

HUMAN RESOURCE SUPPORT SYSTEM

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Abstract

My project “Human Resource Support System” is an online application. The main aim of the project is to develop a Human Resource Support module for the Intranet Automation of HR Software. A Human Resource Support System (HRSS) refers to the systems and processes at the intersection between human resource management (HRM) and information technology (IT). It merges HRM as a discipline and in particular it's basic HR activities and processes with the information technology field.

Employees are the backbone of any company therefore their management plays a major role in deciding the success of an organization. Employees Management Software makes it easy for the employer to keep track of all records. This software allows the administrator to edit employees, add new employees, transfer/promote/terminate employees. Each employee in the database is associated with a position can be added and edited when need arises. Employees can be transferred between positions easily without having to retype back their information in the database. You can check to see if there are duplicate positions/employees in the database. Most of all, the employer can assign tasks to employees and assess their progress in order to keep track of employee performance. A flexible and easy to use Employee Management software solution for small and medium sized companies provides modules for personnel information management thereby organization and companies are able to manage the crucial organization asset – people. The combination of these modules into one application assures the perfect platform for re-engineering and aligning Human Resource processes along with the organizational goals. This system brings about an easy way of maintaining the details of employees working in any organization.

It is simple to understand and can be used by anyone who is not even familiar with simple employees' system. It is user friendly and just asks the user to follow step by step operations by giving easy to follow options. It is fast and can perform many operations for a company.

The goal of this project is to design and develop an employee management system to fill existing gaps in the electronic management of employees.

Keywords: Performance Management System; Institutions; Information Systems; Business; Web Application

DECLARATION

This paper is final year Project paper submission in partial fulfillment of the requirements for the Bachelor of Science in systems engineering

I hereby certify that this thesis constitutes of my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expression, or writing of another.

Milton Kasanga

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Chapter 1

1.2 Introduction

This chapter looks at the evaluation of the literature relevant to the Human Resource Support System (HRSS). It examines theories, concepts, approaches, methods and techniques relevant to the project. Similar existing technologies relating to the development the EMS are discussed.

Problem statement

Manual handling of employee information poses a number of challenges. This is evident in procedures such as leave management where an employee is required to fill in a form which may take several weeks or months to be approved. The use of paper work in handling some of these processes could lead to human error, papers may end up in the wrong hands and not forgetting the fact that this is time consuming. A number of current systems lack employee self-service meaning employees are not able to access and manage their personal information directly without having to go through their HR departments or their managers. Another challenge is that multi-national companies will have all the employee information stored at the headquarters of the company making it difficult to access the employee information from remote places when needed at short notice.

The aforementioned problems can be tackled by designing and implementing a web based HR management system. This system will maintain employee information in a database by fully privacy and authority access. The project is aimed at setting up employee information system about the status of the employee, the educational background and the work experience in order to help monitor the performance and achievements of the employee through a password protected system.

The main aim of the project was to develop a Human Resource Module for the Automation of HR Software in which all the information regarding the employees in the company will be present. This has to be developed with good Interaction/ communication facilities between the employees and HR Administrator in such a manner that a level of hierarchy was maintained between the various employees.

The web pages about an employee are created dynamically based on the user id and password and links are provided to web pages containing information about Employee General Profile, leave days Details, and other static links to various other pages. An Information Hierarchy is maintained i.e. the information regarding a particular employee is accessed by the same or any person above him in the information hierarchy. There was also a provision for updating the details.

Each employee has the facility of Updating his General Details, Contact Details, Education Details, Certification Details, Skill Details and Project Details. User Controls are provided for Navigating through the web Pages.

HR Admin page is created with HR Admin Tasks. HR Administrator is provided with facility of Adding Employee in to the company. He adds the new employee's General details and can also enter his Contact, Skill, Education, Certification, and Project Details. He also has the facility of Viewing / Updating all Employees General, Contact, Educational and other details.

Decision in assigning proper skillful hands for the project is an important issue in HR Module. The HR Administrator should report with the personal holding the necessary skills required for the project assignment. The decision in making analysis about the employee's skills is a prime important before booting in. The proposed system of HR Management is the right software to be incorporated into the Automation of HR Software for helping the organization needs with respect to skillful Human Resource. The Proposed system provides detail general information about the employee along with Educational, skill and other details. It enhances the HR Management in adding, viewing and updating employee's details and generates various reports.

Project background

Employees are the backbone of any company therefore their management plays a major role in deciding the success of an organization. Human Resource Management Software makes it easy for the employer to keep track of all records. This software allows the administrator to edit employees, add new employees as well as evaluate an employee's performance. Employees can be managed efficiently without having to retype back their information in the database. You can check to see if there are duplicate positions/employees in the database.

A flexible and easy to use Employee Management software solution for small and medium sized companies provides modules for personnel information management thereby organization and companies are able to manage the crucial organization asset – people. The combination of these modules into one application assures the perfect platform for re-engineering and aligning e

Human Resource processes along with the organizational goals. This system brings about an easy way of maintaining the details of employees working in any organization.

It is simple to understand and can be used by anyone who is not even familiar with simple employees' system. It is user friendly and just asks the user to follow step by step operations by giving easy to follow options. It is fast and can perform many operations for a company.

Scope

The project is confined to be run on any web server either on internet or intranet. The application makes sure that the proper user interface is provided to the communicating parties to work easily on the application.

The scope of this project will be limited to the following:

- Employee profiles: Employees will have access to their personal profiles and will be able to

edit their details.

- Electronic leave application: Complete elimination of paperwork in leave management by enabling an employee apply for leave as well as check their leave status through the system. This will also enable the HR manager to accept/reject leave application through the system
- Report generation: The HR manager will be able to generate timely reports in order to monitor employees and this can be used for performance appraisals. The reports will be have all the information of an employee from educational background, trainings attended, projects done as well as technical skills.
- Recruitment Process: The admin will add an employee and a default password and employee id will be generated and sent to the new employees' email. The HR manager will then have the ability to add an employee's information to the database.

Objective

In this world of growing technologies everything has been computerized. With large number of work opportunities, the Human workforce has increased. Thus, there is a need of a system which can handle the data of such a large number of Employees. This project simplifies the task of maintaining records because of its user-friendly nature. The objective of this project is to provide a comprehensive approach towards the management of employee information. This will be done by designing and implementing an HR management system that will bring up a major paradigm shift in the way that employee information is handled.

The objectives of this system include:

- Design of a web based HR management system to fulfill requirements such as project management, leave management, report generation to assist in performance appraisal, ESS and employee trainings.
- Well-designed database to store employee information.
- A user friendly front-end for the user to interact with the system.
- To develop an application that deals with the day to day requirement of any organization.
- To enable the end-users as well as the organization come out with an essay to handle application of the Human Resource Management.

Project Overview

The Project Human Resource Management System is a complete web application designed on PHP technology. The user interface is designed using HTML, CSS, and PHP while the server-side programming is done completely using PHP and My SQL is used as database. Each employee had an Employee ID and password through which he can log in. Depending on the type of employee, either as user or admin, the employee is logged in or accordingly various privileges are

granted to him to carry out various task through the application. The application makes sure of the security services and other privacy policies. Its grants privilege to various employees to perform their work as per hierarchy in the organization.

Expected Benefits

This system is expected to be user friendly and will offer easy access to data as well as services such as online leave management, e-recruitment, and timely report generation, monitoring employee trainings, task management, project management and employee tracking. The employee is expected to have direct interaction with this system through a password protected user account therefore proposed system is web based to enable accessibility from any location as long as internet connectivity is available.

This direct interaction with the system will enable employee self-service. Without an employee management system, it's a tedious job for the human resource department to keep track of each and every employee and even harder for a project manager to assign tasks to the project team. The HR management system will be developed to provide information of employees and many other facilities at the click of a bottom

Requirements and Constraints

Functional Requirements: Authentication

- Login- The user can login to the HRS system with his/her username and password.
- Logout- The user can log out from the HRS system.
- Login failure- If the user does not exist in the database or the user has not yet being authorized by the HRSS admin.

Authorization

- User role check- After logging in, the user role will be checked from the database and the user interface will be displayed according to their role.

Process Data

- Display- User with defined roles can display the content of the database. Being more specific, employee can only view his/her personal information. HOD can not only see his/her personal information but also employee's information who are under his/her department or school. Admin and HR can display their personal information and all employees' information.
- Edit- A user with employee role can edit his/her specific personal information. Dean or HOD can only edit employees' personal information that is under his/her coverage except user role type. Admin can edit all information related to all employees' including their

user role type.

- Search- User with Dean/HOD role can search the content of database for the employees' who are under his/her coverage. HR and admin roles can search all the employees' information in the database. Search feature works on specific keywords showing employee's characteristics, peculiarities, skills, features, and etc. For example, HR wants to find employees' who are well trained in "Java Programming Language". He/she will write the specific keyword in the search bar and press the available search button. Afterwards, he/she will find a list of all the employees' who know "Java Programming".
- Update authentication- This feature can be used only by admin role type. Admin can update the role type of a specific user. For example, an employee got promotion and his role type will be changed from employee role id to HOD or Dean role. Admin will be able to update this authentication mechanism

Leave Application/Approval

- Leave application- The user can be able to fill in leave application form in the appropriate fields.
- Leave approval- The admin can be able to approve leave applications based on the reasons stated, length of leave as well as available HR on a department.
- Leave days accrued- The user shall be able to check the number of leave days accrued.

Recruitment

- Add new employee- HR role type is able to add a new employee to the database. The new employee will have all the required personal information related to him/her. The new created employee will have an id.
- Add a new user- After a new employee has being created by HR role, admin role is responsible for creating a new user by the specified id assigned in the "Add a new employee" feature. The unique id will be given by the system. Admin will assign a new role such as employee, Dean, HOD, HR, and admin to the new created user.
-

Report generation

- Report generation- HR shall be able to generate a report in pdf format for each employee based on the information in the database.

Trainings and Task Management

- Trainings: The HOD shall create trainings and assign employees that are required to attend the trainings as well.
- Tasks: HOD shall assign tasks to employees in his/her department

Software Requirements

Since HRSS application is a web-based application, internet connection must be established. The HRSS software personal database model will support MySQL environment as DBMS

Software Requirements:

- The designing of the project requires an HTML editor (Macromedia Dreamweaver).
- A web server to host the application. WAMP was used which has a complete package including PHP scripting, Apache server and My SQL for database.

The client machine using the application requires a web browser to access and run the application

Hardware specification

- ✓ Processor: x86 compatible processor
- ✓ RAM: 512 MB or greater
- ✓ Hard Disk: 20 GB or greater

- ✓ Monitor: VGA/SVGA
- ✓ Keyboard: 104 keys standard
- ✓ Mouse: 2/3 button. Optical/ Mechanical

User characteristics

Every User:

- Should be comfortable with basic working of the computer
- Must have basic knowledge of English
- Must carry a login ID and password used for authentication

Constraints

- The GUI is restricted to English
- Login ID and password used for identification of user/administrator. There is no facility for a guest login

Chapter 2

Description of the Technology and Human Resource Management

PHP

PHP is a general-purpose scripting language originally designed for web development to produce dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document. It also has evolved to include a command line interface capability and can be used in standalone graphical applications. PHP can be deployed on most web servers and as a standalone interpreter, on almost every operating system and platform free of charge. A competitor to Microsoft's Active Server Pages (ASP) server side script engine and similar languages, PHP is installed on more than 20 million websites and 1 million web servers.

PHP was originally created by Rasmus Lerdorf in 1995. The main implementation of PHP is now produced by The PHP Group and serves as the de facto standard for PHP as there is no formal specification. PHP is free software released under the PHP License which is incompatible with the GNU General Public License (GPL) due to restrictions on the usage of the term PHP.

While PHP originally stood for "Personal Home Page", it is now said to stand for "PHP: Hypertext Pre-processor", a recursive acronym.

My SQL

My SQL is a relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases. It is named after developer Michael Widenius' daughter, my. The SQL phrase stands for Structured Query Language.

The My SQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. My SQL was owned and sponsored by a single for-profit firm, the Swedish company My SQL AB, now owned by Oracle Corporation.

Free-software-open source projects that require a full featured database management system often use My SQL. For commercial use, several paid editions are available, and offer additional functionality. Applications which use My SQL databases include: Joomla, WordPress, Drupal and other software built on the LAMP software stack. My SQL is also used in many high-profile, large-scale World Wide Web products, including Wikipedia, Google (though not for searches) and Facebook.

Proposed System

Human Resource Support System (HRSS)

A Human Resource Support System (HRSS) refers to the systems and processes at the intersection between human resource management (HRM) and information technology. It merges HRM as a

discipline and in particular its basic HR activities and processes with the information technology field, whereas the programming of data processing systems evolved into standardized routines and packages of enterprise resource planning (ERP) software. On the whole, these ERP systems have their origin on software that integrates information from different applications into one universal database. The linkage of its financial and human resource modules through one database is the most important distinction to the individually and proprietary developed predecessors, which makes this software application both rigid and flexible.

Leave System (HRMS) maintains the leave details of employees. Employees record their attendance in the system at the beginning and end of each working day. The system calculates the number of working days and the number of absent days and provides inputs to the payroll department. Leave applications are reconciled with the attendance records and the exceptions are highlighted. System caters to multiple types of leave (casual, privilege, sick etc.) and provides workflow for approval of leave applications. Employees can check their own leave and attendance records online.

Advantages of proposed system

- Very simple and easy to implement
- Protection of data
- ensure data accuracy
- Administrator discretion and control over the entire system
- online facilities
- Reduces manual data entry
- Greater efficiency
- User friendly and interactive
- Less time consuming

Purpose:

The function of Human Resources departments is generally administrative and common to all organizations. Organizations may have formalized selection, evaluation, and payroll processes. Efficient and effective management of "Human Capital" progressed to an increasingly imperative and complex process. The HR function consists of tracking existing employee data which traditionally includes personal histories, skills, capabilities, accomplishments and salary. To reduce the manual workload of these administrative activities, organizations began to electronically automate many of these processes by introducing specialized Human Resource Management Systems. HR executives

rely on internal or external IT professionals to develop and maintain an integrated HRMS.

Before the client–server architecture evolved in the late 1980s, many HR automation processes were relegated to mainframe computers that could handle large amounts of data transactions. In consequence of the high capital investment necessary to buy or program proprietary software, these internally developed HRMS were limited to organizations that possessed a large amount of capital. The advent of client–server, Application Service Provider, and Software as a Service SaaS or Human Resource Support Systems enabled increasingly higher administrative control of such systems. Currently Human Resource Support Systems encompass:

1. Work Time
2. Appraisal performance
3. Benefits Administration
4. HR management Information system
5. Recruiting
6. Training/Learning Management System
7. Performance Record
8. Leave Management
9. Employee Self-service

The work time module gathers standardized time and work-related efforts. The most advanced modules provide broad flexibility in data collection methods, labor distribution capabilities and data analysis features. Cost analysis and efficiency metrics are the primary functions.

The benefits administration module provides a system for organizations to administer and track employee participation in benefits programs. These typically encompass insurance, compensation, profit sharing and retirement.

The HR management module is a component covering many other HR aspects from application to retirement. The system records basic demographic and address data, selection, training and development, capabilities and skills management, compensation planning records and other related activities. Leading edge systems provide the ability to "read" applications and enter relevant data to applicable database fields, notify employers and provide position management and position control. Human resource management function involves the recruitment, placement, evaluation, compensation and development of the employees of an organization. Initially, businesses used computer based information systems to:

- Produce pay checks and payroll reports;
- Maintain personnel records;
- Pursue Talent Management.

Online recruiting has become one of the primary methods employed by HR departments to garner potential candidates for available positions within an organization. Talent Management systems

typically encompass:

- Analyzing personnel usage within an organization;
- Identifying potential applicants;
- Recruiting through company facing listings;
- Recruiting through online recruiting sites or publications that market to both recruiters and applicants.

The significant cost incurred in maintaining an organized recruitment effort, cross posting within and across general or industry specific job boards and maintaining a competitive exposure of availabilities has given rise to the development of a dedicated Applicant Tracking System, or 'ATS', module.

The training module provides a system for organizations to administer and track employee training and development efforts. The system, normally called a Learning Management System if a standalone product, allows HR to track education, qualifications and skills of the employees, as well as outlining what training courses, books, CDs, web based learning or materials are available to develop which skills. Courses can then be offered in date specific sessions, with delegates and training resources being mapped and managed within the same system. Sophisticated LMS allow managers to approve training, budgets and calendars alongside performance management and appraisal metrics.

The Employee Self-service module allows employees to query HR related data and perform some HR transactions over the system. Employees may query their attendance record from the system without asking the information from HR personnel. The module also lets supervisors approve O.T. requests from their subordinates through the system without overloading the task on HR department.

Many organizations have gone beyond the traditional functions and developed human resource management information systems, which support recruitment, selection, hiring, job placement, performance appraisals, employee benefit analysis, health, safety and security, while others integrate an outsourced Applicant Tracking System that encompasses a subset of the above.

Chapter 3

Design Principles & Explanation

Modules

The list of modules incorporated with Human Resource Management System application is:

Login and Registration Module

Delete, View and Update Employee Information Module

Employee Salary and Payroll Module

Module description

Login and Registration Module

This module enables employee to log in and access the details. It also enables admin to register any employee and update employee's general information along with contact, qualification and other details. The employee registration can be done only buy the admin type of user having this privilege.

Delete View and Update Employee Information Module:

This module has control over the system and able to manage the human resource by adding, viewing and updating employee information. This module is based on hierarchy and employees can see their profile and profiles of other employee who are in lower hierarchy.

Employee days

This module deals with employee days. Any employee can see his leave details. The employee having admin type of privilege can see his own days

Dataflow diagrams

Data flow diagram is a pictorial representation of the system in which flow of data from one process to another process is described. A Data Flow is composed of:

1. Data movement shown by arrows.
2. Transformation or process of data shown by named circle or rounded rectangle.
3. Sources and destination of data represented by named rectangle.
4. Static storage or data at rest denoted by an open rectangle that is named.

Level-0 DIAGRAM

It's a diagram, which shows whole system at once. The sources in level-0 diagram for this system are admin and user who are linked to the Project Module. The level-0 Diagram is shown in Fig (0):

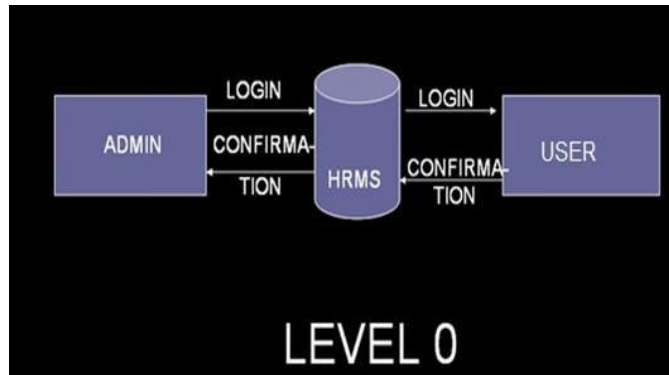


Fig (0) LEVEL1 DIAGRAM:

User login process is the Level-1 DFD shown in Fig (1). In this level, administrator or the user has to give out the login details i.e. Employee id and password and then only he can be logged on. The id and password given are checked from the data stored in the database. The table that contains the login data is referred for checking the details if the admin id and password given are correct then he can be logged on to the site. Depending on the type of user i.e. either admin or a normal user, he is provided with various privilege to work on the HRMS application.

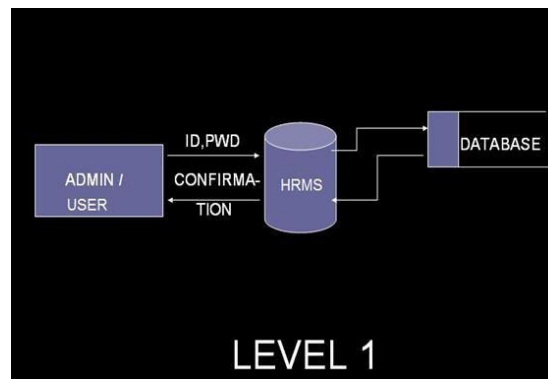


Fig (1)

LEVEL -2 DIAGRAMS:

The different processes done by user is shown in Level-2 DFD as shown in Fig (2).

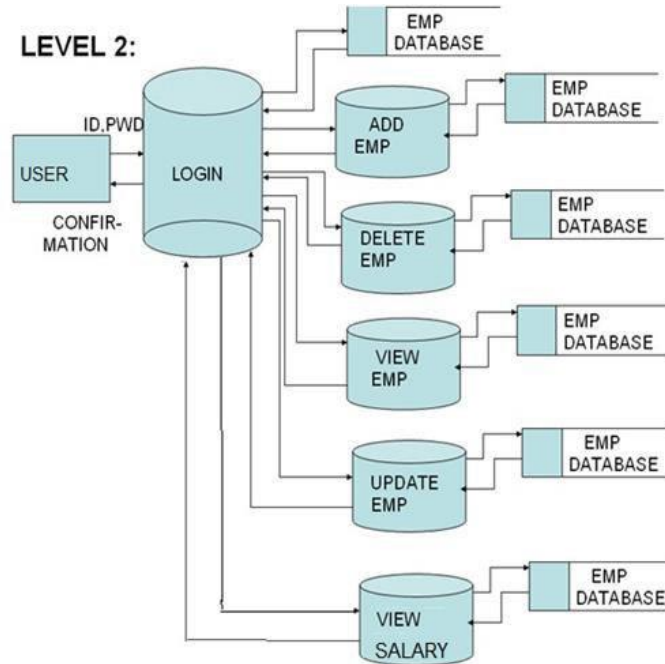


Fig (2)

Data dictionary

The most important aspect of the system is data design. The data must be organized according to the system requirements. The database approach is used to store and organize the data in developing the system. The database is an integrated collection of data stored in different types of tables. My SQL was used as database in this project. Some general objectives in establishing a database are as follows:

- Integrating all data
- Incorporate updating easily
- Provide data security from unauthorized users

TABLENAME: emp_details

SNO	COLUMN NAME	DATA TYPE	DESCRIPTION
1	empid	varchar	Employee Identification
2	fname	varchar	Employee First Name
3	lname	varchar	Employee Last Name
4	address	varchar	Address Of The Employee
5	drpdd	varchar	Date of birth
6	drpmm	varchar	Month of birth
7	drpyyy	varchar	Year of birth
8	email	varchar	Email
9	phone	varchar	Phone No
10	quali	varchar	Qualification
11	desig	varchar	Designation
12	deptno	varchar	Department no
13	txtwpassword	varchar	Password
14	gender	varchar	Gender
15	mstatus	varchar	Status
16	sal	number	Salary
17	utype	varchar	Admin/user

A view of the Exported Database

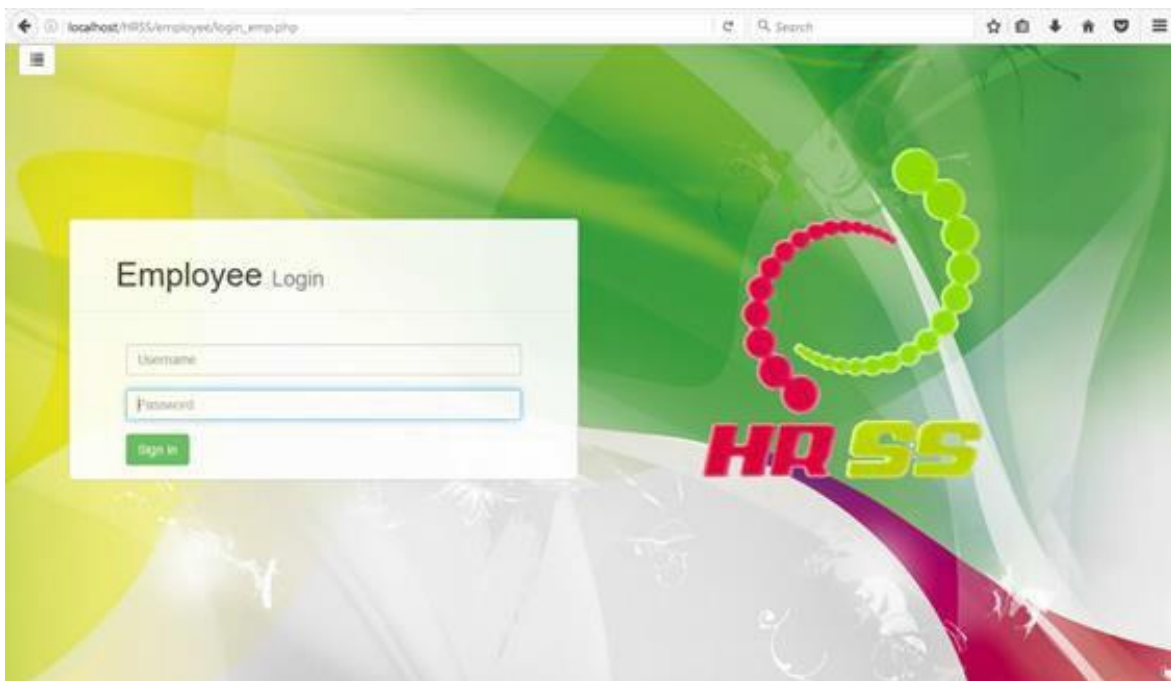
Chapter 4

I/O SAMPLES

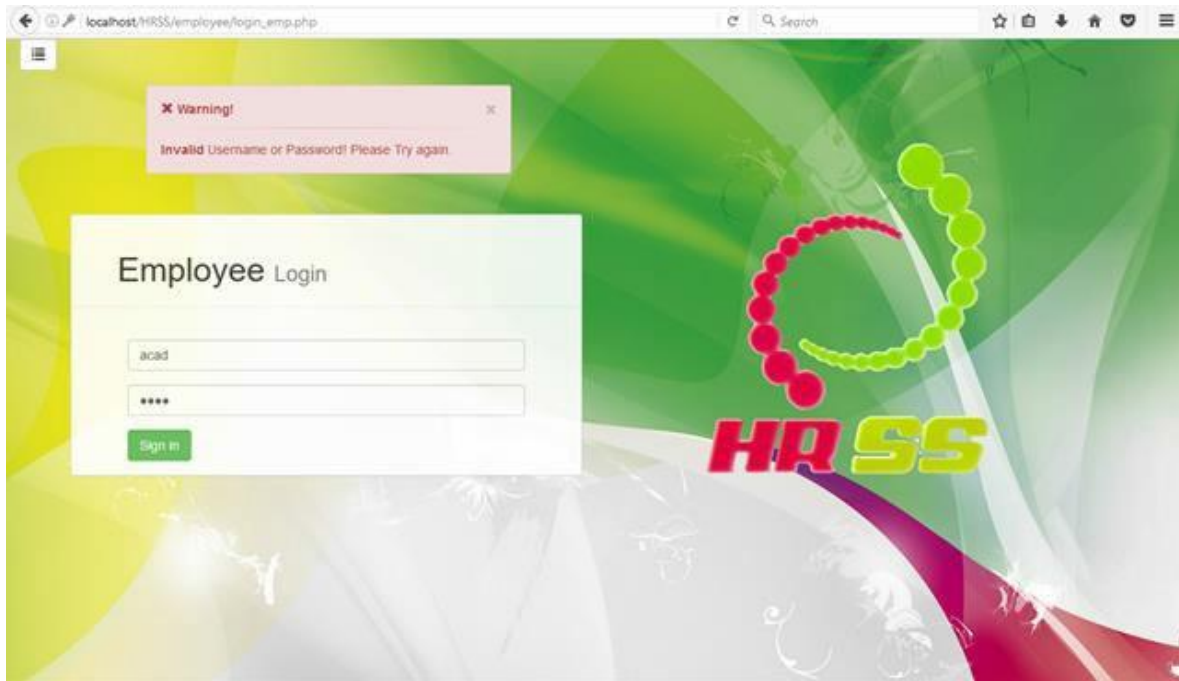
The Application

The objective of this project is to implement a web-based application that examines the issue related to dynamic Human Resource Management for a fictitious consulting firm. The application provides features such as the employee database, company database, interview scheduling, contracts management and performance report. Some screenshots taken while running the application is shown below. The functionalities are also explained according

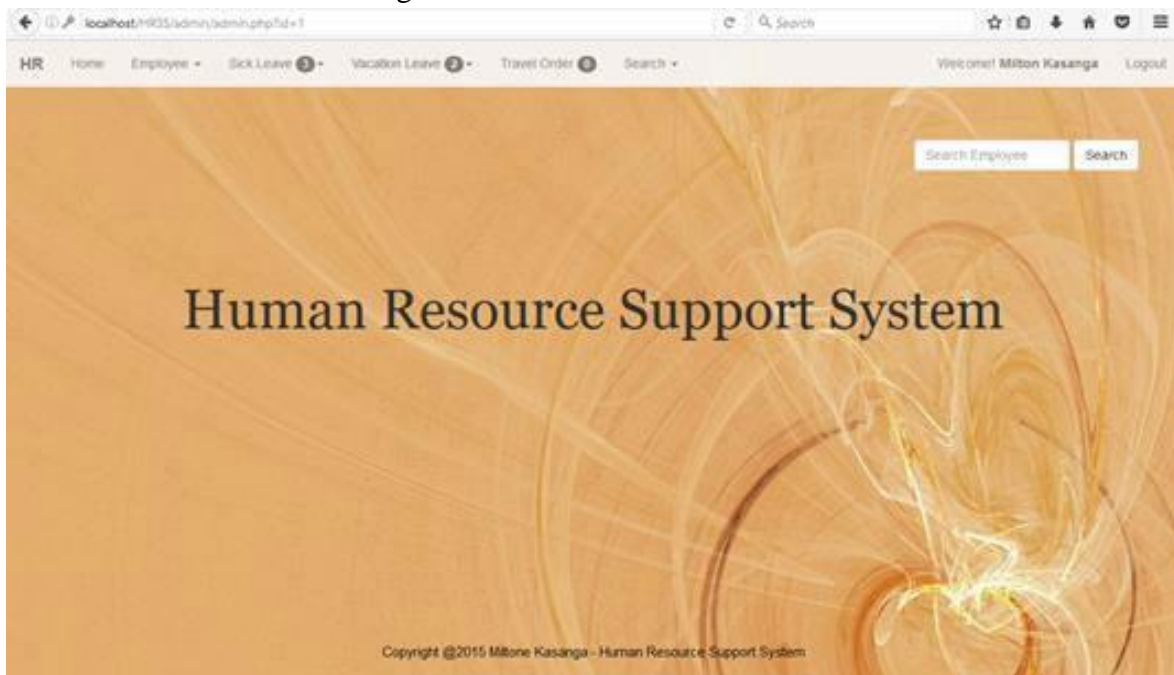
SCREEN 1 this screen is the home page. User are required to enter their Employee ID and Password. To gain access to the system every user should be authenticated. When the user types the website's URL in the browser, the login page is displayed. The login page is shown below



SCREEN 2. This screen appears if the user enters wrong password



SCREEN 3. This screen appears if the user is logged in successfully as user/admin. If the user logs into the system as an Administrator, the user is directed to the page with the Administrator menu. The Administrator menu is shown in Figure below



An authenticated Administrator (HRM) can update his/her personal information, add new user profiles, and terminate existing user logins. Administrator can also add new or update existing employee. The Administrator can also view user profiles. Figure below shows the page to update personal information. The page is displayed with the current user information stored in the database. If the update button is selected, the new information is updated in the database and the page is displayed again with this updated information. If the back button is selected the page is redisplayed with the original information.

The screenshot shows a web browser window with the URL `chongwesec.net/admin/add_emp.php`. The page title is "Add Employee". The navigation menu includes "HR", "Home", "Employee", "Sick Leave 4", "Vacation Leave 2", "Travel Order 1", and "Search". The user is logged in as "Milton Kasanga".

Employee Information

Employee ID:

Full Name: First Name Middle Name Last Name

Birth of Date: Month Day Year

Age: Age **Gender**: Gender

Address:

Contact Number:

Insurance Information

SSS Number: **Pagibig Number**: Pag-ibig Number

Phil Health Number: **TIN Number**: TIN Number

Employee Status

Chapter 5

Conclusion

The project of Human Resource Management System is the requirement of almost all organization to manage the men power in proper and efficient manner as well as dealing with the Member addition process, Edit, delete, search process for employee. This project is successful in meeting the goals of this concern, where the manual system was not to the full satisfaction considering the rapid growth in a computerized world. By computerizing, the accuracy of the data recording has increased. This system provides precise enlistment of employee's information. Data can be retrieved as and when required. Throughout the training, I was able to put in my efforts to make the project a success. The environment provided enabled me to work in a positive manner.

In the course of the implementation of this application many lessons have been learned including designing an interface, database access technique and programming for the web. This application helped in understanding the different technologies used to create interactive web pages.

Chapter 6

Future Scope

Future scope of the Application

The Human Resource Support System is an ambitious project. It can be various other aspects of Human Resource System like training, recruitment etc. I am very thankful for being provided this great opportunity to work on it. This project had gone through various research works. On the basis of the research work, I have successfully designed and implemented this HRMS project.

Software scope

- Extensibility
- Reusability
- Understandability
- Cost-effectiveness

There are some limitations for the current system to which solutions can be provided as a future development: At present this product is run on a web server and can be accessed by everyone. It is deployed on a web server so that anyone connected to the Internet can access it by entering in web browser <http://www.chongwesecondary.net/hrss>

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Chapter 7

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- [2] Website: <http://www.php.net> and <http://www.phpfreecode.com/>
- [3] Software Engineering by Roger Pressman
- [4] HTML, CSS and JS from <http://www.w3schools.com>