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6381 907 438



6381 907 438



ijmrset@gmail.com



www.ijmrset.com



Employee Management System

Dr. T.GEETHA, HARISH.M

Head, Department of MCA, Gnanamami College of Technology, Namakkal, India

Student, Department of MCA, Gnanamami College of Technology, Namakkal, India

ABSTRACT -An employee management system is an application-based system that has two developed applications, one for employers to manage employee details and one for employees to record their attendance. Every organization, whether public or private, makes use of an information system. Each employee's attendance will be tracked by this system, and at the end of the month, it will determine their pay. Additionally, it determines each employee's total working hours and overtime. Conflicts between the HR Team and the employees are avoided because it saves a lot of time and calculates pay accurately. So that both the employer and the employee can concentrate on their work and grow their business.

KEYWORDS-Attendance, Employee Management, Payroll, Salary Calculation.

I. INTRODUCTION

Every organization maintains a record of its employees. Staff management relies heavily on personnel records. These records are necessary for every organization in order to manage the workforce, calculate pay, and assess employee performance. The HR team's time-consuming and difficult task of managing all these records can be made easier by using the Employee Management System (EMS). Any organization's success depends on its human resources, which are a crucial component. Employer management is a major area in which businesses invest. EMS is an informatics tool that helps owners, HRs, and managers save time, energy, and money. All businesses, both public and private, need to manage their employees. Systems. However, in recent years, there has been a significant increase in the use of automatic systems that can handle salary calculation on their own. Because these systems are expensive and need ongoing maintenance, they are challenging to implement in many places. I therefore have this EMS, which is based on a mobile application, to address this issue. Every employee's pay and daily attendance will be calculated. This system was created so that it can be used by smaller organizations as well. It assists small-scale industries in managing their workforce and is less expensive than alternative systems. This system aims to address this problem so that the HR team can concentrate on other processes rather than resolving disputes because there are many disputes in small sectors due to improper calculations of pay and overtime. In this essay, we'll talk about the system's development process, issues we ran into, and advantages. Two mobile applications make up this system.

II. LITERATURE REVIEW

Various sections of the literature review explain the uses and advantages of this system. The goal of the employee management system is to create a straightforward, affordable, and trustworthy system to achieve the objective of making employees' attendance and salary calculations simple and accurate. Our goal is to create a system that stops employees from lying about their work and ensures they are paid fairly for it. This system was created primarily to address the issue of small-scale businesses and factories still keeping employee records on paper and pen. Even conflicts with employees are common in these industries. Since the majority of the staff here is from the labor class and works extremely hard to support themselves, our system will make an effort to lessen these conflicts and will ensure that these workers receive every cent of their wages.

III. EXISTING SYSTEM

To record the information about their employees, the organization's current employee management system still relies on the standard, antiquated techniques that are only based on pen and paper. For this purpose, a large number of registers must be kept, which causes a serious waste of time when creating reports or looking for employee records, as well as the potential loss of data if a file is lost. The fact that it is an expensive process makes it a difficult task for



organizations. Though new technologies like IoT and web-based systems are sometimes used, they can be expensive and challenging to implement. The other techniques on the market rely on card punching, biometric scanning, or facial recognition. However, each of these calls for the installation of an external device in the workspace, which is once more an expensive process that needs ongoing upkeep. With this project, data entry errors are avoided and systemic difficulties are reduced or completely eliminated. In comparison to the current system, it is less expensive, simpler to set up and use, requires no maintenance, produces accurate data, and saves a significant amount of time.

Disadvantages:

- Require an expensive, high-maintenance external device.
- Requires more manual labour.
- A lengthy process.
- High potential for data loss.
- The potential for calculation and data entry errors.

IV. PROPOSED SYSTEM

Employee management system can be designed and implemented to streamline various aspects of employee administration and HR processes. Here's an outline of a proposed system.

Employee Database:

Maintain a centralized database to store employee information such as personal details, contact information, employment history, and job-related data. Implement proper security measures to protect sensitive employee data.

Employee Onboarding:

Develop a module to facilitate the onboarding process for new employees.

Provide a platform to collect necessary documents, complete paperwork, and share important company policies and resources.

Automate the process of assigning tasks, setting up equipment, and notifying relevant departments.

Attendance and Leave Management:

Create a system to track and manage employee attendance, including clock-in/out, breaks, and overtime. Enable employees to request and manage different types of leaves (e.g., vacation, sick leave) through a self-service portal.

Implement an approval workflow for managers to review and respond to leave requests.

Performance Management:

Design a module to set goals and track employee performance.

Enable managers and employees to conduct regular performance reviews and provide feedback.

Implement mechanisms to recognize and reward exceptional employee performance.

Training and Development:

Provide a platform to manage employee training programs and track their progress.

Allow employees to access training materials, participate in online courses, and attend workshops.

Generate reports to evaluate the effectiveness of training initiatives.

Payroll and Benefits Administration:

Develop a system to calculate employee salaries, taxes, and deductions based on predefined rules and regulations.

Integrate with payroll systems to facilitate accurate and timely salary disbursements.

Provide employees with a platform to view their pay slips, tax information, and benefits status.

Communication and Collaboration:

Implement tools for internal communication, such as company-wide announcements, team messaging, and document sharing.

Foster collaboration by creating shared spaces for teams to work on projects and share information.

Integrate with existing email systems and calendars to ensure seamless communication.



Reporting and Analytics:

Generate comprehensive reports and analytics on various HR metrics, such as employee turnover, performance trends, and workforce demographics.

Provide decision-makers with valuable insights to support strategic planning and resource allocation.

Mobile Access:

Develop mobile applications or responsive web interfaces to enable employees and managers to access the system from anywhere, at any time.

Ensure the system is optimized for mobile devices and provides a seamless user experience.

Security and Privacy:

Implement robust security measures, including user authentication, data encryption, and access controls.

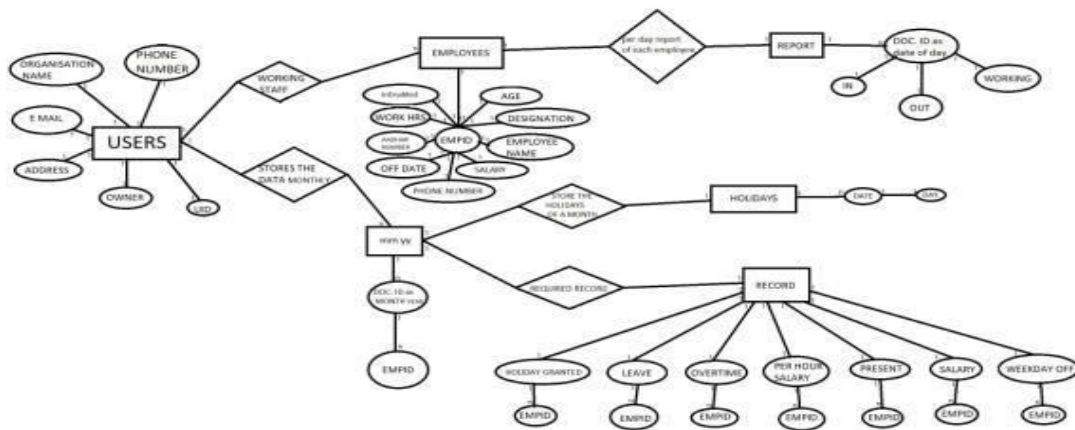
Comply with relevant data protection regulations and ensure the privacy of employee information.

It's important to note that the actual implementation and features of an employee management system can vary based on the specific requirements of an organization. The proposed system serves as a general framework that can be customized and expanded upon to meet the needs of a particular business.

V. A SYSTEM'S ARCHITECTURE

A mobile-based application with two apps for different user types makes up the proposed system.

A) Employer; Employee. On Firebase's cloud storage, a system's data is kept. Security is handled by Firebase, which also offers free assistance with email authentication [2]. Each user receives an automatic unique id as well. Other services offered by it include email verification and password recovery. On the cloud, this firebase stores data [12.] fire store that keeps data organized into collections made up of documents and fields. Using the ER diagram in figure 7.1, the database structure is displayed below



B. Features

The following are EMS features:

1. Compatible with both IOS and Android.
2. Simple to use.
3. Daily in-and-out marking, updating the number of hours worked today.
4. Payroll, overtime, and leave calculations can all be done with a single click.
5. Easy to use and trustworthy.



6. Guarantees a single day of attendance that is marked.

C. Advantages:

In addition to the many benefits of EMS, this proposed method of EMS that is based on mobile applications has a few extra benefits over other systems like automatic sensor.

Using a computer or the traditional pen and paper method.

1. It is more affordable and simple to use.
2. It provides calculations that are error-free.
3. Avoid any employee misconduct of any kind.
4. There is a system available in the employer app from which any authorized person can mark attendance of all such employees for those employees who don't have smartphones or don't know how to use them.
5. Quick and accurate salary calculations aid in improving employer-employee relations.
6. Flexibility, allowing each employee to take a different day off.
7. A day before a holiday, the employer can mark it as such.
8. Employees who are present and those who are not.
9. Give employees daily working hours.
10. Make sure that employees can enter and exit only once per day; this feature stops cheating by any employee.

VI. DEVELOPMENT METHODS

The same web-based application development process was used to create this system. Because it is impractical to develop the entire system at once, software is created so that it can be reused. Instead, software is created in small, manageable pieces. A method known as incremental development involves creating a system in a series of iterations (increments), each of which adds functionality to the one before it.

A. System Analysis.

It is necessary to develop an employee management system that can track each employee's attendance. Users' data must be protected and readily accessible whenever needed. Data must be organized to allow for reuse. An important consideration in determining an employee's salary is how well holidays will be managed. Applications should be able to instantly display salary, total working hours, overtime, and present days at the end of the month.

B. Planning:

This phase of development entails careful planning of the steps to be taken and an associated timeline. It's essential for a successful development process that is finished on schedule. It entails planning the steps necessary to carry out the project, enable it to achieve its goals, and use them in a way that avoids future issues.

C. A design analysis.

The design analysis step involves planning each screen design and determining whether it will be able to produce the desired results. Whenever necessary, this step is repeated. If an update or new development is needed, it starts here. Making the design in that way was the most difficult part of this. The user interface is straightforward. It is a progressive process in which the design is first created in a way that can implement all necessary functionalities and then the design can be made appealing.

D. GUI design:

The UI of the app is developed using code once a clear picture of the screens and their design has been obtained. Since this development replaced flutter, only one language is now used to design and implement backend processes, making this technology much more straightforward and effective. Implementing it and handling any errors that arise require internet



research, which is what we must do. Reading government documents and other online sources is a requirement for this task.

E. Database Design and its Implementation:

Designing a backend involves creating databases and classes that correspond to the functionality we want to offer. I have used Cloud Fire store for database storage. This was the part that I found to be the most difficult because I had to keep reminding myself that data should be stored so that it can be accessed easily and should not be mixed; otherwise, there was a high risk of that data being stored more than once because it would be used in several locations; another task was to store the data so that it would remain separated; another was to determine what and where the fields were needed.

F. Combining a GUI and a database.

The most crucial part has now arrived in image, where we need our functions to store and retrieve data. Since updating data is necessary, we must be aware of how each piece of data is being used to prevent loss. Your data may disappear due to a single error, but that occasionally occurs during development.

G. Implementation:

Our application would be developed and put into use during the implementation phase. Wherever it is necessary, the functionalities and data are implemented and used here. Here, the entire program is implemented, and errors are checked. We get our finished product after this stage, which is where the majority of the development happens.

H. Testing:

The most frequent step is testing, which is required after finishing each task. We also need to. Recheck old functionalities once new ones are developed. We have to make sure the new thing doesn't affect the older one. For testing my application I have run emulator provided by android studio.

VII. FUTURE IN HANDS

In the future, advancements in technology will likely continue to shape and improve employee management systems. Here are some potential enhancements and features that could be seen in future employee management systems:

1. **Artificial Intelligence (AI) Integration:** AI can be integrated into employee management systems to automate repetitive tasks, provide personalized recommendations, and generate insights from large sets of employee data. AI algorithms can analyze employee performance, identify skill gaps, and offer training suggestions.
2. **Enhanced Employee Self-Service:** Future systems may offer improved employee self-service capabilities, allowing employees to easily access and update their personal information, request time off, view their schedules, and access company resources through user-friendly interfaces and mobile applications.
3. **Real-Time Performance Feedback:** Employee management systems could facilitate continuous performance feedback, enabling managers and peers to provide feedback in real-time. This can be done through mobile apps, chat bots, or other digital tools, fostering a culture of continuous improvement and regular communication.

VIII. CONCLUSION

This system will aid organizations in system development and employee management. The employee management system is created to conserve resources like time, money, and energy. It is incredibly helpful in an organization to streamline the record-keeping process. Maintaining employee satisfaction is important because they are the foundation of any business. Transparency in their salary calculation will result from this idea. Additionally, it will make HR's job simple, allowing them to concentrate on other tasks. This employee management system oversees an employee's overall performance as well as their various roles within an organization.



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