Leave and Payroll Management System

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Abstract: *Management of leave and payroll are critical operations for each institution as it has effect on payment of staff memebers of any institution and also to complete it accurately and on time. The Current Leave and Payroll Manager both are paper based systems. Though the attendance is Biometric but still it is not that much efficient in terms of matters related to leave management. Manual payment calculation of staff members is too complex and it even takes lot of time and also requires lot of efforts. So if these processes are automated, it would be of great benefit as it would require less time to calculate the salary of the employees. So, a web application that has a payroll management system is considered as one of the way here. Mmultiple user data access is provided by these system. Users like staff members or administrator can login into the software by writing id and password which are allocated to them from the organization. It involves keeping track of hours worked and can keep a record of employee data including their pay, allowances, deductions and taxes on monthly bases so that fresh definitions are reflected from the month onwards, which leaves all the past data intact. Similarly, for managing the entire task related to leave such as requesting for leave and approval of leave, we have considered leave management system as the solution. The proposed leave and payroll system is much efficient as it provides a user-friendly environment and manual calculation errors are reduced and security is increased. The tasks which can be processed using the Leave Management module are applying for leave, viewing leave history, viewing leave stats and granting/rejecting leave applications. The Payroll Management module consists of tasks such as viewing payroll & tax deductions and automatic tax calculation. This system can make the existing system faster, more productive and would require less manpower to handle it.*
Keywords: *Leave management, Payroll management, Biometrics.*

I.   Introduction

Now a days in most of the organization the work related to leave and payroll management are paper work so to reduce that paper work and to overcome the problem of time management we decided to make a web-portal. We have taken an initiative to develop such a system that will provide the employees of an organization with an online platform to view their leave history and apply for leave. Our portal will have different user accounts like admin, employee, HOD, principal account. After requesting for leave, if the leave is granted by the principal then the applicant will get an automatic notification and he/she can view the information related to his/her pay. In our portal we also have a module where the payroll of employees of an organization can be managed.

The different things of payroll like TDs, PF etc are calculated by this web-application. Employee's can also see their pay and deducted tax. The process of managing matters related to tax is also done in our web-application. The technologies that we are using to make this web-portal are bootstrap, mongo db, blaze, meteor.js. Using these technologies, we have to study and make use of only JavaScript. This consumes our time to learn and use all these languages.

II.   Literature Review

The payroll system implemented by Arjun V. Singh, Siddesh V. Chaphekar, and Yogesh S. Sawant is a desktop based system, which is developed in VB.net as frontend and Microsoft Access 2007 SQL server 2008 as backend. The base of the planned system is a database, which stores all information pertinent to personnel allowances, deductions, taxes and net pay. Features of the planned system are: Importing attendance from Biometric machine, Sending details regarding salary and attendance before finalizing salary, Faculty Management, Overtime Calculation, through mail sending salary slips, HRD programs like offer letter, appointment letter, promotion letter etc, Faculty Birthday notification, generate annual profit-loss of college by using graphs [1]. The payroll system implemented by Kritika Mahajan, Shilpa Shukla, Nitasha Soni is a desktop based system, which is developed in HTML, CSS and JQuery as frontend, C#, ASP.net is used for backend and for data parsing, JSON and Ajax is used. The software for payroll management system service on the cloud is provided as a solution in this paper. Multiple user data access is provided by the system. Features of this system

are: As automatic or computerized calculations are done errors are reduced, more efficient as less time is required, Cost related with accounting software include coaching and program maintenance, Expenses can add up fast with costs for printers, paper, ink and other supplies [2]. The system proposed by Poonamdeep Kaur, Dr. Dinesh Grover aims to explain in simple terms what payroll involves and demystifies the process of payroll. Moreover, it is a powerful tool to streamline the data access for multiple users. As per rights allocated from adding new employee to generate pay slips with clear step by step instructions each user walks through these entire payroll process. Furthermore, the system is flexible to implement changes in pay scales [3].

III. Proposed Work

In an organization the management of leave and payroll need not be a big thing but many a times this become tedious, which finally affects the employees of the organization. Using an automated leave and payroll manager or maintaining a web portal for it can make this process much faster and better. In terms of transparency related to leave management there are some lapses. These lapses can be avoided by using the new proposed system.

We propose to make a web based leave and payroll management system, which can be integrated with other systems with the help of APIs. The organization will also have an option to add new features to their system, which were not selected at the beginning of the system deployment without affecting the integrity of the system. The proposed system will be deployed with feature to automatically integrate and link with biometric attendance system. This will not only make the system faster, but also save the employees from the manual work of integrating the organization's attendance system with the leave and payroll management system. This not only saves time, but also makes the integration far less erroneous since automatic integration can be employed with many features to detect and fix errors during attendance and leave management system integration. The web-application can be basically divided into two modules as per the task for which it is designed.

Module 1: Leave Management:
This module is designed to reduce the process involved in managing the leave or applying for leave application by organization employees. It is also aimed at increasing the level of transparency in the organization by providing all leave related information to organization employees. The system will be designed in a hierarchical form and different type of user accounts will be made available to employees as per this hierarchy.
Some of the different types of user accounts are as follows: -
* Admin account- Admin can view and maintain all the details related to leave and payroll of the employee related to the organization.
* Employee accounts - Employee account can be used by Employees to keep track of their leaves, status of the applications for leave, as well as related information w.r.t to their salary.
* HOD / Section In-charge account- This module is designed basically for Head of Department (HOD) / Section In-charge to view all the applications related to leave which is submitted by his/her department and then take required action such as approve or disapprove. If the application is approved by HOD, it will be send to principal for final approval.
* Principal account - Principal account is used by the higher authority to approve leave. After logging into this module, he/she can view all the applications applied for leave approval. If the leave is approved, then applicant will get an automatic notification. He/she can even view the information related to his/her pay in this account.

Module 2: Payroll Management:
This module is designed to automate the process of managing matters related to Income tax such as calculation of income tax and to manage the payroll of the organization i.e. an organization. The management of income tax related matters is important as it constitutes the deductions that are to be made in the salary. The result obtained from this will be finally reflected in the payroll. This will basically help the payroll module to be faster and more reliable. The different components of the payroll such as TDS, PF, etc. will be calculated by this system. The employees will be able to access their tax related information such as deductions in their salary. The information provided by this module can be accessed by the employees using the account that have been created for them, as described in the 1st module. In the history tab, all the staff of an organization can view their leave and payroll related past records.

IV. Results

We conducted a survey of TCET employees for the existing manual system. Here below the results can been seen of ythe conducted survey where majority of staff shown interest for the online portal.

It will be easier to use a computer based system for applying leave than the current paper based system.
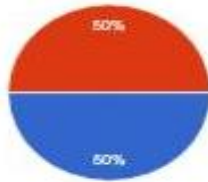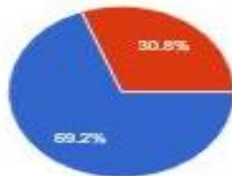
Strongly Agree	13	50%
Agree	13	50%
Can't Say	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

It will be better if employees can view their leave related info anytime they want.
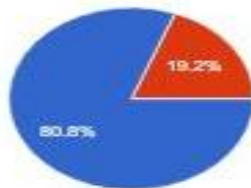
Strongly Agree	21	80.8%
Agree	5	19.2%
Can't Say	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

A computer based Leave Management System will bring transparency in leave related tasks.

Strongly Agree	18	69.2%
Agree	8	30.8%
Can't Say	0	0%
Disagree	0	0%
Strongly Disagree	0	0%

Web based notification for leave approval/rejection will be better than the existing system.
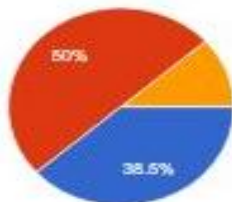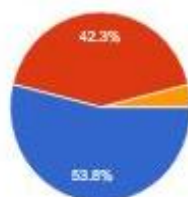
Strongly Agree	10	38.5%
Agree	13	50%
Can't Say	3	11.5%
Disagree	0	0%
Strongly Disagree	0	0%

Computer based system can reduce the time involved in processing of leave application.
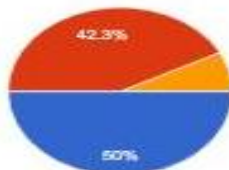
Strongly Agree	13	50%
Agree	11	42.3%
Can't Say	2	7.7%
Disagree	0	0%
Strongly Disagree	0	0%

Computer based system would make easier for senior leaders to monitor leaves in the department/section/institute

Strongly Agree	14	53.8%
Agree	11	42.3%
Can't Say	1	3.8%
Disagree	0	0%
Strongly Disagree	0	0%

Fig 1 Survey to capture the need of automation

Survey results show that mostly staff has agreed and strongly agreed to the idea for automation of Leave Management System. Following figure shows the implementation results.These are the different modules of our proposed system, namely Leave manager, Payroll manager, Profile manager and History.
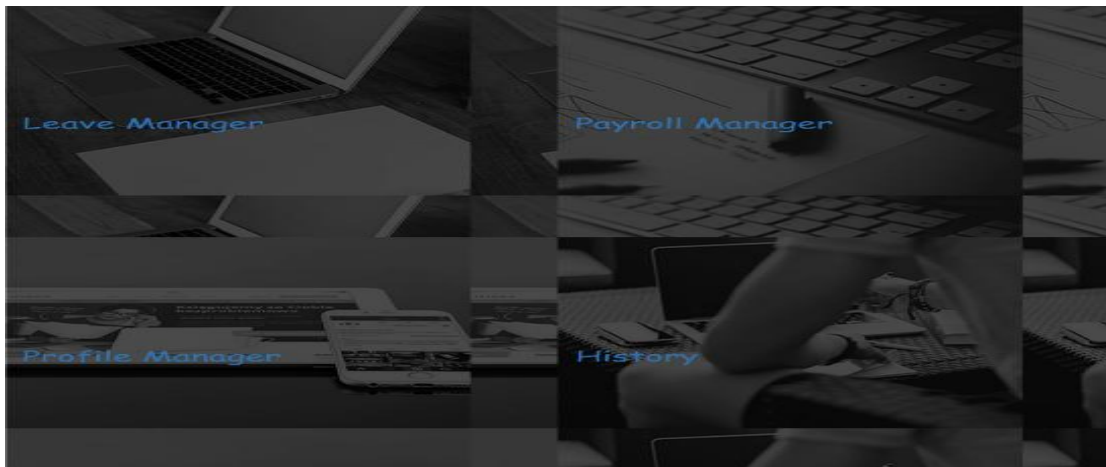

Fig: 2 Different modules and features.

This is leave form. Here staff of the organization can apply for their leave.

Fig:3 Leave form and side menu

After deployment, the system was tested by few staff members and again a survey was conducted and it can be seen that results were positive.

Employees can easily view their leave related info using this portal.
(10 responses)

This portal can bring transparency in leave management process. (10 responses)

This portal can reduce the time involved in leave applying and management process
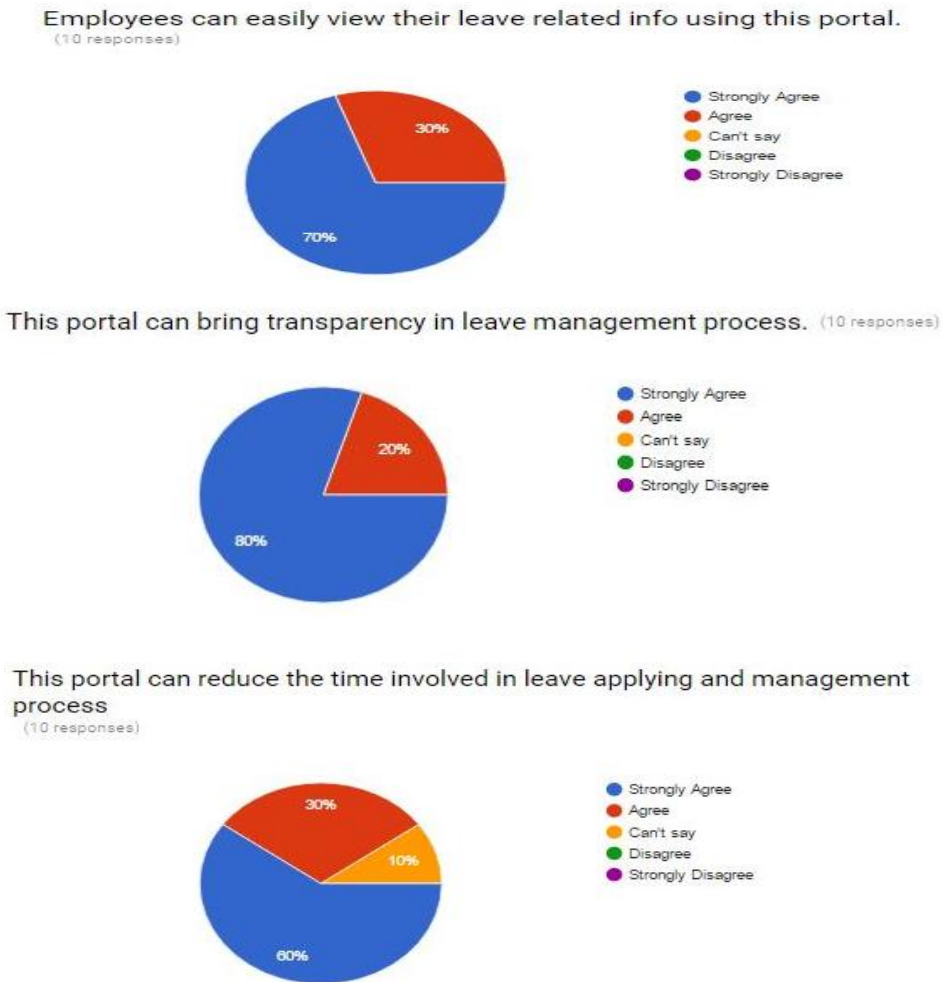(10 responses)
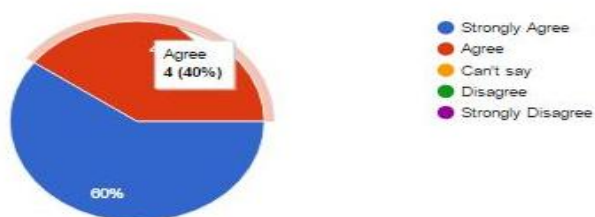
Fig: 4 Survey to show acceptance of the system.

V. Conclusion

Here we have created a web-portal for an organization by using web-technologies. This web portal can be used by employees of any organization for easily managing all their leave related work like requesting for leave application and getting notification on whether their leave request is granted or not. It also has a subsystem for managing all the tasks related to payroll and income tax deductions. This subsystem brings the much-required transparency that the employees of the organization required. This portal is mainly targeted for betterment of the employee's. Furthermore, it will provide both flexibility and convenience for the employees of an organization. We also conducted a survey on current system and according to the feedback we will try to make changes in the proposed system. Moreover, we hope that this venture of ours will be continued to even other organizations.

References

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