

HRMS E-COMPLY (STATUTORY COMPLIANCE)

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KUMARAGURU COLLEGE OF TECHNOLOGY**COIMBATORE-641006****BONAFIDE CERTIFICATE**

Certified that this project report titled “**HRMS E-COMPLY (STATUTORY COMPLIANCE)**” is the bonafide work of “**Mr. B.SIVAKUMAR**” (Registration Number: **71206621052**) who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


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Head of the Department

Submitted to Project and Viva Examination held on 06/07/08


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External Examiner

Date: 05-06-2009

CERTIFICATE

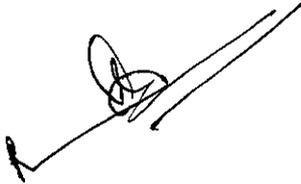
This is to certify that, **Mr. B.Sivakumar III rd M.C.A Reg No: 71206621052** Student of **Kumaraguru College of Technology,Coimbatore** has successfully completed his project work, titled **Human Resource Management System** as part of his course curriculum.

He has done the project using **Microsoft Visual Studio2005** during the period of **December'08 to June'09** under the guidance and supervision of **Mr.Surendar.K, Software Engineer, Infolink Software Solutions, Chennai.**

He has completed the assigned project well within the time frame. He is sincere, hardworking and his conduct during the project is commendable.

We wish him all the best in his future endeavors.

For Infolink Software Solutions.



Project Manager



Project Guide

ABSTRACT

HRMS E-COMPLY (STATUTORY COMPLIANCE)

Statutory meaning "of or related to statutes," or what we normally call laws or regulations. Compliance just means to comply with or adhere to. So statutory compliance meaning, following the laws on a given issue. Company following all the rules, is in statutory compliance. Many companies are out of statutory compliance because the cost of following the rule is too high, and/or the cost of maintaining registers and other records take too much of time.

All organization have to take up the compliance aspect very seriously as it involves employee benefits. Companies that come under the "Shops and Establishment Act", "Mines Act" or "Factories Act" need to have their statutory compliance updated as specified by the Government. All registers and forms need to be updated and available for inspection by the local body as and when required.

Penalties (Bank interest rates) are charged from the date of incorporation by the authorities unwarranted issue of delisting may be avoided .Non payment of fines could end up in the closure of any organization or even worse PF / ESI is the right of an employee.

It is for the Government to assess and understand if the employee / contractor are actually covered under compliances. In case of any discrepancies, the forms and register would act as legal documents for both the employee and employer. Hire people on payroll to take care of the compliances. Outsource the compliance to a 3rd party to complete the task on behalf of the company.

Candidates can be hired either on contract or permanent basis for completing of records. Compliance executive may not be available at the time of updating records for various reasons. More than one executive is required (if not a team) to fulfill the operation and cost of hiring and maintenance is high.

What is E-comply?

E-comply is for organizations that needs a tool which supports from “Recruitment to Retirement”. Complete automation meaning information is available to all concerned as against a department. All employees are covered including contractors and consultants. No manual entries needed. So work is completed faster (no manual keying necessary). Available resource can focus on other important work / task. In-built HRMS suite comes with no additional cost.

Modules

- Employee Management
- Payroll Management
- Project allocation system

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TABLE OF CONTENTS

CHAPTER NO	TITLE	PAGE NO
	ABSTRACT	iii
	LIST OF TABLES	viii
	LIST OF FIGURES	ix
	LIST OF ABBREVIATIONS	ix
1	INTRODUCTION	
	1.1 SYSTEM OVERVIEW	1
	1.2 COMPANY PROFILE	2
2	SYSTEM STUDY AND ANALYSIS	
	2.1 PROBLEM STATEMENT	4
	2.2 EXISTING SYSTEM	4
	2.2.1 DRAWBACKS OF THE EXISTING SYSTEM	4
	2.3 PROPOSED SYSTEM	5
	2.3.1 ADVANTAGE OF THE PROPOSED SYSTEM	5
	2.4 FEASIBILITY ANALYSIS	5
	2.4.1 TECHNICAL FEASIBILITY	5
	2.4.2 ECONOMICAL FEASIBILITY	6
3	DEVELOPMENT ENVIRONMENT	
	3.1 HARDWARE REQUIREMENTS	7
	3.2 SOFTWARE REQUIREMENTS	7
	3.3 PROGRAMMING ENVIRONMENT	7
	3.3.1 THE .NET FRAMEWORK	7
	3.3.2 SQL SERVER	10

	4.1 ELEMENTS OF DESIGN	11
	4.1.1 MODULAR DESIGN	11
	4.1.2 INPUT DESIGN	13
	4.1.3 OUTPUT DESIGN	14
	4.1.4 DATABASE DESIGN	15
	4.2 TABLE STRUCTURE	15
	4.3 ENTITY RELATIONSHIP DIAGRAM	24
	4.4 USECASE DIAGRAM	25
5	SYSTEM TESTING AND IMPLEMENTATION	
	5.1 TESTING	29
	5.1.1 UNIT TESTING	29
	5.1.2 SYSTEM TESTING	29
	5.1.3 USER ACCEPTANCE TESTING	30
	5.1.4 INTEGRATION TESTING	30
	5.1.5 FUNCTIONAL TESTING	30
	5.1.6 VALIDATION TESTING	30
	5.2 SYSTEM SECURITY	32
	5.3 SYSTEM IMPLEMENTATION	32
6	CONCLUSION AND FURTHER ENHANCEMENT	
	6.1 CONCLUSION	33
	6.2 FURTHER ENHANCEMENT	33
	APPENDIX SCREEN SHOTS	34
	REFERENCES	51

LIST OF TABLES

TABLE NO	TITLE	PAGE NO
4.2.1	DEPARTMENT_MASTER	15
4.2.2	GRADE_MASTER	16
4.2.3	DESIGNATION_MASTER	16
4.2.4	SALARY_MASTER	16
4.2.5	LEAVE_MASTER	17
4.2.6	HOLIDAY_MASTER	17
4.2.7	EMPLOYEE_PERSONAL_DETAILS	18
4.2.8	EMPLOYEE_SALARY_DETAILS	18
4.2.9	EMPLOYEE_ADDRESS_DETAILS	19
4.2.10	TIME_SHEET	20
4.2.11	APPLY_LEAVE	20
4.2.12	CONTRACT_EMP_DETAILS	21
4.2.13	USER_ACCOUNT	21
4.2.14	PROJECT_MASTER	22
4.2.15	PROGRAMMER_ALLOCATION	22
4.2.16	STATUS_OF_PL	23
4.2.17	STATUS_OF_PROGRAMMER	23

LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
4.3.1	E-R DIAGRAM FOR WHOLE SYSTEM	24
4.4.1	USECASE DIAGRAM FOR ADMINISTRATOR VS PROJECT MANAGER	25
4.4.2	USECASE DIAGRAM FOR PROJECT MANAGER VS EMPLOYEE	26
4.4.3	USECASE DIAGRAM FOR EMPLOYEE VS PROJECT MANAGER	27
4.4.4	USECASE DIAGRAM FOR PROJECT MANAGER	28

LIST OF ABBREVIATIONS

PF	PROVIDENT FUND
ESI	EMPLOYEE STATE INSURANCE
TDS	TAX DEDUCTION SERVICE
HRA	HOME RENT ALLOWANCE
LOP	LOSS OF PAY

CHAPTER 1

INTRODUCTION

1.1 SYSTEM OVERVIEW

The project titled “**HRMS E-COMPLY (STATUTORY COMPLIANCE)**” offers total solution to the various employee related requirements of the organization.

HRMS E-COMPLY (STATUTORY COMPLIANCE) which involved a lot of information such as permanent employee details, contract employee details, project details, project allocation system, granting leave for employees, handling issues raised and moreover the process involved was quite a repetitive one and was prone to numerous errors which could result in inappropriate data being presented to the top management.

All organization have to take up the compliance aspect very seriously as it involves employee benefits. Companies that come under the “Shops and Establishment Act”, “Mines Act” or “Factories Act” need to have their statutory compliance updated as specified by the Government. All registers and forms need to be updated and available for inspection by the local body as and when required.

Automation is the key to increase efficiency, performance and reliability in any system and is being rapidly followed in all walks of life. The problem with the traditional approach of statutory compliance is manual nature of the work. There is always the possibility of wastage of time and very hard to maintain the registers.

Complete automation meaning information is available to all concerned as against a department. All employees are covered including contractors and consultants. No manual entries needed. So work is completed faster (no manual keying necessary). Available resource can focus on other important work / task. In-built HRMS suite comes with no additional cost.

1.2 COMPANY PROFILE

Infolink Software Solutions is a provider of information technology services, founded by experienced software professionals with business knowledge and technical expertise. Our ideas and products have resulted in technology-intensive transformations that meet's the most stringent international quality standards.

We are geared to offer a broad range of IT services, ranging from advising clients on strategic technology plans to developing and implementing IT applications, Embedded Technology, network and network-enabled services.

Infolink's range of consulting and IT skills has helped business to re-engineer and re-invent their products, services and processes to complete successfully in emerging market. We also provide a broad range of solutions for HR department to cover every aspect employee information, payroll, appraisals, training, work prerequisites, recruitment and lot more.

At **Infolink**, we apply technology with innovation and responsibility to achieve two broad objectives:

- Effectively address the business issues of our customers face today.
- Generate new opportunities that will help them stay ahead in the future.

Infolink main goal is to be responsive, provide quality and cost effective solution in turn achieve maximum customer satisfaction and values has been rewarded with a high percentage of repeat business and steady growth in new customer accounts. The bulk of our business is aimed towards customized software, which is largely to be developed for both on and offshore with expert team.

We are able to offer our clients comprehensively cutting edge solutions, its commitment to quality process and products. The company's core values emphasize a strong belief in people, the pursuit of excellence, entrepreneurship and a customer orientation.

Infolink creates an environment which includes:

- Exposure to cutting edge technologies.
- An informal non-bureaucratic culture.
- Flexibility to balance work and personal life.
- Talented people to work with.
- Excellent Corporation and Advanced opportunities.
- Consulting.

CHAPTER 2

SYSTEM STUDY AND ANALYSIS

2.1 PROBLEM STATEMENT

Penalties (Bank interest rates) are charged from the date of incorporation by the government authorities. More than one executive is required (if not a team) to fulfill the operation and cost of hiring and maintenance is high.

2.2 EXISTING SYSTEM

The details of permanent employee and contract employee, experience and their personal information are logged into excel sheets manually. These are then consolidated into various reports which are sent to the top management for review.

Hire people on payroll to take care of the compliances. Outsource the compliance to third party to complete the task behalf of the company. Compliance executive may not be available at the time of updating records for various reasons.

2.2.1 DRAWBACKS OF THE EXISTING SYSTEM

The drawbacks of the existing system can be summarized as below:

- Time Consuming.
- Wastage of Human resources.
- Lot of work to do with registers.
- Lack of Security and Data redundancy.

2.3 PROPOSED SYSTEM

The proposed system would automate all of the manual processes described which would help reduce the overhead incurred by the team leads and managers and make the whole process simple and efficient. The new system will be maintaining the statutory compliance easily.

The proposed system will have computerized data entry screens and processes can be carried out based on inputs from those screens. The proposed system has been designed to eliminate the major disadvantage of the existing system.

2.3.1 ADVANTAGES OF THE PROPOSED SYSTEM

The expected benefits of the proposed system are as follows:

- Easy to use and simple.
- All employees are covered including contractors.
- Flexible and Scalable.
- No manual entry needed.
- Data available on demand.
- Retrieval of data will be much simpler.

2.4 FEASIBILITY ANALYSIS

Feasibility analysis is the measure of how beneficial or practical the development of the System will be to the project. Once the problem is explained information is gathered about the system to test whether the system is viable Technically, Financially and Operationally. Thus, feasibility study is carried out in three phases as follows:

2.4.1 TECHNICAL FEASIBILITY

Technical Feasibility is the measure of practicality of a specific technical solution and the availability of technical resources and expertise. It centers on the existing computer system (hardware, software, etc.) and to what extent it can support the new addition. This involves financial consideration to accommodate technical enhancement.

The proposed system is to be developed using ASP.net 2005 and SQL SERVER 2000 which are some of the leading technologies in the market. Visual studio .NET 2005 and SQL SERVER 2000 are already available with the company. These technologies work well on Microsoft platforms. When take the project size, it's very small.

2.4.2 ECONOMIC FEASIBILITY

Economic Feasibility is the measure of the cost-effectiveness of the proposed system. The investment to be made in the proposed system must prove a good investment to the project by returning benefits equal to or exceeding the costs incurred in developing the system.

The proposed benefits of the system will outweigh the costs to be incurred during system developed since the system does not require procurement of additional hardware facilities. It is economically feasible. It uses ASP.Net 2005 and SQL Server 2000 for its development. So it is found that the benefits outweigh costs.

CHAPTER 3

DEVELOPMENT ENVIRONMENT

3.1 HARDWARE REQUIREMENTS

The hardware support required for deploying the application

Processor	: Intel Pentium IV Processor
Memory	: Minimum 512MB
Hard Disc	: 40GB or More
Monitor	: LG 563A (color)
Mouse	: Logitech
Keyboard	: Logitech
CDROM	: 52X-MAX
Printer	: Inkjet Printer

3.2 SOFTWARE REQUIREMENTS

The software support required for deploying the application

Operating System	: Windows XP
Front End Tool	: ASP.NET 2005
Back End Tool	: SQL SERVER 2000
Web Server	: IIS
Markup Language	: HTML
Web Browser	: Microsoft IE 6, Mozilla Firefox

3.3 PROGRAMMING ENVIRONMENT

3.3.1 THE .NET FRAMEWORK

The .NET frame work is a new computing platform that simplifies application development in the highly distributed environment of the internet. To avoid separate runtime environment called the Common Language Runtime (CLR).

OBJECTIVES OF .NET FRAMEWORK

- To provide a consistent Object-oriented programming environment whether object codes is stored and executed locally and internet distributed, or executed remotely.
- To provide a code-execution environment to minimizes software deployment and guarantees safe execution of code.
- Eliminates the performance problems.
- There are different types of application, such as windows-based application and web-based applications.
- To make communication on distributed environment to ensure that code be accessed by the .NET Framework can integrate with any other code.

COMPONENTS OF .NET FRAMEWORK

THE COMMON LANGUAGE RUN TIME (CLR)

The common language runtime is the foundation of the .NET Framework. It manages code at execution time, providing important services such as memory management, and remoting and also ensures more security and robustness. The concept of code management is a fundamental principle of the runtime code that targets the runtime is known as managed code, while code that does not target the runtime is known as unmanaged code.

THE .NET FRAMEWORK CLASS LIBRARY

It is a comprehensive, object-oriented collection of reusable type used to develop applications ranging from traditional command-line or graphical user interface (GUI) applications to applications based on the latest innovations provided by ASP.NET, such as Web Forms and XML Web services.

The .NET Framework can be hosted by unmanaged components that load the common language runtime into their processes and initiate the execution of managed code, thereby creating a software environment that can exploit both managed and unmanaged features. The .NET Framework not only provides several runtime hosts, but also supports the development of third-party runtime hosts.

ASP.NET 2005

ASP.NET is the next version of Active Server Pages (ASP); it is a unified web development platform that provides the services for developers to build enterprise-class web applications. While ASP.NET is largely syntax compatible, it also provides a new programming model and infrastructure for more secure, scalable, and stable applications.

ASP.NET is a compiled, .NET-based environment; we can author applications in any .NET compatible language, including Visual Basic .NET, C#, and Jscript.Net. Additionally, the entire .NET Framework is available to any ASP.NET application. Developers can easily access the benefits of these technologies, which include the managed common language runtime environment, type safety, inheritance, and so on.

ASP.NET has been designed to work seamlessly with WYSIWYG HTML editors and other programming tools, including Microsoft Visual Studio .NET. Not only does this make Web development easier, but it also provides all the benefits that these tools have to offer, including a GUI that developers can use to drop server controls onto a web page and fully integrated debugging support.

Web Forms allows us to build powerful forms-based Web pages. When building these pages, we can use ASP.NET server controls to create common UI elements, and program them for common tasks. These controls allow us to rapidly build a Web Form out of reusable built-in or custom components, simplifying the code of a page.

ASP.NET takes advantage of performance enhancements found in the .NET Framework and common language runtime. Additionally, it has been designed to offer significant performance improvements over ASP and other Web development platforms.

All ASP.NET code is compiled, rather than interpreted, which allows early binding, strong typing, and just-in-time(JIT) compilation to native code, to name only a few of its benefits. ASP.NET is also easily factorable, meaning that developers can remove modules (a session module, for instance) that are not relevant to the application they are developing.

3.3.2 SQL SERVER

MICROSOFT SQL SERVER 2000

It is a relational database management system (RDBMS) produced by Microsoft. Its primary query language is Transact-SQL, an implementation of the ANSI/ISO standard Structured Query Language (SQL) used by both Microsoft and Sybase.

Data can be defined and manipulated in a table with SQL statements. SQL's data definition language (DDL) statements are used to define data. DDL statements include statements for creating and altering databases and tables.

Update, delete, or retrieve a data in a table are done by SQL's data manipulation language (DML). DML statements include statements to alter and fetch data. The most common SQL statement is the SELECT statement, which retrieves data from the database.

DATA DEFINITION LANGUAGE (DDL) STATEMENTS:

Data definition language statements define, maintain, and drop schema objects when they are no longer needed. DDL statements also include statements that permit a user to grant other users the privileges, or rights, to access the database and specific objects within the database.

DATA MANIPULATION LANGUAGE (DML) STATEMENTS:

Data manipulation language statements manipulate the database's data. For example, querying, inserting, updating, and deleting rows of a table are all DML operations. Locking a table or view and examining the execution plan of an SQL statement are also DML operations.

CHAPTER 4

SYSTEM DESIGN AND DEVELOPMENT

4.1 ELEMENTS OF DESIGN

System Design is the most creative and challenging phase in the development of a software system. Design implies to a description of the final system and the process by which it is developed. The first step is to determine what input data is needed for the system and then to design a database that will meet the requirements of the proposed system. The next step is to determine what outputs are needed from the system and the format of the output to be produced.

During the design of the proposed system some areas where attention is required are:

- What are the inputs required and the outputs produced?
- How should the data be organized?
- What will be the processes involved in the system?
- How should the screen look?

The steps carried out in the design phase are as follows:

- Modular Design
- Input Design
- Output Design
- Database Design



4.1.1 MODULAR DESIGN

It is always difficult for any System Development team to grasp a system without breaking it into several subsystems/modules. These subsystems/modules will be a part of the original system yet they will be independent in the sense that they will incorporate within them the major functionalities of the proposed system.

A software system is always divided into several subsystems/modules which make it easier to develop and perform tests on the whole system. The subsystems are also known as the modules and the process of dividing an entire system into subsystems/modules is known as Decomposition.

The modules identified for the proposed HRMS E-COMPLY (STATUTORY COMPLIANCE) are as below:

- Employee Management
- Payroll Management
- Project Allocation System

EMPLOYEE MANAGEMENT

- General details like employee details such as employee name, fathers name, date of birth, sex, marital status, educational qualification, department, grade, designation, leave, timesheet, holiday, contact number are maintained as a part of the Employee management.
- All these details are configured as and when required by either the project manager or the higher officers.
- The employee has to enter and update their details.

PAYROLL MANAGEMENT

- Calculate the payroll for the employee based on salary master.
- HRA, ESI, PF are all granted to the employee.

PROJECT ALLOCATION SYSTEM

- This module describe the general details of projects such as project id, project name, project starting date, project end date.
- It will help to allocate the project to programmers.
- Project manager can view the status of the project.

4.1.2 INPUT DESIGN

The input design is the process of converting the user-oriented inputs into computer-based format. The goal of designing input data is to make sure that the automation is easy, logical and free from errors.

The input design requirements such as user friendliness, consistent format and interactive dialogue which provide users with timely help and correct messages are given high priority.

The input screens of the **Employee Management** module are as below:

- Department Master
- Designation Master
- Grade Master
- Holiday Master
- Salary Master
- Leave Master
- Permanent Employee Details
- Contract Employee Details
- Apply Leave Form
- Approve Leave Form
- Myrecord view
- Time Sheet
- Create User Account

Administrator is provided with facility of add and update the details in all Master forms.

Project Manager has update Myrecord form, Apply leave form, enter the details of User account form, and Approve leave form.

Employees can enter and update Myrecord form, Timesheet form, and Apply leave form.

The input screens of the **Project Allocation System** module are as below:

- Project Master
- Programmer Allocation
- Project Leader Project Status
- Programmer Project Status

These entire screens allow the project manager to enter and update the details.

4.1.3 OUTPUT DESIGN

One of the most important features of an information system for users is the output that is produced. Without quality output the entire system might appear to be so unnecessary that users will avoid using it, possibly causing the system to fail, right output must be developed while ensuring the output element is designed so that people will find the system easy to use effectively.

Output screens are the tools to convey information to the users since the design of the output screen is very important for attracting the users; the output screens are designed in such a way that it is very interactive and informative. The outputs from the computer systems are primarily to communicate the results of processing to users.

The output screens of the **Employee Management** module are as below:

- Department Master
- Designation Master
- Grade Master
- Holiday Master
- Salary Master
- Leave Master

These Master forms display the details in grid view.

The output screen of the **Payroll Management** module is as below.

- Pay slip Calculation form

Payroll is generated as output for the employee payroll details.

The output screens of the **Project Allocation System** module are as below.

- Project status of project Leader
- Project status of programmer

The Project status are display in grid view.

4.1.4 DATABASE DESIGN

A database is a collection of inter-related data stored with minimum redundancy to serve many users quickly and efficiently. The general objective of database design is to make the data access easy, inexpensive and flexible to the user. An elegantly designed database can play a strong foundation for the whole system.

The database is used to group data into a number of tables and minimize the artificiality embedded in using separate files. The details about the relevant data for the system are first identified. According to their relationship, tables are designed through the following method.

4.2 TABLE STRUCTURE

TABLES

The following tables have been created for HRMS E-Comply (statutory compliance)

Table Name: Department_master

Description: This table stores the information about department master.

Column Name	Data Type	Key	Length	Null
Dept_id	nvarchar	Primary key	06	No
Dept_name	nvarchar		20	No

TABLE 4.2.1 DEPARTMENT_MASTER

Table Name: Grade_master

Description: This table stores the information about grade master.

Column Name	Data Type	Key	Length	null
Grade_id	nvarchar	Primary key	06	No
Grade	nvarchar		20	No
Dept_id	nvarchar	Foreign key	06	No
Currency	nvarchar		06	No
Basic_sal_from	nvarchar		07	No
Basic_sal_to	nvarchar		07	No

TABLE 4.2.2 GRADE_MASTER

Table Name: Designation_master

Description: This table stores the information about designation master.

Column Name	Data Type	Key	Length	null
Design_id	nvarchar	Primary key	06	No
Design_name	nvarchar		20	No
Description_of_work	nvarchar		20	No
Dept_id	nvarchar	Foreign key	06	No
Grade_id	nvarchar	Foreign key	06	No

TABLE 4.2.3 DESIGNATION_MASTER

Table Name: Salary_master

Description: This table stores the information about salary master.

Column Name	Data Type	Key	Length	null
Dept_id	nvarchar	Foreign key	06	No
Grade_id	nvarchar	Foreign key	06	No
HRA	nvarchar		05	
Medical_allowance	nvarchar		05	
Food_allowance	nvarchar		05	

Travel_allowance	nvarchar		05	
Education_allowance	nvarchar		05	
Other_allowance	nvarchar		05	
Income_tax	nvarchar		05	
TDS	nvarchar		05	
ESI	nvarchar		05	

TABLE 4.2.4 SALARY_MASTER

Table Name: Leave_master

Description: This table stores the information about leave master.

Column Name	Data Type	Key	Length	Null
Leave_id	nvarchar	Primary key	06	No
Type_of_leave	nvarchar		20	No
No_of_days	nvarchar		03	No

TABLE 4.2.5 LEAVE_MASTER

Table Name: Holiday_master

Description: This table stores the information about holiday master.

Column Name	Data Type	Key	Length	Null
Holiday_id	nvarchar	Primary key	06	No
Date	nvarchar		10	No
Holiday	nvarchar		20	No
Type_of_holiday	nvarchar		20	No
To_marked_as	nvarchar		20	No

TABLE 4.2.6 HOLIDAY_MASTER

Table Name: Employee_personal_details

Description: This table stores the information about employee.

Column Name	Data Type	Key	Length	Null
Emp_id	nvarchar	Primary key	06	No
Emp_name	nvarchar		20	No
Gender	nvarchar		06	No
Dob	nvarchar		10	No
Doj	nvarchar		10	No
Dept_id	nvarchar	Foreign key	06	No
Grade_id	nvarchar	Foreign key	06	No
Designation_id	nvarchar	Foreign key	06	
Project	nvarchar		20	
Client	nvarchar		20	
Company_email	nvarchar		20	
Client_email	nvarchar		20	
Edu_qualification	nvarchar		10	No
Institute	nvarchar		20	No
Year_of_passing	nvarchar		04	No
Percentage	nvarchar		05	No
Total_experience	nvarchar		02	

TABLE 4.2.7 EMPLOYEE_PERSONAL_DETAILS

Table Name: Employee_salary_details

Description: This table stores the information about employee salary.

Column Name	Data Type	Key	Length	null
Emp_id	nvarchar	Foreign key	06	No
Annual_compensation	nvarchar		08	No
Monthly_salary	nvarchar		07	
HRA	nvarchar		05	
Medical_allowance	nvarchar		05	
Food_allowance	nvarchar		05	
Travel_allowance	nvarchar		05	
Education_allowance	nvarchar		05	
Other_allowance	nvarchar		05	

Income_tax	nvarchar		07	
TDS	nvarchar		05	
ESI	nvarchar		05	
Pf_no	nvarchar		15	
Pan_no	nvarchar		15	
Bank_acno	nvarchar		15	

TABLE 4.2.8 EMPLOYEE_SALARY_DETAILS

Table Name: Employee_address_details

Description: This table stores the information about employee address.

Column Name	Data Type	Key	Length	null
Emp_id	nvarchar	Foreign key	06	No
Passport_no	nvarchar		15	
Valid_till	nvarchar		10	
Blood_group	nvarchar		05	No
Mobile_no	nvarchar		10	No
Phone_no	nvarchar		15	
Doorno_street	nvarchar		20	
Area	nvarchar		20	
City	nvarchar		20	No
State	nvarchar		20	No
Pincode	nvarchar		06	No
Country	nvarchar		20	No
Religion	nvarchar		20	No
Father_name	nvarchar		20	No
Mather_name	nvarchar		20	No
Marital_status	nvarchar		10	No
Spouse_name	nvarchar		20	
Children	nvarchar		03	

TABLE 4.2.9 EMPLOYEE_ADDRESS_DETAILS

Table Name: Time_sheet

Description: This table stores the information about time sheet.

Column Name	Data Type	Key	Length	Null
Emp_id	nvarchar	Foreign key	06	No
Emp_name	nvarchar		20	No
Date	nvarchar		10	No
Shift	nvarchar		10	No
Days_of_week	nvarchar		02	No
Regular_hour	nvarchar		02	No
Additional_hour	nvarchar		02	No
Total_hour	nvarchar		02	No

TABLE 4.2.10 TIME_SHEET

Table Name: Apply_leave

Description: This table stores the information about leave apply.

Column Name	Data Type	Key	Length	Null
Emp_id	nvarchar	Foreign key	06	No
Emp_name	nvarchar		20	No
Contact_no	nvarchar		10	No
Leave_id	nvarchar	Foreign key	06	No
Reason	nvarchar		20	No
Leave_from	nvarchar		10	No
Leave_to	nvarchar		10	No
No_of_days	nvarchar		02	No
Status	nvarchar		10	

TABLE 4.2.11 APPLY_LEAVE

Table Name: Contract_emp_details

Description: This table stores the information about contract employee details.

Column Name	Data Type	Key	Length	Null
Cemp_id	nvarchar	Primary key	07	No
Cemp_name	nvarchar		20	No
Gender	nvarchar		06	No
Dob	nvarchar		10	No
Design_id	nvarchar	Foreign key	06	No
Contractperiod_from	nvarchar		10	No
Contractperiod_to	nvarchar		10	No
Vendor_name	nvarchar		20	No
Vendor_address	nvarchar		20	No
Comp_email	nvarchar		20	No
Client_email	nvarchar		20	No

TABLE 4.2.12 CONTRACT_EMP_DETAILS

Table Name: User_account

Description: This table stores the information about user account.

Column Name	Data Type	Key	Length	Null
Emp_id	nvarchar	foreign key	06	No
Emp_name	nvarchar		20	No
Dept_id	nvarchar	foreign key	06	No
Grade_id	nvarchar	foreign key	06	No
Design_id	nvarchar	foreign key	06	No
Dob	nvarchar		10	No
Doj	nvarchar		10	No
User_ac_type	nvarchar		15	No
User_id	nvarchar	Primary_key	10	No
Password	nvarchar		10	No

TABLE 4.2.13 USER_ACCOUNT

Table Name: Project_master

Description: This table stores the information about project master.

Column Name	Data Type	Key	Length	Null
Project_id	nvarchar	Primary key	06	No
Client	nvarchar		20	No
Project_name	nvarchar		20	No

TABLE 4.2.14 PROJECT_MASTER

Table Name: Programmer_allocation

Description: This table stores the information about programmer allocation.

Column Name	Data Type	Key	Length	Null
Project_id	nvarchar	Foreign key	06	No
Project_name	nvarchar		20	No
Pro_startdate	nvarchar		10	No
Pro_enddate	nvarchar		10	No
Programmer_name	nvarchar		100	No
PL_name	nvarchar		20	No

TABLE 4.2.15 PROGRAMMER_ALLOCATION

Table Name: Status_of_pl

Description: This table stores the information about project leader project status.

Column Name	Data Type	Key	Length	Null
Project_id	nvarchar	Foreign key	06	No
Project_name	nvarchar		20	No
PL_name	nvarchar		20	No
Pro_startdate	nvarchar		10	No
Pro_enddate	nvarchar		10	No
Pro_status	nvarchar		10	No

TABLE 4.2.16 STATUS_OF_PL

Table Name: Status_of_programmer

Description: This table stores the information about programmer project status.

Column Name	Data Type	Key	Length	Null
Project_id	nvarchar	Foreign key	06	No
Project_name	nvarchar		20	No
Programmer_name	nvarchar		20	No
Pro_startdate	nvarchar		10	No
Pro_enddate	nvarchar		10	No
Pro_status	nvarchar		10	No

TABLE 4.2.17 STATUS_OF_PROGRAMMER

4.3 ENTITY RELATIONSHIP DIAGRAM

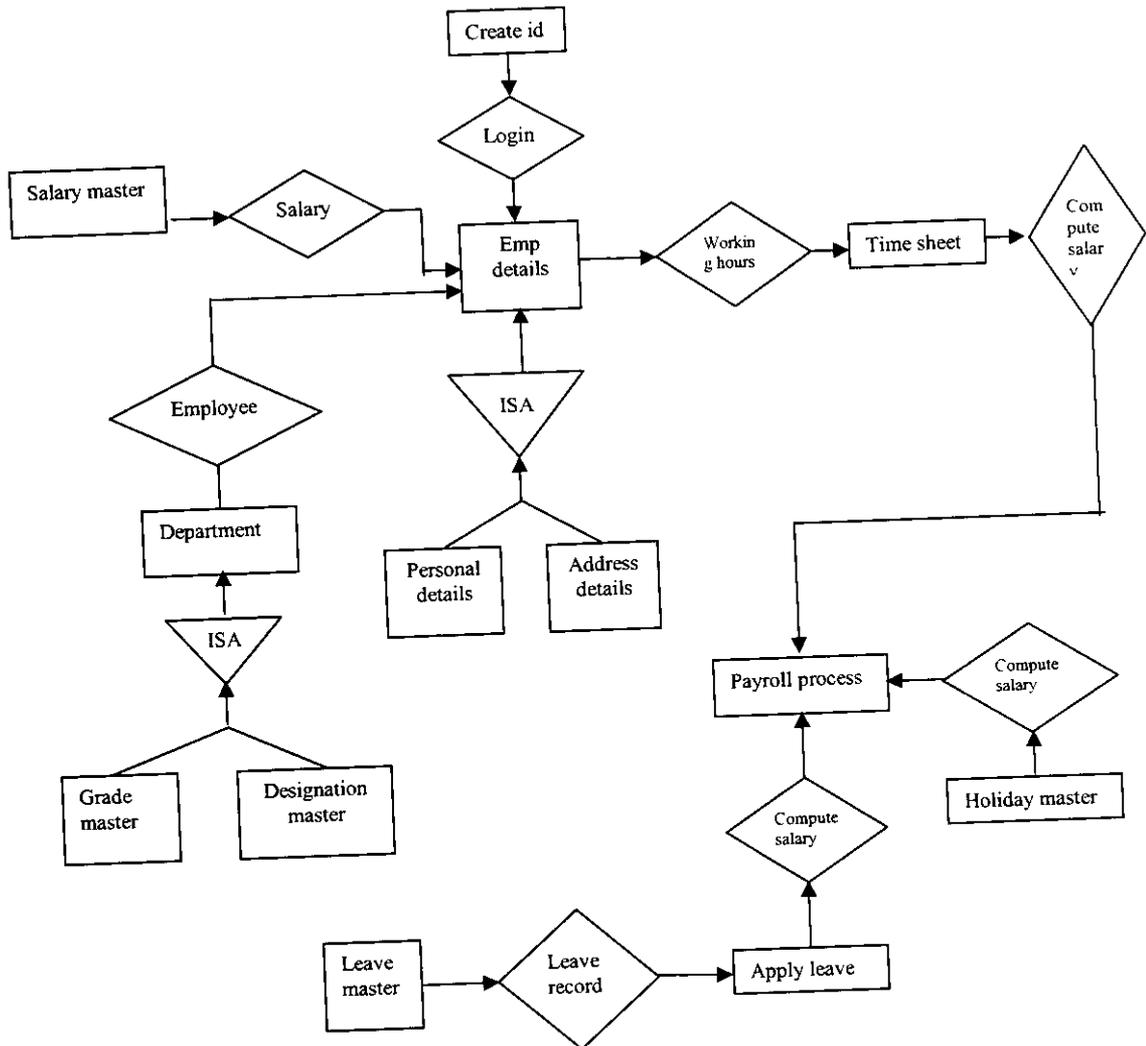


Figure 4.3.1 E-R Diagram for whole system

4.4 USECASE DIAGRAM



Figure 4.4.1 Usecase Diagram for Administrator Vs Project Manager

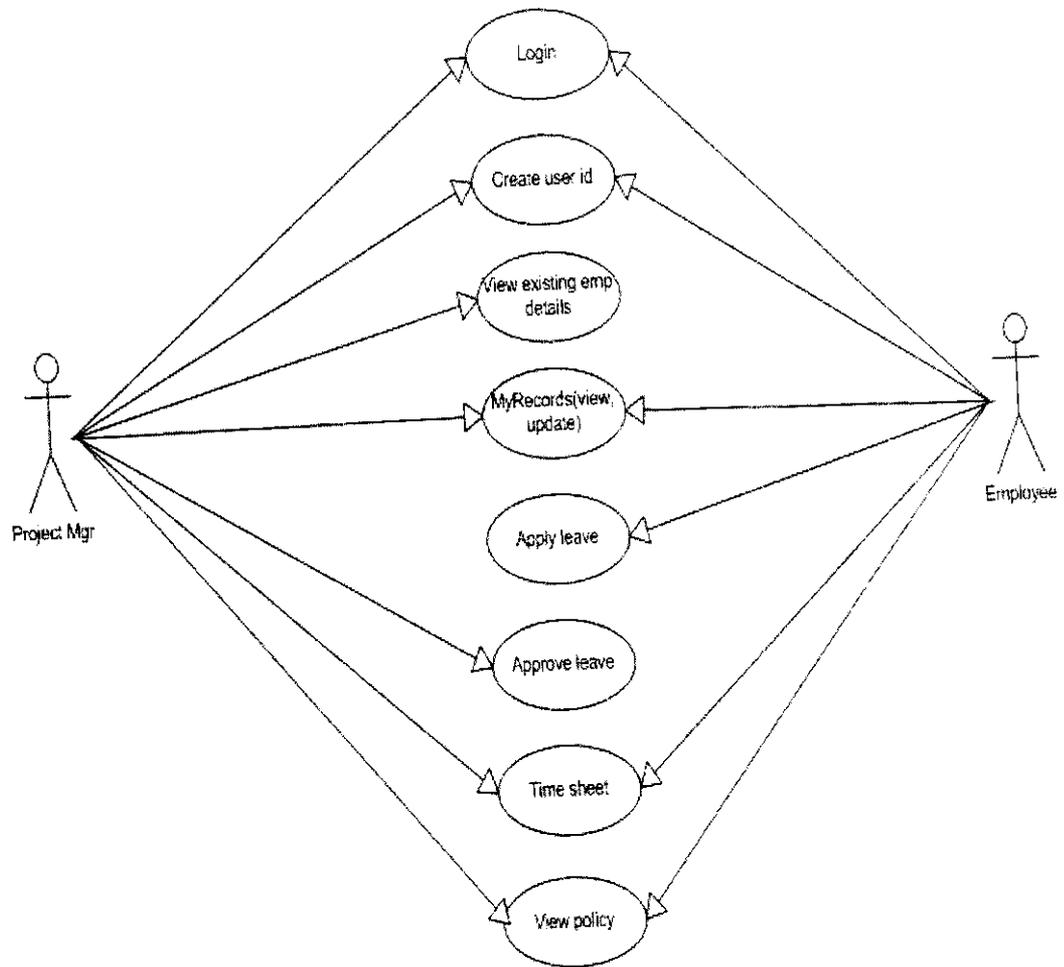


Figure 4.4.2 Usecase Diagram for Project Manager Vs Employee

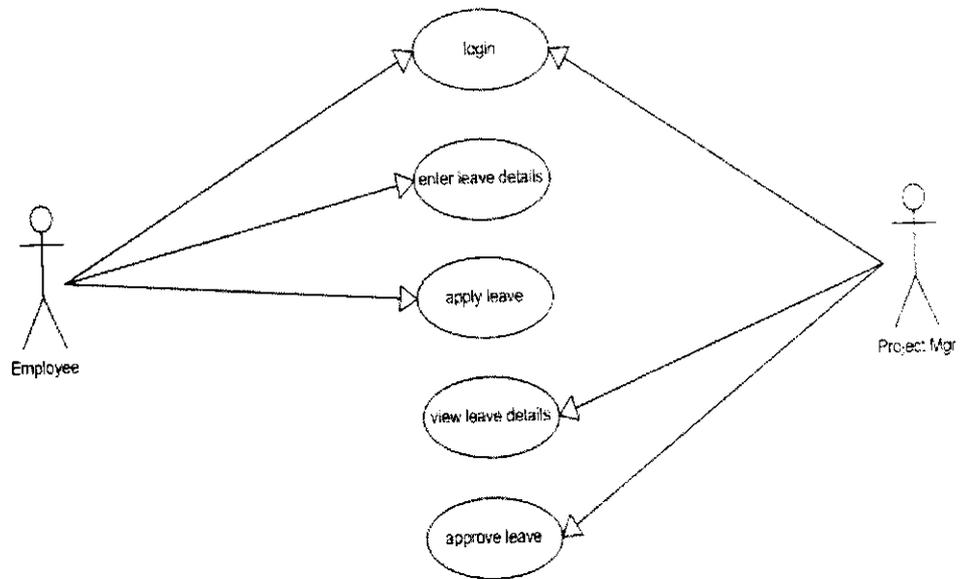


Figure 4.4.3 Usecase Diagram for Employee Vs Project Manager

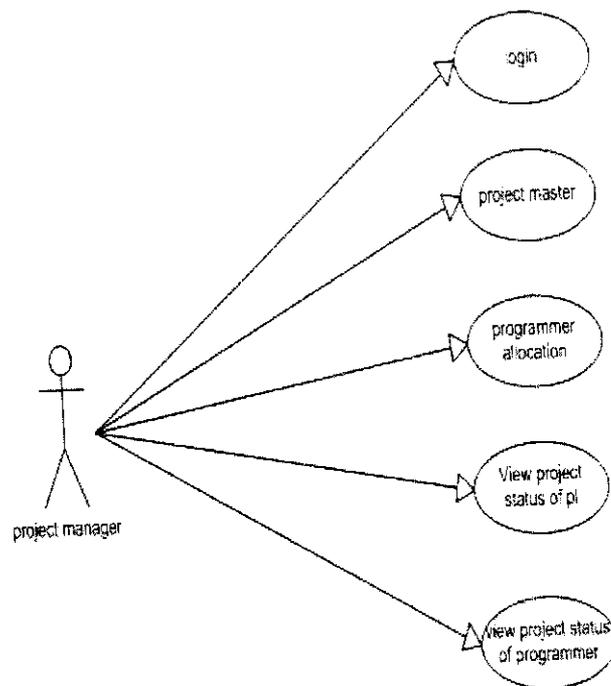


Figure 4.4.4 Usecase Diagram for Project Manager

CHAPTER 5

SYSTEM TESTING AND IMPLEMENTATION

5.1 TESTING

The purpose of testing is discovering errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies and/or a finished product it is the process of exercising software with the intent of ensuring that the software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses specific testing requirements.

5.1.1 UNIT TESTING

Unit testing is essential for verification of the code produced during the coding phase. Errors were been noted down and corrected immediately and the program clarity has been increased. At the end of the unit testing, the bug fixation is triggered and on completion of fixation and confirmation, the software passes to the next level of testing.

The Unit Testing is used in the Login Page. If the User doesn't enter any value in the textbox immediately an error message is displayed to the user to fill the textbox with appropriate value. Likewise Unit testing is used in some of the forms like Department Master, Holiday Master and Time Sheet etc,

5.1.2 SYSTEM TESTING

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integrated points.

5.1.3 USER ACCEPTANCE TESTING

User acceptance testing is done by the customer to test against the defined requirements. The system developed is tested for user acceptance by constantly keeping in touch with prospective system users at the time of development and changes were made whenever required. This is done with respect to the following things:

- Input and Output screen design
- This test is conducted using both test and live data.

The project is completely checked with the sample data and the live data to fulfill the requirements of the user in all the forms. Some of the forms are Leave Master, Permanent Employee Details and Programmer Allocation etc.

5.1.4 INTEGRATION TESTING

The second level of testing includes integration testing. It need not be the case that software packages whose forms when run individually and showing perfect results, will show perfect results when running as a whole. The individually forms were grouped and tested again and verified the results.

In this project each entry is recorded in various forms. If data is entered in Department Master form this would affect in Time Sheet, Salary Master and Permanent Employee Details.

5.1.5 FUNCTIONAL TESTING

Functional test provides systematic demonstration that functions tested are available as specified by the business and technical requirements, system Documentation and user manuals. Functional testing is centered on followed item.

- Valid input - identified classes of valid must be accepted.
- Invalid input - identified classes of Invalid must be rejected.
- Functions - identified functions must be exercised.
- Output - identified classes of application outputs must be exercised.

In this project has a separate form for database connection, executing the query, selecting the records using the query and so on. Each part is a function. When the user doesn't pass the arguments to the function will result in error. We have completely checked with those functions.

- GetDS(Query,Name) // Returns a Dataset.
- QueryProcess(Query) // Returns Boolean Value.
- getConnection() //Returns Boolean Value.

5.1.6 VALIDATION TESTING

When the customer enters incorrect values, then the system should not display any error message. Instead of it, the system has to display helpful messages for the users to enter the correct values.

The validation testing was handled in all the forms wherever the user insert the data. The user cannot type any inappropriate value in textboxes. Consider that the email textbox will not allow for wrong email format until the user enters correct one. i.e., It always looks for @ symbol, dot and com for email address. If he entered wrongly, an error message is displayed to suggest the user to enter in correct format. Some of the forms where we used this kind of validation testing are Permanent Employee Details, Contract Employee Details and Apply Leave form Etc.

PASSWORD TESTING

When the user enters the username and password, it will be validation by checking it with the already registered username and password in the databases. If it matches then only the user is allowed to enter in to the process. Otherwise he is denied access and there by strong security is provided.

OUTPUT TESTING

No system could be useful if it does not produce the required output in the specified format. Output testing is performed to ensure the correctness of the output and its format. The output displayed by the system under consideration is tested with multiple users' system environment.

5.2 SYSTEM SECURITY

The last part of the system development lifecycle is the system maintenance, which is actually the implementation of the post implementation review planned. Maintenance means resorting to its original position. The proposed system has been designed with effective tools and techniques. The system was designed such that the future changes can be made with minimum changes in the code. The system was also designed to be flexible and adaptable, so that the maintenance cost in the future can be reduced as much as possible. It has been made easier to maintain the database. Only the authorized person of the company has been allowed to access the database.

The Data entered by the user is kept in a safe mode so that no one can see the record of another. We have used Decryption and Encryption technique to encrypt and decrypt the data.

5.3 SYSTEM IMPLEMENTATION

Implementation is the process of bringing a development system in to operational use and turning it over to the user. The most crucial stage in achieving a new successful system and giving confidence on the new system for the users are that it will work efficiently and effectively. This can be done in many ways. This is known as change over. There are number of ways change over can take place.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

The HRMS E-Comply (Statutory Compliance) enables the project team to get rid of a very tedious and time consuming process which has been followed so far. The System has been developed with good user-friendly methodologies and techniques. It provides a great degree of flexibility and has been designed in such a way so as to be able to handle future enhancements and modification when necessary. It is possible for any user to exploit the features of the system to get the maximum benefit.

The performance of this project will be good only if the server is kept online for 24 hours a day, every week, every year. The database used should be tuned and well maintained in such a way to meet the unanticipated querying in the future.

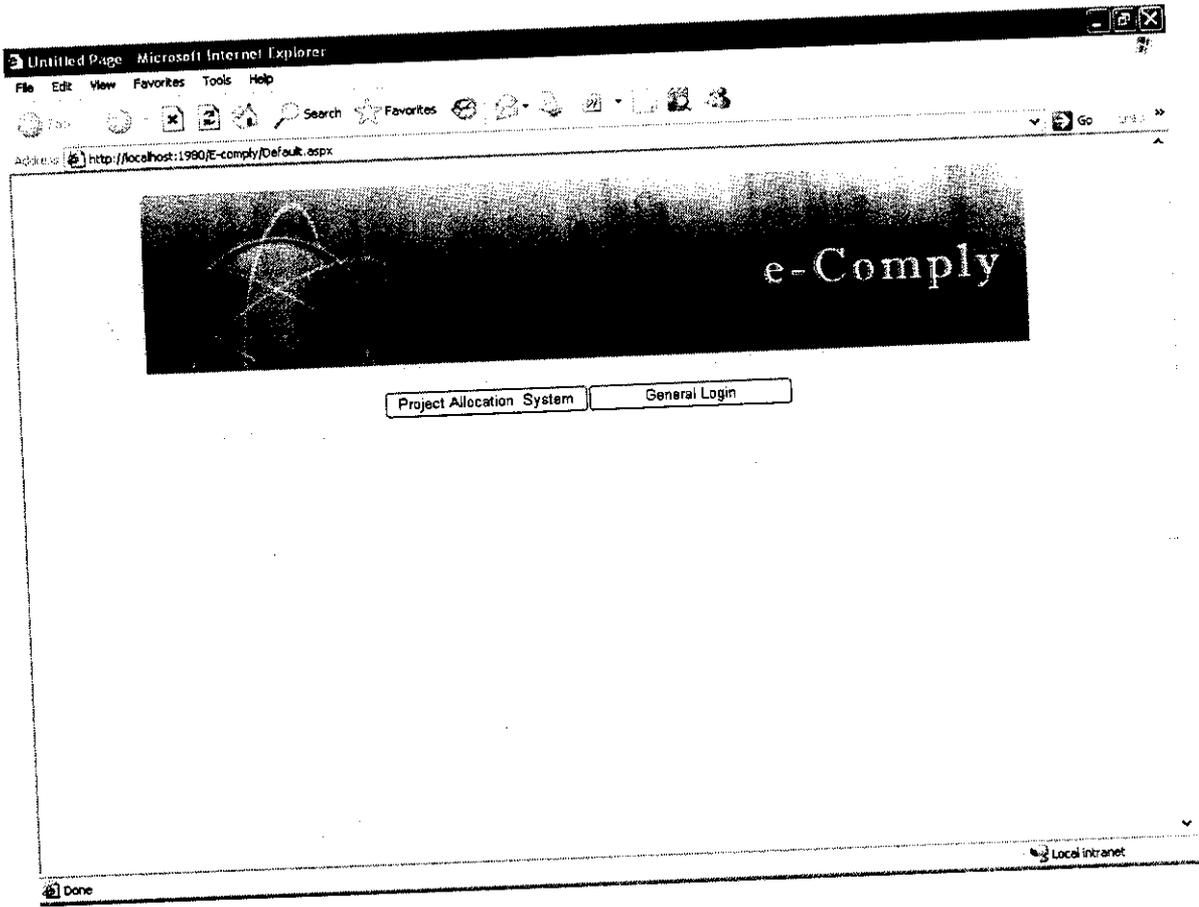
6.2 FURTHER ENHANCEMENT

Enhancement is always an important and necessary activity in the life of the application developed. Any system developed should always provide room to accept changes and further inclusion. Every application has its own merits and demerits. The project has covered almost all the requirements. Further requirements and improvements can easily be done since the coding is mainly structured or modular in nature Changing the existing modules or adding new modules can append improvements.

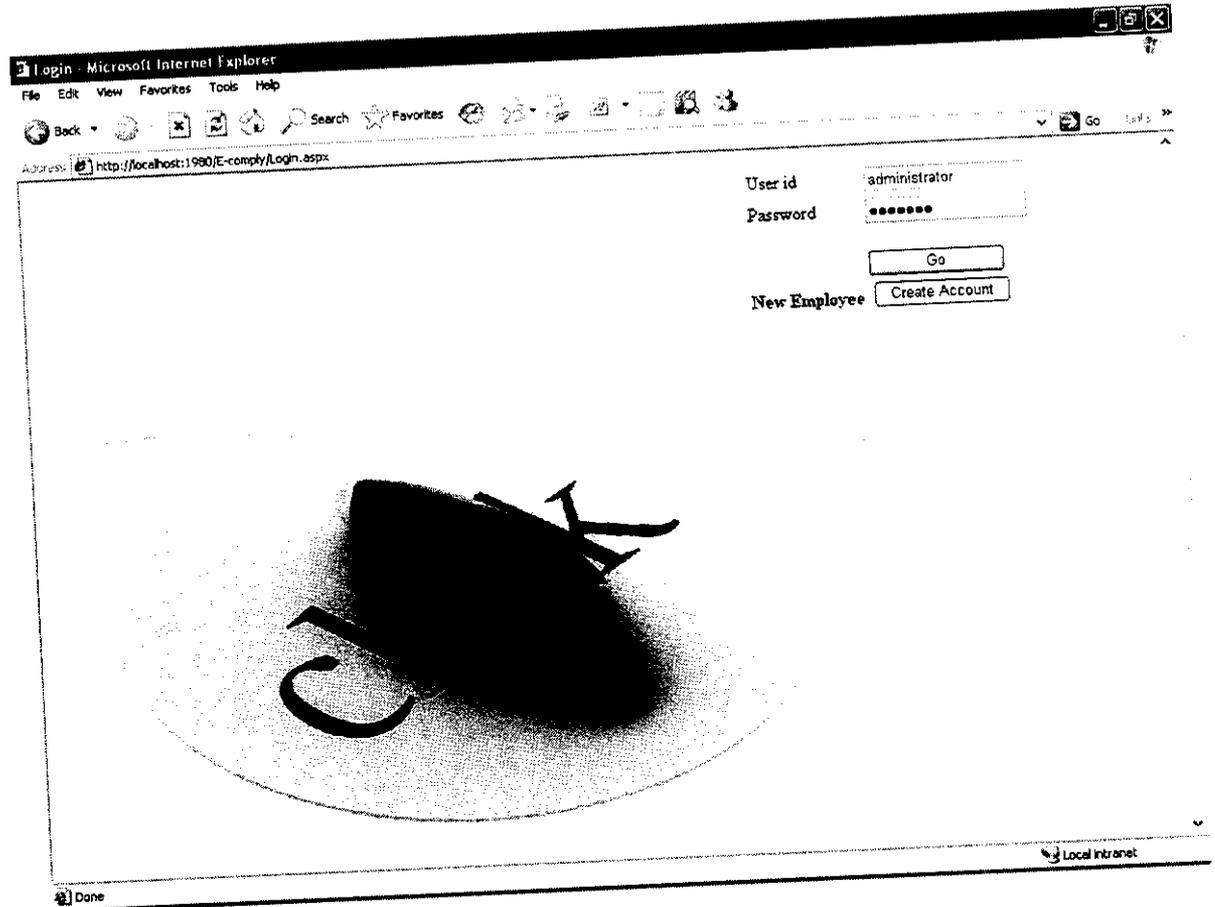
APPENDIX

SCREEN SHOTS

MAIN PAGE



LOGIN PAGE



DEPARTMENT MASTER

F-Comply - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Go

Address: http://localhost:1980/E-comply/Master/DepartmentMaster.aspx

e-Comply

Logout

Transaction MasterPages Policy

Dept id: Dept07

Dept Name: hardware

Save Update View Clear

Local intranet

DESIGNATION MASTER

Microsoft Internet Explorer
 File Edit View Favorites Tools Help
 Back Home Search Favorites Go
 Address: http://localhost:1980/E-comply/Master/DesignationMaster.aspx

Logout

Transaction Master/DesignationMaster Edit/View

Designation id: des04
 Designation name: programmer
 Description of work: programming
 Department: dept02
 Grade: I

Designation Id	DesignationName	Description of work	Dept	Grade	Select
des04	programmer	programming	dept02	I	<input type="button" value="Select"/>
des04	programmer	programming	dept05	II	<input type="button" value="Select"/>

Local intranet

Done

GRADE MASTER

Microsoft Internet Explorer

Address: http://localhost:1980/E-comply/Master/GradeMaster.aspx

e-Comply Logout

Transaction

Grade id:

Grade:

DeptName:

Currency:

Basic salary: From To

Save Update View Clear

Grade Id	Grade Name	Department Name	Currency	Basic From	Basic To	Select
grd005	II	s/w	indian	8000	12000	Select
grd021	I	s/w	indian	15000	20000	Select

Microsoft Internet Explorer: data updated OK

Local intranet

SALARY MASTER

Microsoft Internet Explorer

Address: http://localhost:1980/E-comply/Master/SalaryMaster.aspx

e-Comply Logout

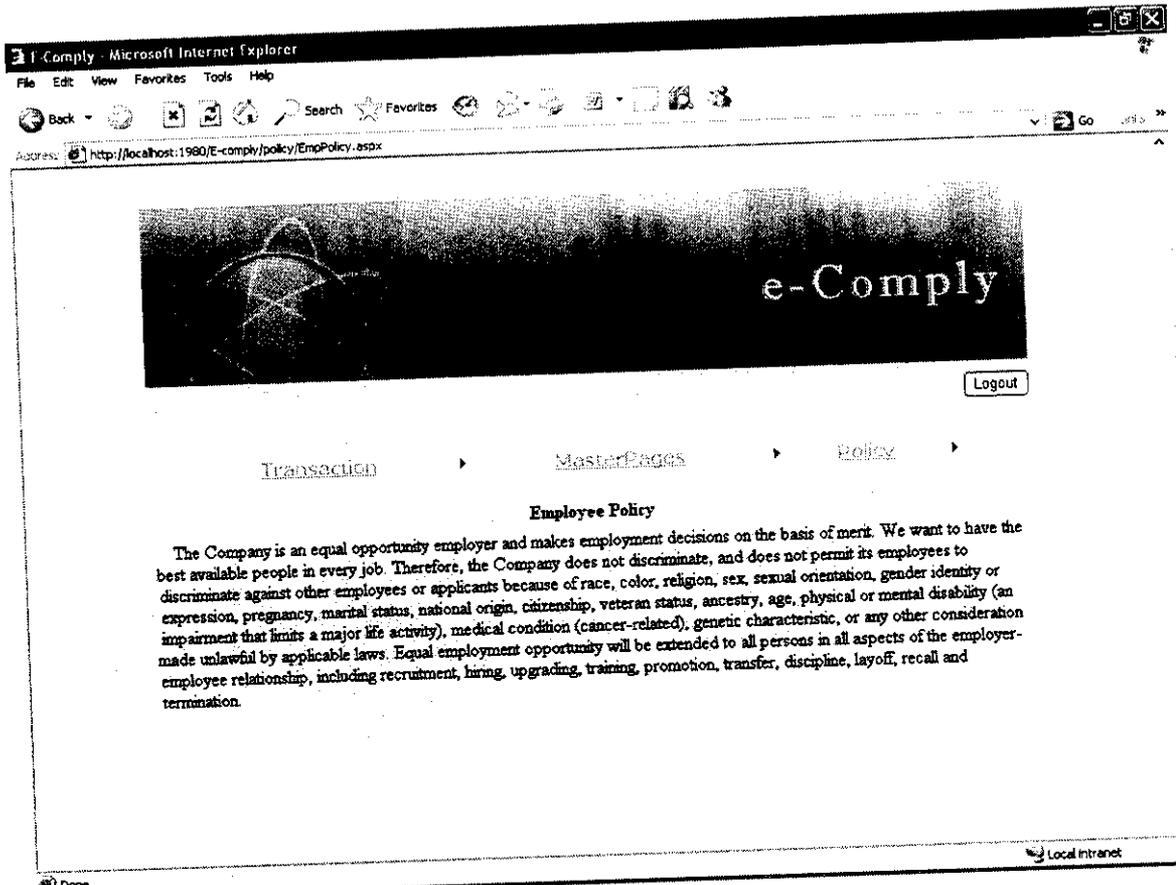
Transaction Masterpages

Department	h/w	
Grade	1	
HRA	20	%
Medical allowance	40	%
Food allowance	15	%
Travell allowance	1500	INR
Education allowance	30	%
Other allowance	50	%
Income tax	40	%
TDS	50	%
ESI	2000	INR

Microsoft Internet Explorer Data saved OK

Opening page http://localhost:1980/E-comply/Master/SalaryMaster.aspx... Local intranet

EMPLOYEE POLICY



e-Comply

Logout

[Transaction](#) > [MasterPages](#) > [Policy](#) >

Employee Policy

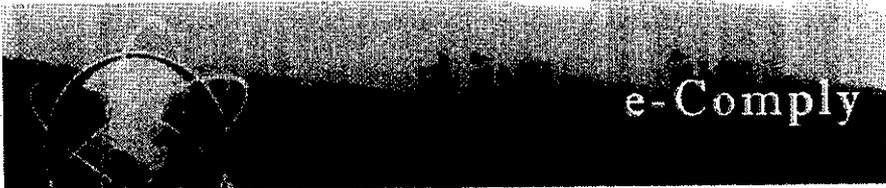
The Company is an equal opportunity employer and makes employment decisions on the basis of merit. We want to have the best available people in every job. Therefore, the Company does not discriminate, and does not permit its employees to discriminate against other employees or applicants because of race, color, religion, sex, sexual orientation, gender identity or expression, pregnancy, marital status, national origin, citizenship, veteran status, ancestry, age, physical or mental disability (an impairment that limits a major life activity), medical condition (cancer-related), genetic characteristic, or any other consideration made unlawful by applicable laws. Equal employment opportunity will be extended to all persons in all aspects of the employer-employee relationship, including recruitment, hiring, upgrading, training, promotion, transfer, discipline, layoff, recall and termination.

Done Local Intranet

PERMANENT EMPLOYEE DETAILS

E-Comply - Microsoft Internet Explorer

Address: http://localhost:1980/E-comply/empdetails.aspx



Logout

Transaction MasterPages Policy

Type of Employee: Permanent Employee

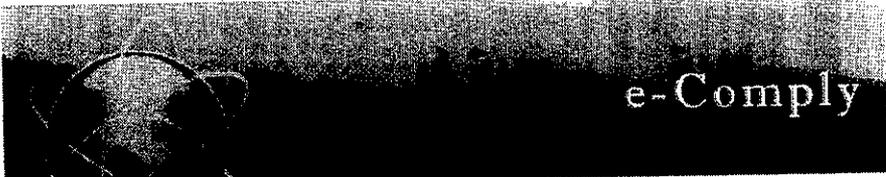
Permanent Employee Details

Employee id	emp06	Employee Name	dharan
Gender	Male	Date of Birth	22/5/1980
Department	H/w	Grade	II
Designation	Programmer		
Date Of Joining	14/8/2007		

Opening page http://localhost:1980/E-comply/empdetails.aspx... Local Intranet

CONTRACT EMPLOYEE DETAILS

L Comply - Microsoft Internet Explorer
 File Edit View Favorites Tools Help
 Back Forward Stop Refresh Home Search Favorites
 Address http://localhost:1980/E-comply/exitxcmprdetails.aspx Go



[Transaction](#) ▶ [MasterPages](#) ▶ [Policy](#) ▶

Type of Employee Contract Employee ▼

Contract Employee			
Employee id	comp05	Employee name	siva
Gender	Select	Designation	▼
Date of birth	22/5/83		
Vendor name	w creation	Vendor address	33,rr street,chennai-04
Contract Period From	22/4/07	To	12/07/09
Company Email-id	sivarr@infoink.com	Client Email-id	snarr2009@legent.com

Local intranet

Done

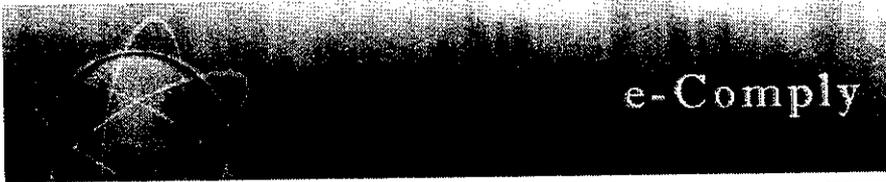
APPLY LEAVE

E-Comply - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Home Search Favorites

Address: http://localhost:1980/E-comply/ApplyLeave.aspx



[Logout](#)

[Transaction](#) >
 [MyRecords](#) >
 [Policy](#) >
 [Pay Slip](#) >
 [User Accounts](#) >

Emp id	<input type="text" value="emp07"/>
Emp name	<input type="text" value="suresh"/>
Email id	<input type="text" value="sureshw@infolink.co.in"/>
Contact no	<input type="text" value="9962214143"/>
Contact no while on leave	<input type="text" value="9842218455"/>
Leave id	<input type="text" value="L1"/>
Reason	<input type="text" value="Casual"/>
Leave	<input type="text" value="From 20/4/09 To 22/4/09"/>
No of days	<input type="text" value="3"/>

Microsoft Internet Explorer

data saved

OK

Opening page http://localhost:1980/E-comply/ApplyLeave.aspx... Local Intranet

TIME SHEET

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying `http://localhost:1980/E-comply/TimeSheet.aspx`. The page features a dark header with the text "e-Comply" and a "Logout" button. Below the header is a navigation menu with links: Transaction, MyRecords, Policy, Pay Slip, and User Account. The main content area contains a form with the following fields and values:

Emp id	emp104
Emp name	raju shenga
Date	17/04/09
Shift	General
Days of the week	6
Regular hours	8
Additional hours	2
Total hours	10

At the bottom of the form are three buttons: "Save", "Update", and "Clear". The status bar at the bottom of the browser indicates "Local intranet" and "Opening page http://localhost:1980/E-comply/TimeSheet.aspx..."

PAY SLIP CALCULATION

[Transaction](#) > [MyRecords](#) > [Policy](#) > [Pay Slip](#) > [User Account](#) > [Logout](#)

Year	2009	Month	Apr
Emp id	Emp139	Emp name	Sumathi saran
Designation	Team leader	Grade	II
Date of joining	04/12/06	PAN no	01196847261
PF no	66821468	Bank A/C no	01555927933
ESI no	e07943693		
Loss of Pay (LOP)	400		

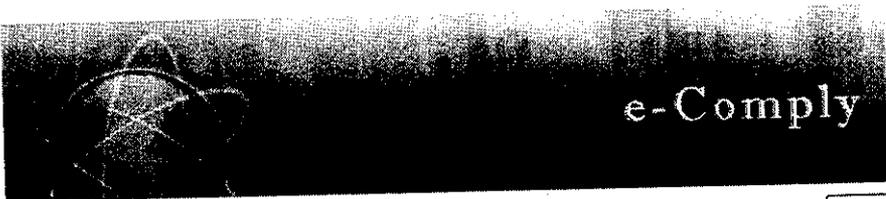
Earnings		Deduction	
Basic salary	22000	INR Provident Fund	400 INR
HRA	450	INR Income Tax	600 INR
Medical allowance	350	INR TDS	300 INR
Food allowance	500	INR ESI	250 INR
Travell allowance	200	INR	

Done Local intranet

APPROVE LEAVE

Microsoft Internet Explorer

Address: http://localhost:1980/E-comply/ApproveLeave.aspx



Logout

Transaction > MyRecords > Policy > Easy Slip > User Account >

Emp Id	Emp Name	Leave Reason	Leave From	Leave To	No of Days	Select
emp05	siva	L2 sick leave	22/3/09	26/3/09	5	Select
emp07	suresh	L1 casual	20/4/09	22/4/09	3	Select

Emp id:

Status:

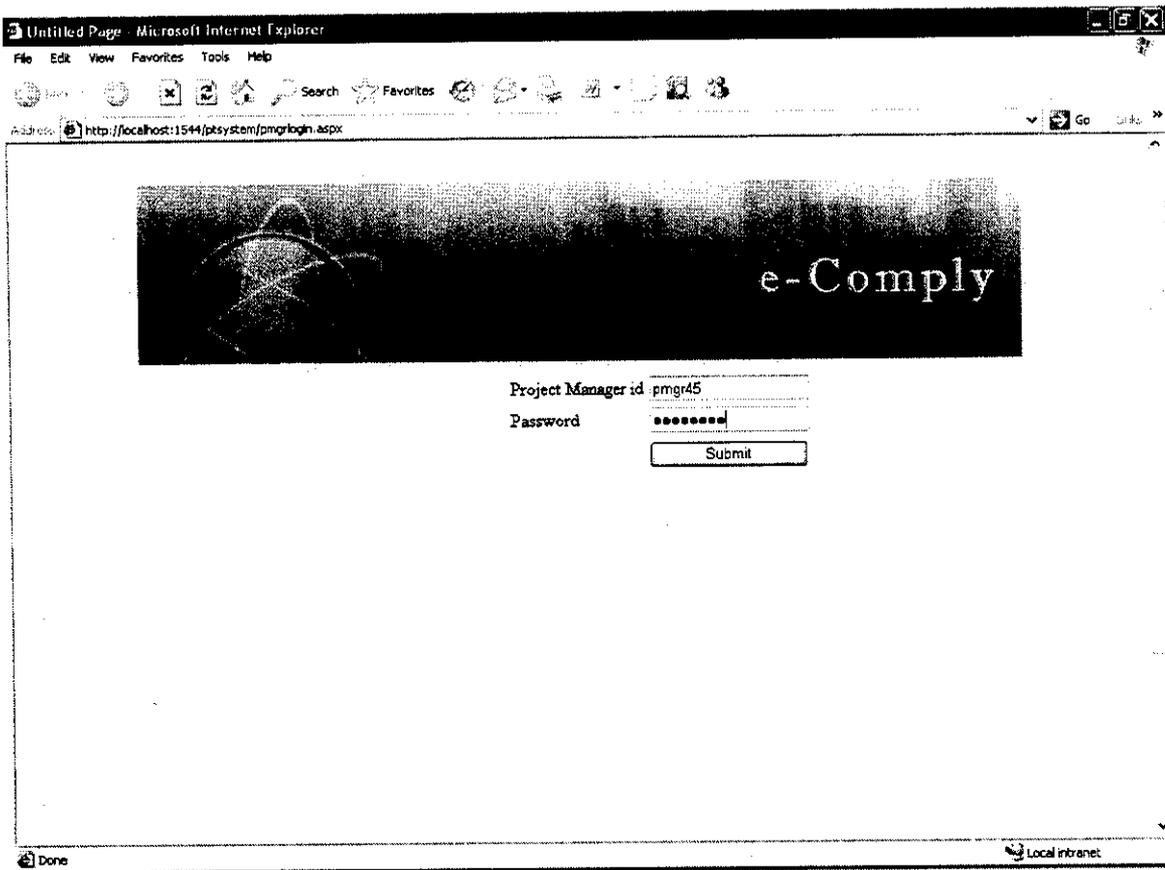
Microsoft Internet Explorer

! Data Saved

OK

Opening page http://localhost:1980/E-comply/ApproveLeave.aspx... Local Intranet

PROJECT MANAGER LOGIN



PROGRAMMER ALLOCATION

ProjectMaster ProgramerAllocation ProjectStatus

Logout

Project Id: pro003
 Name of the project: Ship Management
 Project Start Date: 12/06/08
 Project Duration: 12/05/09
 Name of the programmer: Suresh
 Name of Project Leader: Aravind

Add Save Update

Data Saved
OK

Local intranet

PROJECT STATUS FOR PROJECT LEADER

The screenshot shows a Microsoft Internet Explorer browser window displaying a web application. The address bar shows the URL: `http://localhost:1544/plsystem/ProjectLeaderProjectStatus.aspx`. The page features a header with the text "e-Comply" and navigation links for "ProjectMaster", "ProgramerAllocation", and "ProjectStatus", along with a "Logout" button. The main content area contains a form with the following fields and values:

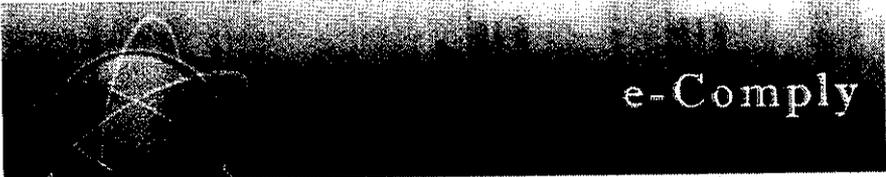
Project Id	pro003
Name of the Project	Ship Management
Project Leader	Umadevi
Project Start Date	12/06/08
Project End Date	25/04/09
Project Status	Completed

Below the form are two buttons: "Save" and "Update". A small dialog box titled "Microsoft Internet Explorer" is open, displaying a warning icon and the message "Data Updated" with an "OK" button.

At the bottom of the browser window, the status bar shows "Opening page http://localhost:1544/plsystem/ProjectLeaderProjectStatus.aspx..." and "Local intranet".

PROJECT STATUS FOR PROGRAMMER

Microsoft Internet Explorer
 Address: http://localhost:1544/plsystem/ProjectLeaderProjectStatus.aspx



ProjectMaster ProgrammerAllocation ProjectStatus Logout

Project Id	pro009
Name of the Project	Ship Management
Project Leader	Umadevi
Project Start Date	12/06/08
Project End Date	25/04/09
Project Status	Completed

Save Update

Microsoft Internet Explorer

! Data Updated

OK

Opening page http://localhost:1544/plsystem/ProjectLeaderProjectStatus.aspx... Local intranet

REFERENCES

1. A Russell Jones (2000) 'Mastering Active Server Pages 3', BPB Publication.
2. Roger S Pressman (2005) 'Software Engineering, A Practitioner's approach', Tata McGraw-Hill
3. Silberschatz, Korth and Sudarshan (2002) 'Database System Concepts', Tata McGraw-Hill
4. Peter DeBetta (2000) 'Introducing Microsoft SQL Server™ 2000 for Developers', Microsoft Press.
5. MSDN Library Visual Studio 2005 Release.
6. www.w3schools.com
7. www.google.com