Indian Institute of Information Technology, Vadodara

College HR Management and Payroll System

Technical Proposal

CS301 Software Engineering Project – Autumn 2015

team #02 - ninEngineers

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1. Introduction

We, as future software engineers, want to develop a software solution to address the effort and time-consuming manual operations of existing payroll management by incorporating the software engineering practices.

Payroll system is the heart of the human resource management system of an organisation. And there are lots of HR and payroll management systems that serve organisations under different circumstances. But, most of them are static and require modifications according to the organisational needs.

Our institute is in its developing phase and the existing HR and payroll system is managed manually by the administration. Besides, current course on Software Engineering expects us to do a project that will help our institute somehow. The objective is to provide a system which manages the employee details, the payroll activity done in the college depending upon the employees attendance and its calculation, which is very huge. The administration staff will consume less amount of time through this computerised system rather than working manually.

The system will take care of all the payroll activities like managing each employee's attendance, the number of leaves taken by that particular employee and calculating the salary in a very quick manner and avoiding miscalculations.

Data storage would be easier. Paper work will be reduced and the college staff could spend more time in the progress of institute rather than on this tedious work. The system would be user friendly and easy to use. All the important data will be stored in the database which will be secured through two step authentication.

2. Executive Summary

Assistance and ease of the workload of the administrative staff of the Indian Institute of Information Technology Vadodara (IIITV) is the main goal of the software solution we are providing.

A user friendly quality product would be our top priority throughout this development. We would be able to make a comprehensive system with customizable parameters to compute various pays and salaries through web application. We would also keep a close check on efficient data manipulation, data security, and design a simple but elegant user-interface.

3. Project Description

The payroll system for IIITV will calculate the monthly payrolls of all the employess of the institute, which includes two different types of employees, the administrative employees and the teaching staff. It will also manage the human resource activities.

The design of the system includes a general database with the following attributes:
- New Registration
- Login Details
- User Details
- New Records
- Delete Records
- Salary Information
- Edit Salary
- Delete Salary

The payroll system will have the following attributes for all the employees:
- Employee ID
- Employee Name
- Employee Category
- PAN Number
- Bank Account Details
- Grade
- Basic Pay
- Allowances
- Deductions
- Increments
- Bonus

The human resource management system will have the following attributes for all the employees:
- Employee ID
- Employee Name
- Employee Category
- Grade
- Basic Pay
- Allowances
- Employee Category
- Increment Year
- Year when bonus or promotion granted

Features:

Registration: As soon as the new employee joins the college, a unique username and password is provided to him by the Admin.

Workdays: The authority to add the total number of working days of the college per month lies with the Admin.

Calculation of Salary: The attendance of each employee is recorded and their salary is calculated on the basis of the leaves they have taken. A payslip will be generated as soon as the salary is paid to the employee.

Salary Report: The previous salary record and the payslip details are saved so that whenever an user wants to look through the salary given to an employee for any particular month or year, he can easily do so.

Logout: After logging out of the application, further operations cannot be performed.

4. Project Plan/Schedule

i. Cost Estimation

We, as a part of this institute, would be using the resources available within the institute efficiently and judiciously. We are aware of the fact that quality product would only be developed with proper planning and discipline. In this regard, our team has already chalked out the various necessary stages of the entire project. But, what is required the most is the support and coordination from the administrative staff of the institute.

ii. Schedule and Milestone determination

Stage	Projected timeline
1. Requirement gathering	02-09-2015 to 09-09-2015
2. Requirement Analysis and Test cases	10-09-2015 to 16-09-2015
3. SRS Documentation	17-09-2015 to 23-09-2015
4. Structural Design of modules	24-09-2015 to 30-09-2015
5. Coding and Testing, Integration	01-10-2015 to 27-10-2015
6. Final Testing	28-10-2015 to 05-11-2015

iii. Project Staffing

The group has been divided in three subgroups. One will look after the front-end design of website. Other team will look after its back-end and the third team would be engaged in database modelling and testing. The rest of the part of the software development process would be undertaken by the team as a whole. Furthermore each team-member is also assigned a particular task with a deadline to complete. The whole work will be phase wise monitored to ensure the timeliness delivery of the project.

iv. Quality Control

Our top priority would be the delivery of a quality produt. The system's security and integrity would be ensured at every phase and in the end. We have already chalked out number of test cases to figure out system's accuracy, efficiency and integrity. Furthermore, each module will be separately tested for any errors or inefficiencies. Once detected, they would be removed to make the system stable and accurate.

Despite all the precautions, certain errors can deliberately creep in. So we will ensure that system testing would be done by people other than team members, including the administrative staff.

5. Project Management and Structure

6. Maintenance Plan

A user manual would be provided to give the idea of how to use the system. It would contain brief idea of every functionality of the software. Apart from that the whole team will be closely monitoring the system for any error during its deployment phase. After deploying the system, a backup database would also be created in order to come out of system-failure situation from time to time.
However we will try to make our software more flexible so that incorporating the changes would not prove to be a difficult task.

7. Socio-Economic Benefits

- **Cost effective**

  As the software we are creating is a part of our course, there would not be any overhead in the form of cost incurring for building the software. Besides that, the software will be self-sustaining.

- **Readymade payslips**

  Creating payslips for each and every employee takes up a lot of time and effort. By this software, manual labour to create the payslips for each employee will be reduced. The payroll software would do the necessary calculations and create the payslips at the end of the month.

- **Saves Time**

  It obviously takes extra time and extra resources for a college to manage its own payroll manually, but as far as in house management is concerned, payroll software helps to speed every aspect of the payroll process with a range of automated features.

- **Reliable Security**

  By managing payroll with software, a college removes the uncertainty that comes with the sending of private employee information to a third party. You will still need to consider the security of your own IT systems however, though you can be sure with a good payroll solution will accord with the highest IT security standards.

- **Precise Computations**

  It is easy to make mistakes when you manage aspects of payroll manually, but with the right payroll management solution it becomes much more difficult to make such mistakes. Comprehensive validation procedures and checks stop you from entering the wrong information.

- **User Friendly**

  When the right software is used and the payroll demands are modest, anyone with a good understanding of IT can manage a company's payroll requirements effectively. This is good for smaller businesses that want flexibility.

- **Compatibility & Multi device access**

  As the institute will grow, it will be difficult for single person to handle all the account details and the payments. To facilitate the access of the system to many admins, this software would provide online access to the staff who will possess their username and password. As this system will be accessible to many people at a time, it will be easier to manage the whole organization's payroll.

8. References

1. Proposal writing slides by Prof. Asim Banerjee – Technical Writing
2. ABILIS Manual 1. Project Proposal Writing ISBN 952-5526-00-3