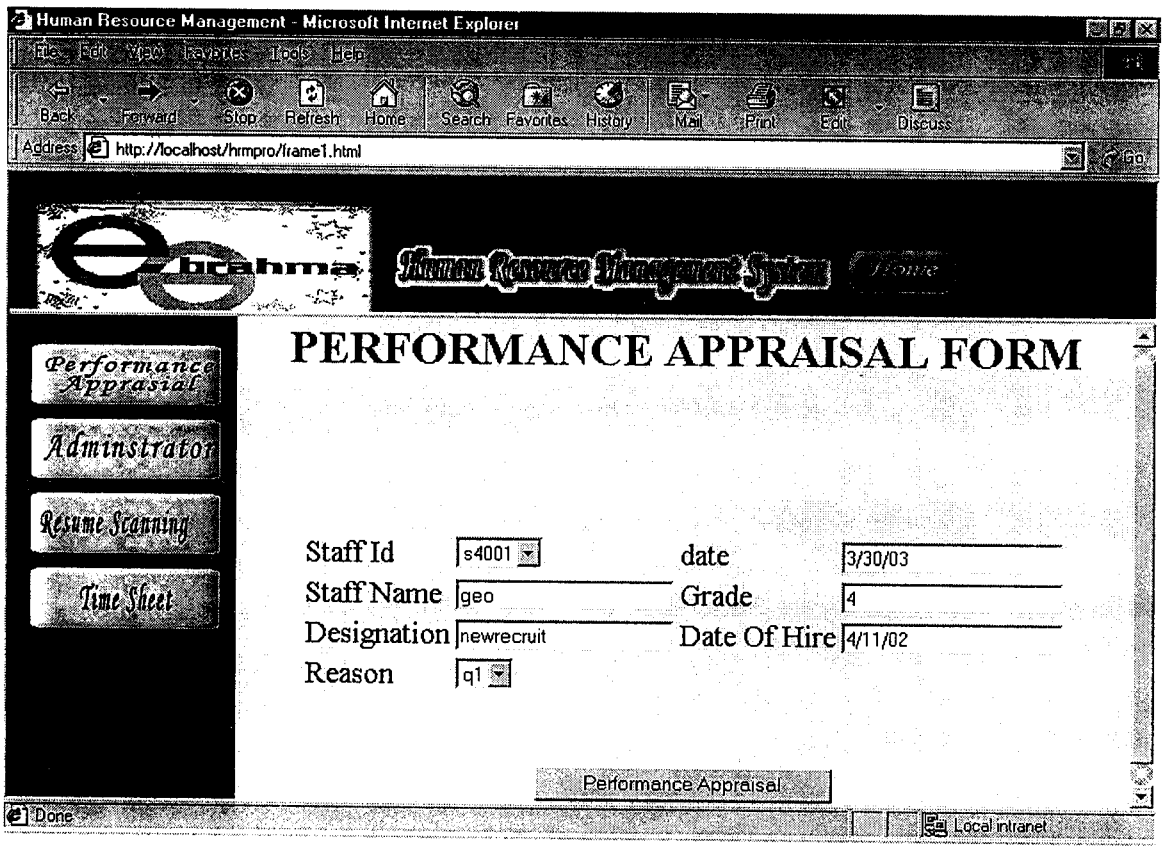
VIEWING TIME SHEET DETAILS



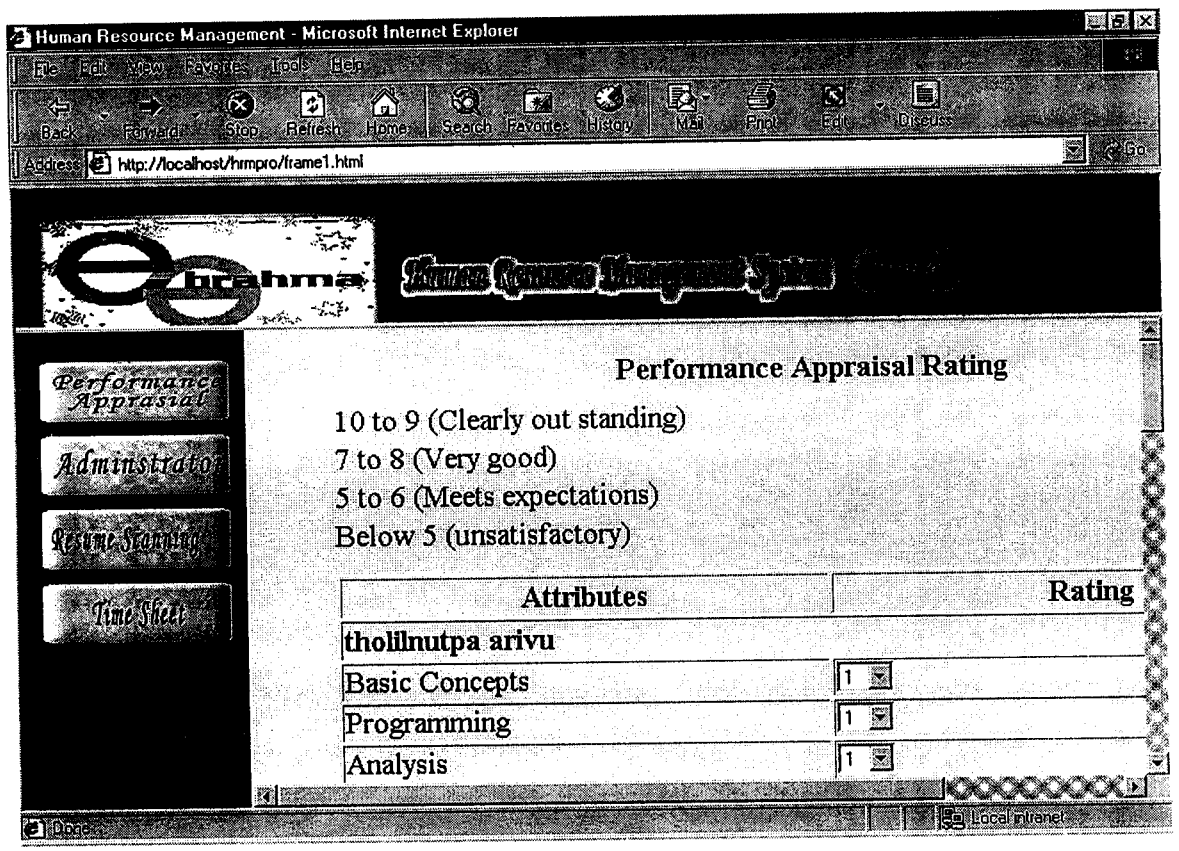
PERFORMANCE APPRASIAL



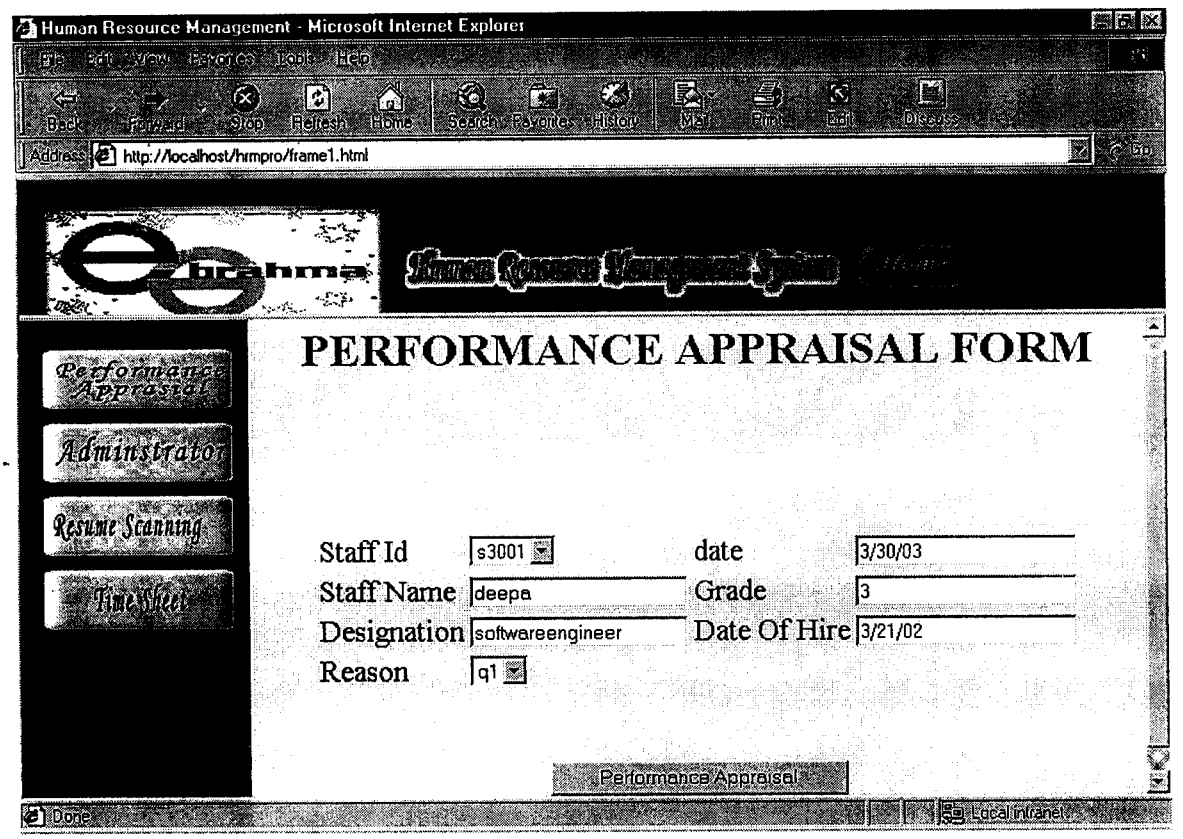
PERFORMANCE APPRAISAL – NEW RECRUITS



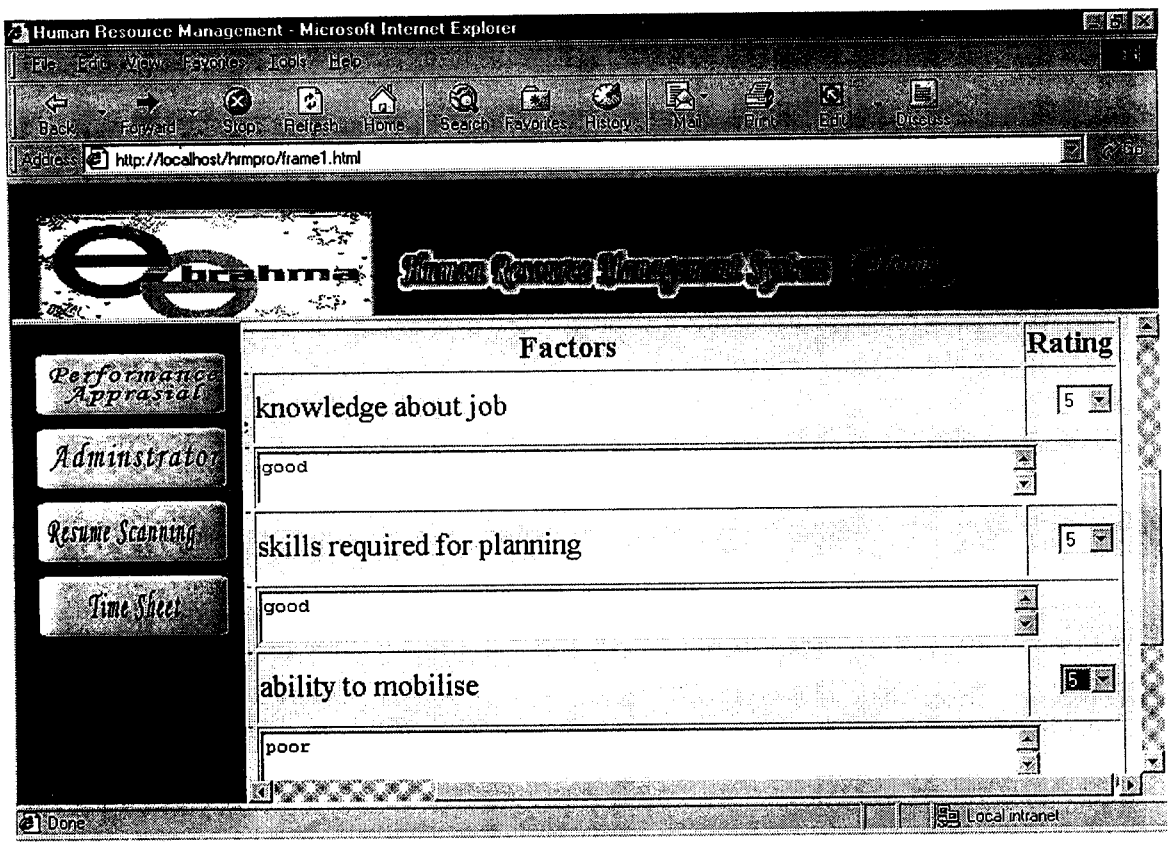
PERFORMANCE APPRASIAL RATING FOR NEW RECRUITS



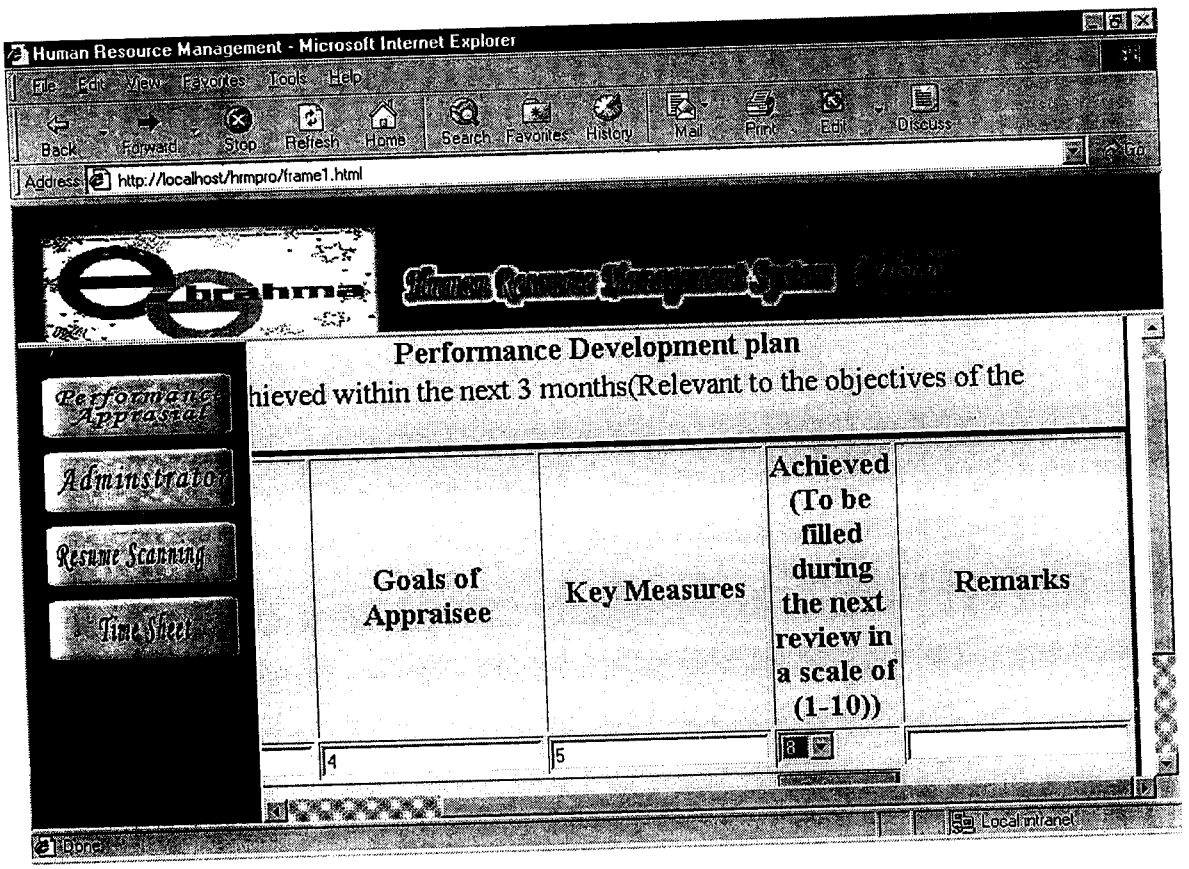
PERFORMANCE APPRAISAL FOR STAFF



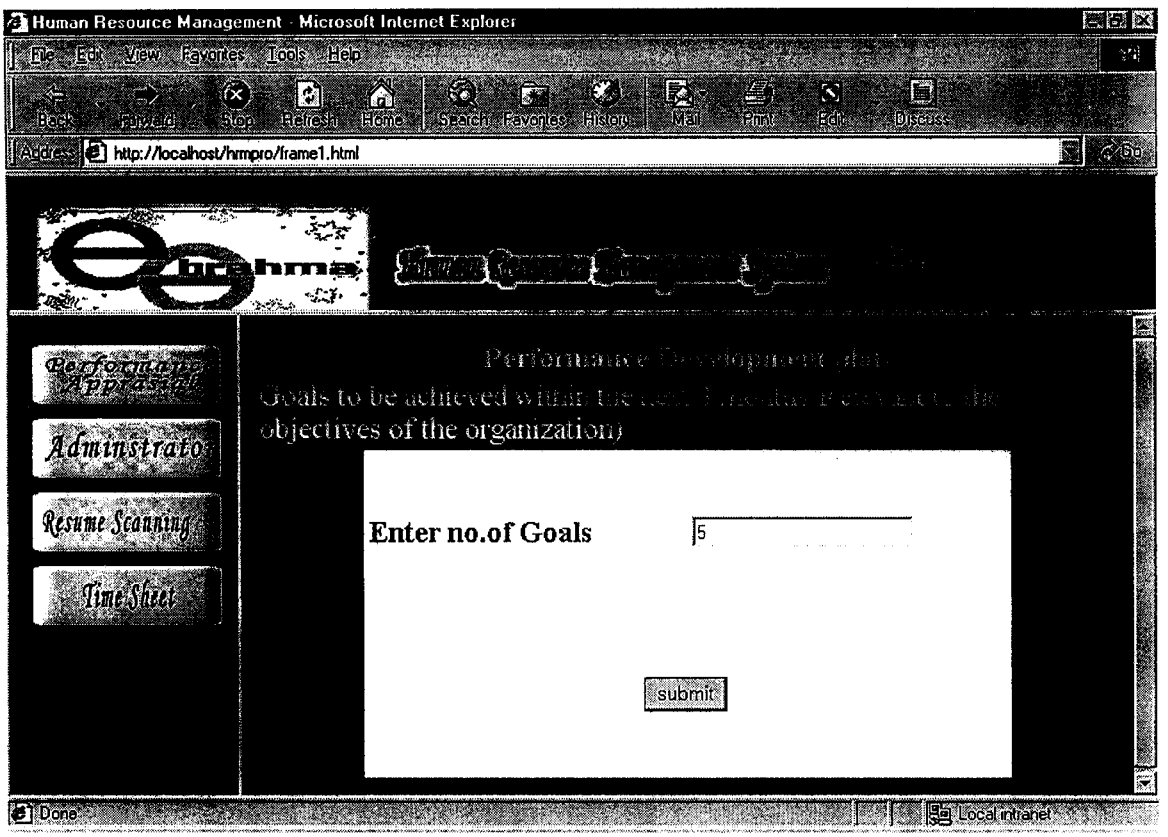
PERFORMANCE APPRAISAL STAFF FACTORS



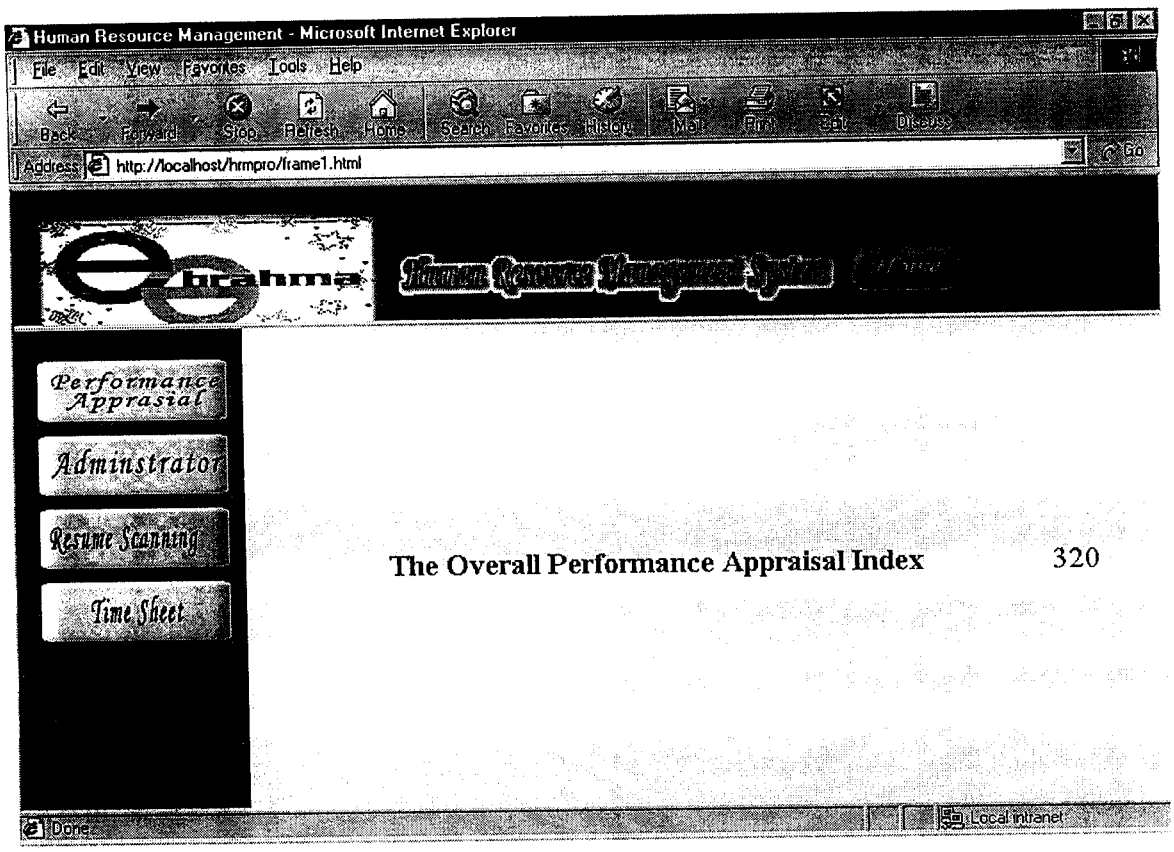
PERFORMANCE DEVELOPMENT PLAN



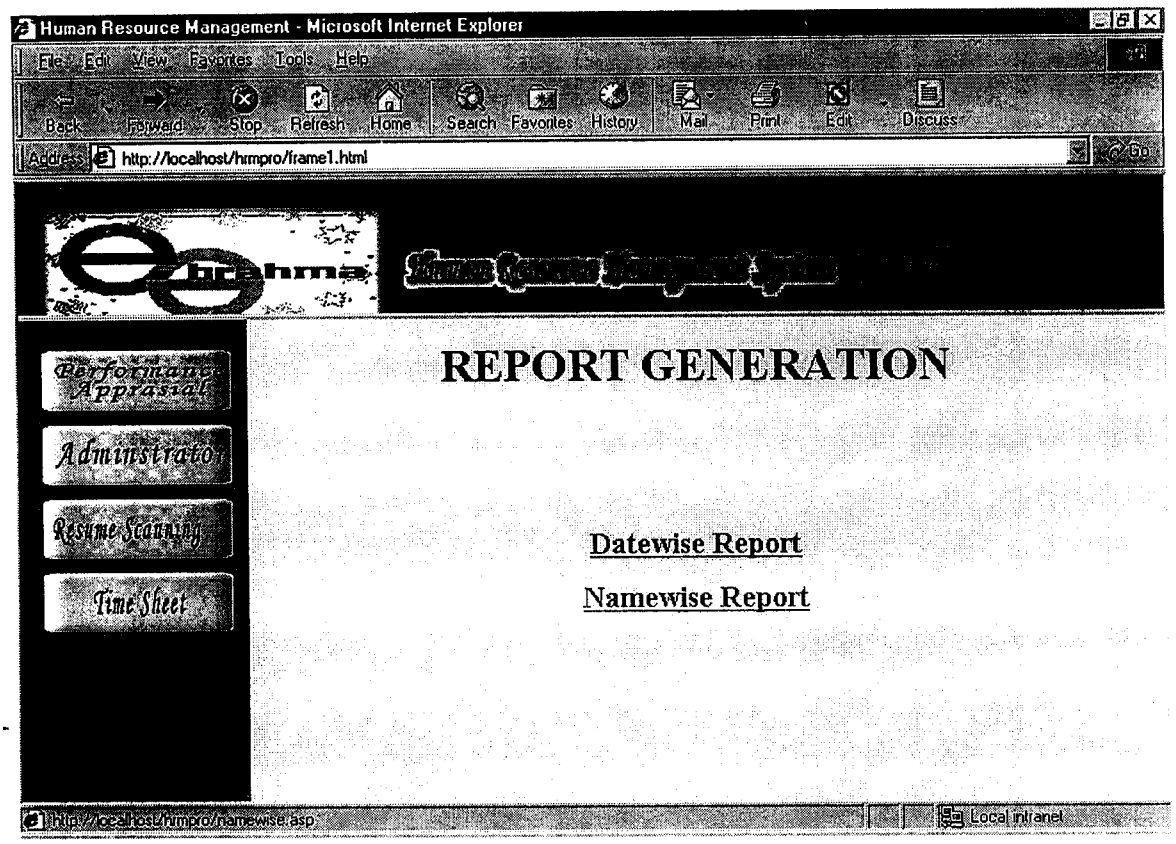
PERFORMANCE DEVELOPMENT PLAN- GOALS



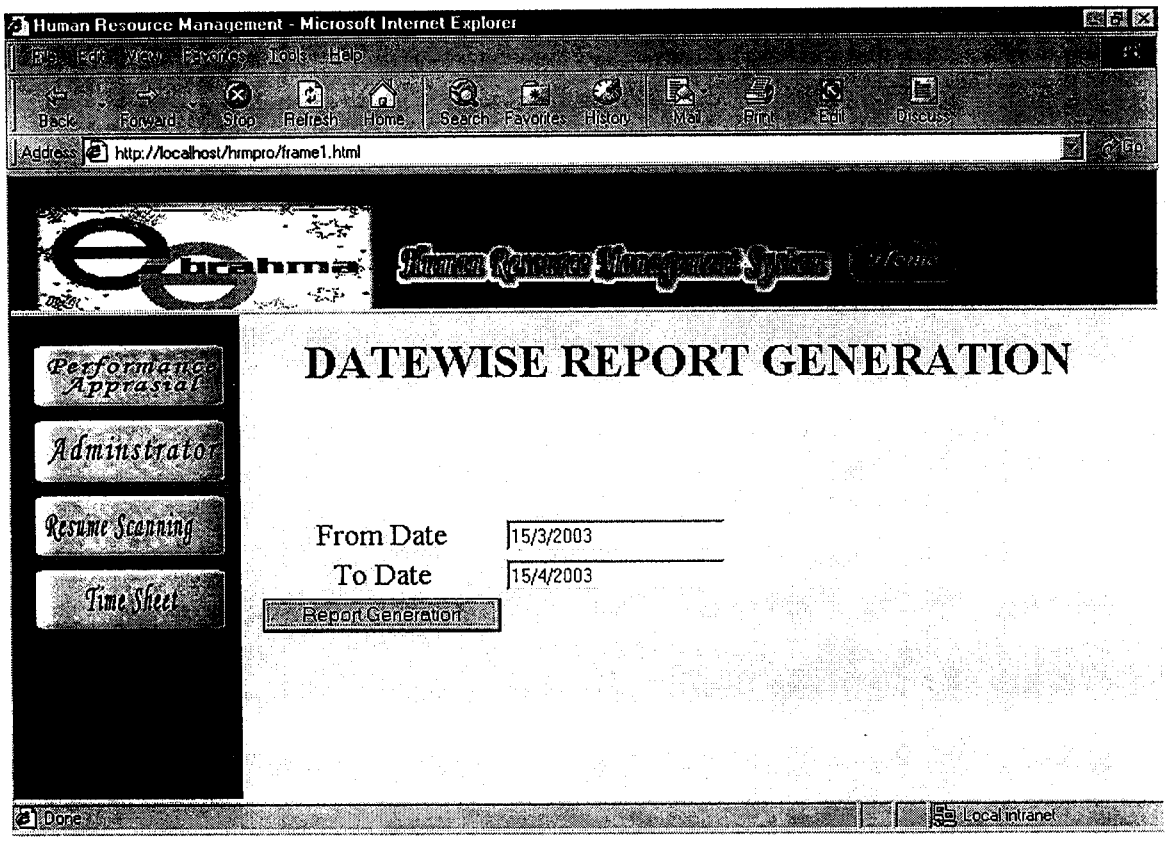
OVERALL PERFORMANCE APPRAISAL



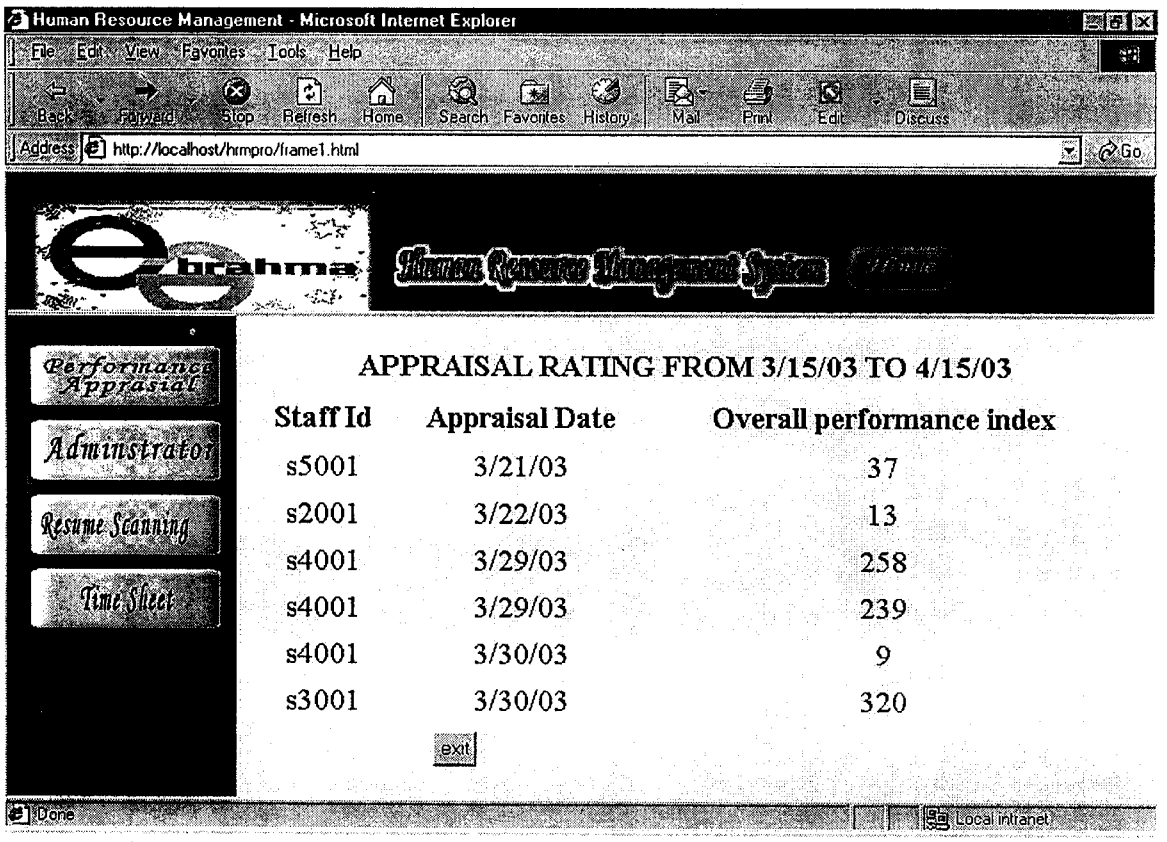
REPORT GENERATION



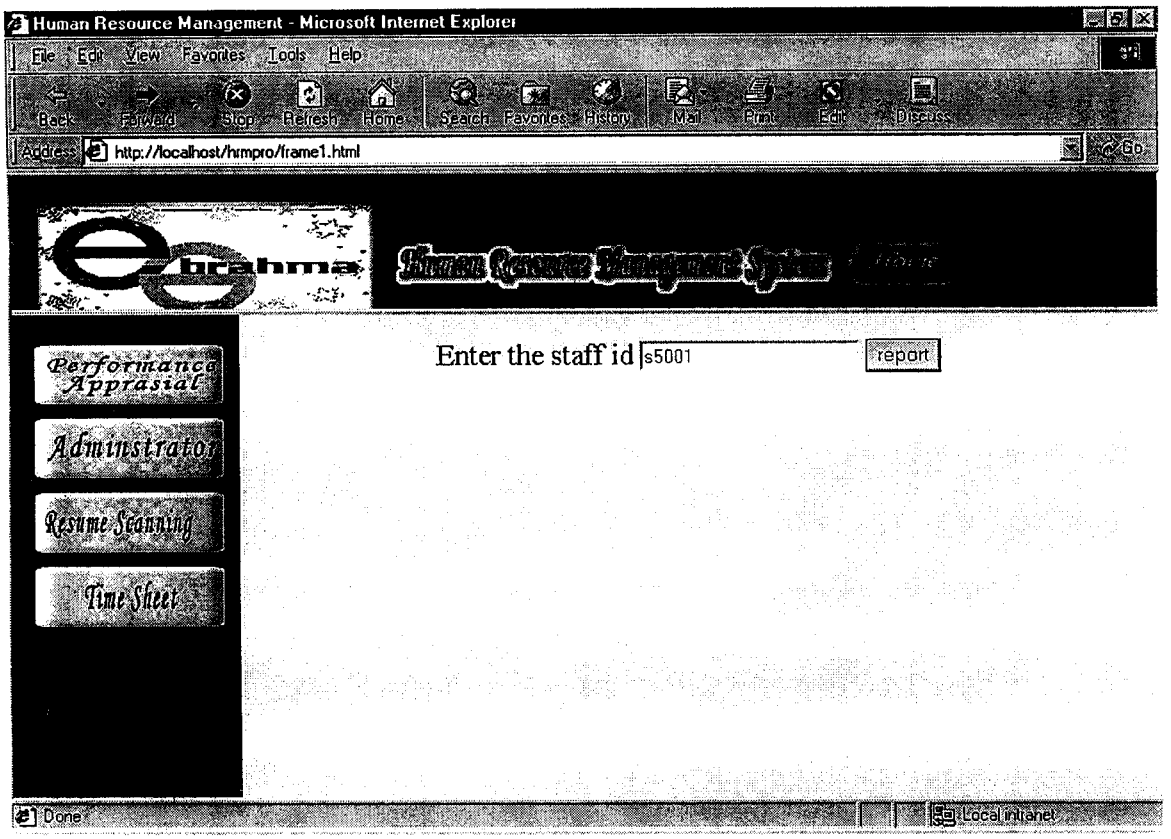
REPORT GENERATION – DATEWISE REPORT



REPORT GENERATION – DATEWISE REPORT



REPORT GENERATION – NAMEWISE REPORT



REPORT GENERATION – NAMEWISE REPORT