



Attendance and Salary Management System for Construction Industry

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Abstract— India's construction sector is a key indication of the country's progress. Managing employees is challenging, and keeping track of attendance is crucial for most contractors, especially when it comes to the payroll process. The industrial sector will profit from the usage of current technologies such as fingerprint biometric scanners and mobile devices as a supplement to software development in order to improve their services. From attendance to salary calculation, the management of workers on the job site is done manually, which makes it impossible for the construction business to keep track of each and every worker manually. It also makes it difficult for workers to directly express their grievances.

Keywords— Mobile application, Web Application, cloud server, database.

I. INTRODUCTION

An accurate worker attendance record system is critical on the construction site. For instance, managing real time-attendance for multiple workers, helpers, contractor, etc. is a paramount yet critical challenge. Managing people is a difficult task for most of the construction sites, especially the management of attendance records. Meanwhile, maintaining the attendance record is an important factor, especially for the overtime claims, payroll and leave. Currently, most of the construction firms uses a punch-card system to record attendance of the staff(workers/helpers/contractors). The punch-card system will only be able to record the attendance of the staff on the card and need to record them manually as the system is unable to record the attendance automatically. Thus, it is difficult for the human resource (HR) practitioner who is responsible of managing the attendance records to have an organized as they have to manually record the attendance. On top of that, supervisors who were responsible in supervising their staff are also not constantly notified and reported with the current updates on their staff attendance record. Therefore, the process of attendance record required an improvement and good monitoring system.

II. LITERATURE SURVEY

Management is not only about managing resources and controlling expenses. Although these are basics functions of management, there's more to management than just

managing resources and controlling expenses. Another extremely important function of management is the ability to manage employees – especially since they are the lifeline of any business. Managing people is a tedious task for the construction firms, especially the management of attendance records which is manually recorded using punch card system, record book system, diary, etc. To make this process hassle free, various methods have been adopted since beginning of the time. Face recognition, biometrics, and radio frequency identification (RFID) are just a few of the highlighted technologies. By using the above systems, overall accuracy of the attendance records gets drastically improved due to the fact that it removes all the hassles of manually recording attendance which will in terms save valuable time for the staff as well as the construction firms. Use of biometric system is a fracas free way for managing the attendance of the staff. There are many ways in which we can achieve our goals by using biometric scanners like fingerprint recognition, face recognition, voice recognition, iris recognition, palm recognition, etc. Image segmentation, normalisation, and orientation estimation are used to speed up the procedure. With addition, the Gabor filter and ridge frequency estimates aid in picture orientation.

In [1] the industrial sector will profit from the usage of contemporary technologies like as fingerprint biometric scanners and mobile devices as a supplement to software development in order to improve their services. This article described ANotify, a fingerprint biometric-based and web-based management system that integrates short messaging service (SMS) notification for employee attendance records. Paper successfully presents a solution of taking employee attendance for industrial sector using fingerprint biometric-based and web-based attendance management system with SMS notification.

In [2] Automated systems involving use of biometrics like fingerprint and iris recognition are well developed in the recent years however, it is intrusive and cost required for deployment on large scale gets increased substantially. To address these concerns, biometric features such as facial recognition can be employed, which entails phases such as picture capture, face detection, feature extraction, face categorization, face identification, and, finally, attendance marking. The attendance management system estimates the

attendance of each student by continuous clicking of images for some time period and finds the best localized image for processing.

In [3] For the industrial sector, an attendance management system may foster a sense of urgency among workers to come to work on a regular basis, as well as assist those who want to inspire their coworkers to come to work on a regular basis. Fingerprints are said to be the best and fastest biometric identification method. A user-friendly, easy-to-use automated attendance management system is more secure and private than a manual attendance system.

In [4] in an academic institute, they build a system that takes student attendance and keeps track of attendance records automatically. The attendance record in the database will be updated by the finger-print sensor module. Because the wireless channel was only good for a short distance, the system could only be tested in the lab. In terms of speed and memory, it has room for improvement.

In [5] the design technique for a wireless fingerprint attendance system based on ZigBee technology is presented in this article. The system incorporates a terminal fingerprint acquisition module and a computer-based attendance management module. It can perform operations such as fingerprint information collecting, processing, wireless transmission, fingerprint matching, and attendance monitoring automatically. It accomplished a low-cost and high-performance wireless fingerprint attendance function, which supplied a novel wireless fingerprint attendance system for companies and institutions, in order to achieve the simple and high real-time system.

In [6] Time clocks (CL1) are provided in a number of work places to record the worker's entrance and exit times, and managing means (CL2) are provided for inputting time recording information from the respective time clocks and managing the work place where the worker entered and exited, as well as how long he or she has been engaged therein.

In [7] the software can calculate the monthly wages, taxes, and social security benefits of the company's employees. It will produce files as an output based on particular formulas, such as bank files and salary slips. In a

future edition of the pay management application, graphs and charts might be incorporated. Management can see the change in an employee's wage or the overall increase in employee compensation by looking at these charts or graphs.

In [8] in order to discover the particular biometric identification that may be utilized to better their conventional employee attendance system, which currently impacts the organization's efficiency, a research was performed utilizing a telecommunication business in Nigeria's South West area. The study took a quantitative approach, with a questionnaire serving as the data collecting tool, which was based on several biometric technologies. The study concluded that the optimum biometric technology method for resolving the remaining problem of employee attendance in the proposed company is the fingerprint. This will reduce buddy punching and boost employee productivity.

In [9] the goal of this article is to provide a safe and secure web-based attendance tracking system based on multi-tier architecture for both desktops and cellphones, combining biometrics and radio frequency identification (RFID) technology. The system can keep track of both kids' and teachers'/staff members' attendance at a school. The technology can also identify the present position of students, faculty, and other members of staff anywhere on the institution's campus.

In [10] study came up that the company is a better example for those companies who do not have a systematic procedure for dealing with grievances but effectively handle them for the prosperity of the organization. Also the employees find it as a better way to communicate their problems and getting the problems solved in a faster way rather than a set of procedures and stages to solve the issues.

III. DESIGN/ALGORITHM/FLOWCHART

According to the problem discuss above that we have proposed, we have come to a solution for the aforementioned. In the solution, we have decided to use biometric scanner to collect the attendance of the workers and this attendance will be simultaneously uploaded on the cloud which will be accessible by both the firm employee and the worker through their respective software/application.

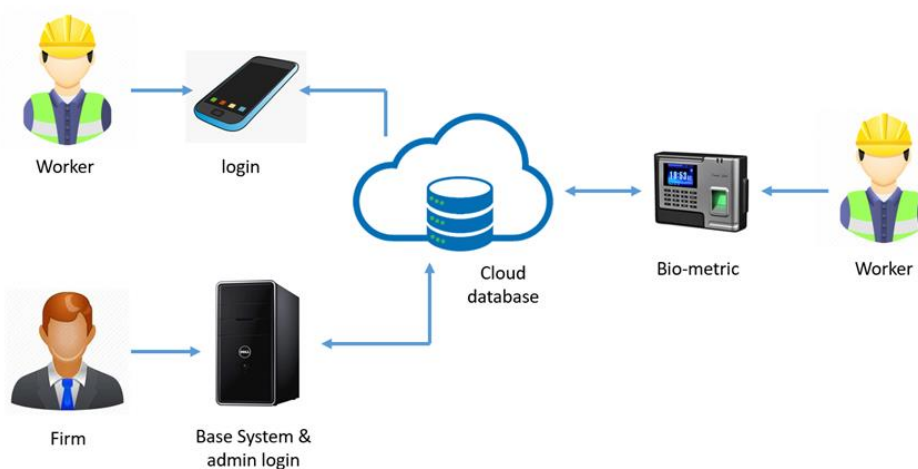


Fig 1.1

In the above figure (Fig 1.1), the firm will be able to manipulate the worker's data based on the attendance collected and other operations performed in the software/application. In their apps, construction employees will be able to see their current status, including attendance,

income, and the progress of any grievances they may have. All the data will be collected in the cloud database which will be helpful for the effectiveness of the biometric scanner placed at respective construction sites where workers will be able to scan their attendance.

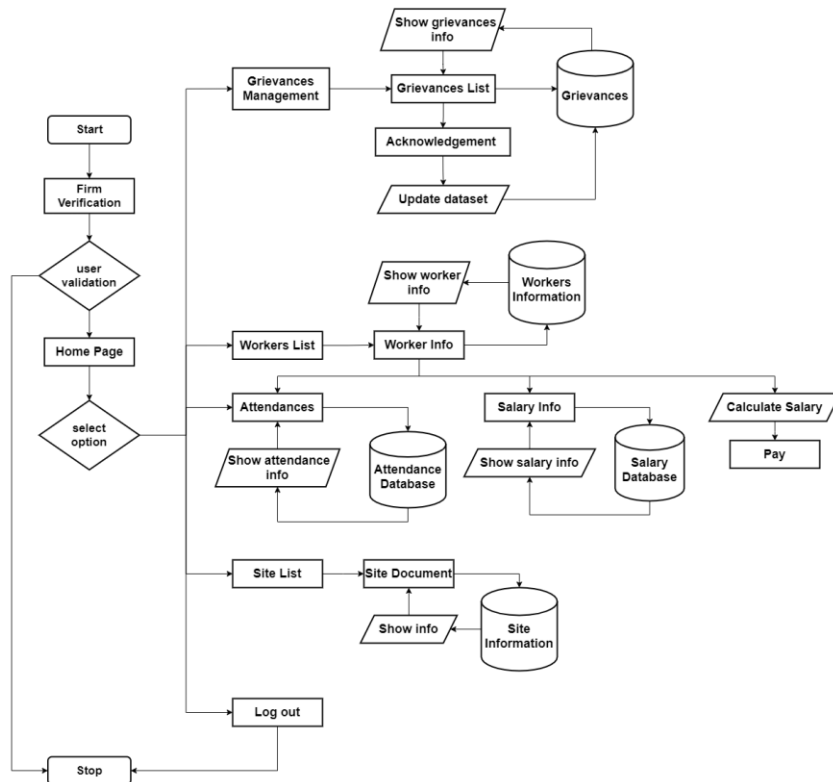


Fig 1.2

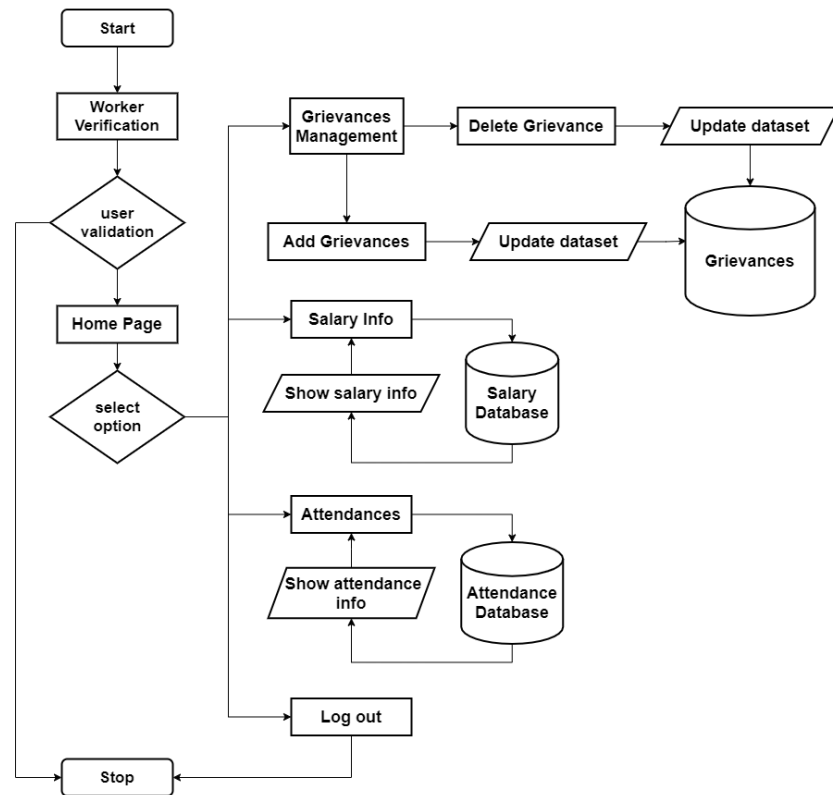


Fig 1.3

In figure (Fig 1.2 and Fig 1.3), it can be understandable the functional approach of our solution.

The system is divided into two sections:

- Workers (Mobile application)
- Firm (System application)

IV. RESULT OF SURVEY CONDUCTE

A Survey was conducted with some of the constructors/ workers/ helpers about their views on our project.

The following questions were taken for the betterment of the management system for workers/ helpers/ firm:

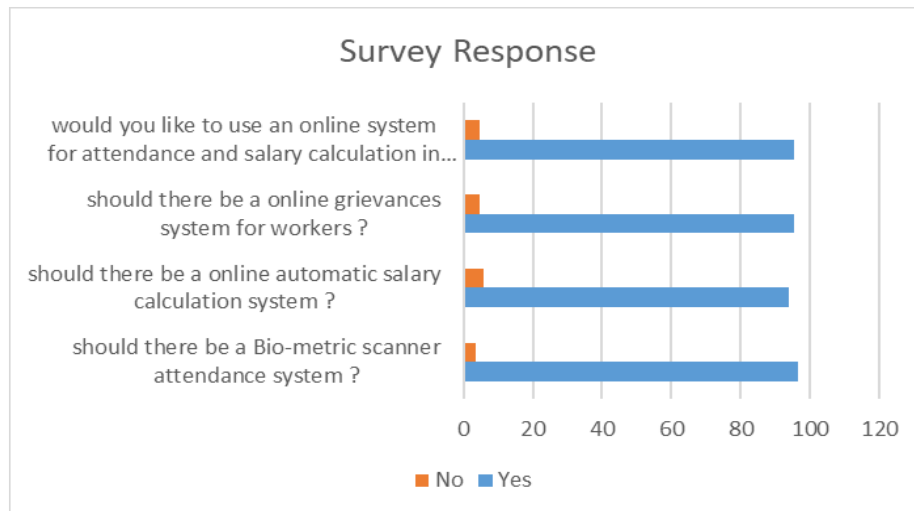


Fig 1.4

V. CONCLUSION

In conclusion, our solution that was proposed for the problem statement a descriptive survey was conducted and the participants were closely tied with the subject in our problem statement and through this we can estimate that this solution can provide optimal results for both the firm as well as the workers on the construction site, as this solution was proposed to produce an amicable environment between both sides involved and to help in removing the discrepancies in the system.

VI. REFERENCES

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