SOFTWARE PERSONNEL MANAGEMENT SYSTEM

Objective

To implement a software for software personnel management system

Scope Of the Project

Software system that will allow the human resource department to manage its employee in a better way. When needed, it will take just a few second to find out the background of an employee and his/her contribution to the organization, it will also facilitate keeping all the records of employee, such as their data of leaving. So all the information about an employee will be available in a few seconds, it will also make it very easy to generate statistical data or custom data, line finding a certain set of employee, overall it will make human resource management an easier job that the human resource department

Project Description

Human Resource management system project involves new and/or system upgrades of software of sending to capture information relating to the hiring termination payment and management of employee. He uses system to plan and analyze all components and performance of metrics driven human resource functions, including recruitment, attendance, compensation, benefits and education. Human resources management systems should align for maximum operating efficiency with financial accounting operations customer relationship management, security and business lines as organization.

Requirements

A requirement is defined as a condition or capability needed by a user to solve a problem or achieve an objective

Software System requirement are often classified in

- Functional requirement
- Non-functional requirement
- Hardware requirement
- Software requirement
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a) Functional Requirement

A functional requirement describes an interaction between its environments. Functional requirements describe the system function in details, its input and output, exception etc.

The functional requirement are as follows

Analysis

In this phase, the project requirement is analyzed and the availability of the requirement is seen

Design

The design of a project is made by the project manager

Implementation

The construction of project is done and coding is developed

Testing

Testing activities are made several types of testing is carried on

Maintenance

In this the software maintenance and the ways to avoid the drawback of the software is made.

Deployment

IT is the process of installing and kick starting of the program

b) Non-functional Requirement

Non-functional requirement are requirements which are not directly concerned with the specific functions delivered by the system. They relate to emergent system properties such as reliability, response time and store occupancy. They relate to the system as whole other than to individual system features which means that they are more critical than individual functional requirements

The non-functional requirement are as follows
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Speed

This software designed as a high speed software

Size

The size of this software is about 100MB

Portability

This software can be easily portable

Reliability

The rate of failure of this software is very low

c) Hardware requirement

Processor: Pentium IV
Harddisk: 40GB
Ram: 512MB
DVD drive: 1

d) Software requirement

Operating System: Windows xp
Front end tool: Rational Rose Enterprise suit
Back end tool: Oracle 10

Module Description

The Modules of human resource management is described as follows

Payroll Module

The payroll module greatly reduces the workload of the HR department by automating the payroll process, allowing HR to ensure the payroll functions are completed on time and without errors.
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Once the attendance data is fed into the system, the payroll module automatically calculates payment amounts and various deductions such as income tax before generating paychecks and employee tax reports.

Recruitment Module

Recruitment and selection refers to the chain and sequence of activities pertaining to recruitment and selection of employable candidates and job seekers for an organization. The human resources department of large organization, business government offices and multilateral organization are generally vested with the responsibilities of employee recruitment and selection.

Training Module

Training and development is one of the areas in which this is performed. Consisting of educating and grooming talent when performed successfully, training and development can lead to a happy and productive group of workers.

A training and development department typically consist of the head of training and development, a training manager, a training specialist and a training co-ordinator.

Domain Module

The domain module is the representation of a real situation conceptual class not software objects. The term does not mean set of diagrams describing software class, the domain layer of software architecture or software object with responsibilities.

Human resource management (HRM) is the understanding and application of the policy and procedure that directly affect the people working within the project team and working group. These policies include recruitment, retention, reward personnel development training and career development. It include the activities of human resources planning, recruitment, selection, orientation, training, performance appraisal, compensation and safety.

Partially Layered Architecture
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The HR update the salary, the employee in turn views the salary details allotted. HR is responsible for training the employee and updates the training details simultaneously. These details updates the time period of the training. The employee gives this performance and salary increment is reviewed by HR and given accordingly.

Logical Architecture

The logical Architecture is large scale organization of the software class into package subsystem and layers. It is called logical Architecture because there is no decision about how these elements are deployed across different operating system processor or across physical computers in network.

Risk Activities

Risk management is concerned with identifying risks and drawing up plans to minimize their effects on a project.

A risk is a probability that some adverse circumstance occur:

- Project risk affect schedule or resources
- Project risks affect the quality or performance of or procuring the software

Several stages:
- Risk Identification
- Risk Analysis
- Risk Planning
- Risk Monitoring

Human resource activities lead to four important implications for risk management:

First, the activities are necessary to keep human resources in harmony with the risk management tools adopted by the management team.

Second, human resource calamities, e.g. chronic illness, accidental death, can hamper carefully made and appropriate risk management decisions.

Third, no management team stays together indefinitely.

Fourth, human resource performance evaluation should be tied to risk management.
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**Gantt chart**

A Gantt chart is a type of bar chart that illustrates a project schedule.

Gantt chart illustrates the start and finish dates of terminal element and summary element of the project.

**Pre-function and Post-function in use cases**

**Payroll**

**Pre-function**

Verifies the designation of the employee

**Post-function**

Credit the payment to the employee

**Recruitment**

**Pre-function**

Verifies the educational qualification and examines the knowledge of the employee

**Post-function**

Issues appointment order to the employee

**Training**

**Pre-function**

Allots training head for each team

**Post-function**

Allows training to work in their desired designation

**Time and Employee management**
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Pre-function
    Analyze employee tie keeping information for the purpose of payroll

Post function
    Issues memo is any employee found irregular

Benefits Administration

Pre-function
    Keeps track of talent of employee

Post function
    Allows the employee to take part in the benefit program

HR management

Pre-function
    Analysis of application data through to the basic demographic data of employee

Post function
    Keeps track of training and development of employee

UML Package Diagram

Recruitment involves defining the employee salary and also motivates them. Training improves the performance and time management of an employee. The performance of an employee decides whether or not an employee should get a salary increment.

Technical Service Layer

This shows the interaction between the actors or object in the sequence diagram, the forward arrow from the HR to employee indicates the training details being updated. The employee during training and after training gives his performance, based on which the HR decides on giving the employee a salary increment.
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**Domain Object Layer**

After composing the technical service layer from partial layer architecture. Since we are going to generate the coding in Java/VB. The project domain is experienced under Java/VB using Rational rose software.

**User Interface Layer**

This layer shows the interface with the sequence diagram by changing the sequence symbol. The sequence symbol is replaced by the actor symbol which shows the interface between use case and sequence diagram.
Use-case Diagram

The HR of an organization involves recruitment training, monitoring and motivation of an employee. The HR also involves giving salary as observed in the payroll sheet. The employee undergoes training, receives the salary, gives the expected performance and manages time in order to complete a given task within the required period.
Class Diagram

The employee of an class consist of attributes such as training, salary, performance and time management of his regular activities.
**Sequence Diagram**

The sequence diagram is constructed for employee and HR regarding training details and salary details of the employee. The HR will verify the details of the employee and update the salary for each employee. The employee can view his salary data. If employee needs to undergo any training the he will be receiving the training information and training period. After completion of the training period HR will issues salary increment.
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Partial Layered Architecture
The collaboration diagram is similar to the sequence but the series of activity are numbered instead of timing sequence. The employee can view his salary and get the training information from the HR. The HR will update the training, salary for the employee.
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5: Performance

3: Training Information

2: View Salary Details

4: Training Update

1: Update Salary Details

7: Salary Increment

6: Training Period

Employee: <Actor Name>

HR: <Actor Name>

Training Details

Salary Details
State Transition Diagram

States of object are represented as rectangle with round corner, the transaction between the different states. A transition is a relationship between two state that indicates that when an event occur the object moves from the prior state to the subsequent.
Activity Diagram

The activity diagram notation is an action, partition, fork join and object node. Most of the notation is self explanatory, two subtle points
Once an action finished, there is an automatic outgoing transaction. The diagram can show both control flow and data flow.

Component Diagram
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The HR recruits, motivate and monitor the employee, HR also update the salary details and training details for reference. The employee are those who are recruited by HR and work for the company. The training details provide employees with training details which is updated by HR.
Deployment Diagram

HR recruits employee for a company employee recruited by HR goes under training before actually working. Training period is given to the employee with the training details. The salary details for the employee are provided.
Implementation

After completing the eight diagram, we have to generate the code. For code generation, go to tools and select the language in which you are going to generate the code. We can use languages such as Java/J2EE sub-options, select generate code. So that code will be generated. We have to generate codes for each diagram individually.

SOURCE CODE:

HR.JAVA

//Source file: Z:\SACHIN\HR.java

class HR extends Employee {

    private int CurriculumVitae;
    private int MonitorEmployees;
    private int ProvideSalaryIncrement;
    private int Motivate;

    /**
     * @roseuid 4DSE0BDF005F
     */

    public HR() {

    }

    /**
     */
}

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/**
@roseuid 4D2D35EE0105
*/

public void Recruit()
{

}

/**
@roseuid 4D2D36120008
*/

public void Monitor()
{

}

/**
@roseuid 4D2D361703C1
*/

public void Increment()
{

}
**EMPLOYEE.JAVA**

//Source file: Z:\SACHIN\Employee.java

public class Employee
{
    private int Commitment;
    private int BankAccounts;
    private int Regularity;
    public HR theHR;

    /**
     * @roseuid 4D5E0BE0006E
     */
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*/

public Employee()
{

}

/**
@roseuid 4D2D36DE0372
*/

public void Training()
{

}

/**
@roseuid 4D2D36F20370
*/

public void Salary()
{

}

/**
@roseuid 4D2D36F80062
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```java
public void Performance()
{

}
```

**SALARYDETAILS.JAVA**

//Source file: Z:\SACHIN\SalaryDetails.java

```java
public class SalaryDetails extends HR
{
    private int createBankAccountToDepositSalary;

    /**
     * @roseuid 4D5E0C0C036C
     */
    public SalaryDetails()
    {

    }
}
```
/**
 * @roseuid 4D2FDFEC0109
 */

public void salary()
{

}

Testing

After generating the code for each diagram we have to test it, for testing go to tolls and then select quality architecture sub options such as unit test, scenario test will be displayed we can perform testing operations using those tools.

Conclusion

Thus above project for software personnel management system has been successfully executed and codes are generated.