

A
Mini-Project Report on

**CORPORATE TRADING PORTFOLIO
MANAGEMENT SYSTEM**

Submitted in partial fulfilment of the requirements for the
degree of

BACHELOR OF ENGINEERING

IN

**Computer Science & Engineering
Artificial Intelligence & Machine Learning**

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A. P. SHAH INSTITUTE OF TECHNOLOGY

CERTIFICATE

This is to certify that the project entitled “**CORPORATE TRADING PORTFOLIO MANAGEMENT SYSTEM**” is a bonafide work of Aafreen Khan(22106048), Prachiti Parab(22106030), Sneha Gupta(22106046) (submitted to the University of Mumbai in partial fulfilment of the requirement for the award of **Bachelor of Engineering in Computer Science & Engineering (Artificial Intelligence & Machine Learning)**).

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A. P. SHAH INSTITUTE OF TECHNOLOGY



Project Report Approval

This Mini project report entitled “**CORPORATE TRADING PORTFOLIO MANAGEMENT SYSTEM**” by Aafreen khan, Prachiti Parab, Sneha Gupta is approved for the degree of *Bachelor of Engineering* in *Computer Science & Engineering*, (AIML) 2023-24.

External Examiner: _____

Internal Examiner: _____

Place: APSIT, Thane

Date:

Declaration

We declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

Employees are the backbone of any company. Often employee data such as personal details of employees, salary, leaves, order details of company are managed using manual methods. These manual methods generate a lot of paperwork and make it complex to effectively manage the tasks. Most of the computerized systems proposed for employee management mainly focuses only on attendance management, leave management and salary management. This system proposes a web-based Employee Management System solution to address the difficulties faced. The system will address the shortcomings of the existing systems and provide functions to manage employee data effectively. It will use trending technologies such as React JS, Node JS, Express JS, and Firebase as the database which are faster and more user friendly compared to the technologies proposed in the literature. The system will use the concepts of distributed systems, client server architecture and show features of 3-tier architecture. This concludes that the proposed system addresses the shortcomings of the similar systems proposed in the literature but should be further improved by studying the subject area. Further research should be done to provide more features related to managing employee data and to provide a responsive design.

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CHAPTER 1

INTRODUCTION

1.INTRODUCTION

Every organisation keeps a record of their employee. Employee records play a crucial role in staff management. Every organisation requires these records to calculate pay, manage workforce and see performance of employees. Management of all these records is a challenging task and time consuming process for the HR team, which can be reduced by using Employee Management System. Human resources are an important part of any organisation and responsible for the success of an organisation. Organisations invest highly on the management of employees.

Human resource information system that manages inventory control and accounting. Employee management system is also an informatics system that is useful in saving time, power and money of owner, HR's and manager. All organisations both private and public, have necessities of employee management systems. But from years they have been using an old classical method that is pen and paper to maintain record, however in the past few years there has been a large increase toward using automatic systems that can manage salary calculation by their own. In many areas it's a difficult task to implement these systems as they are costly and require proper maintenance. So, to solve this problem I have this EMS. It will calculate the salary of each employee and daily attendance.

Project portfolio management enables companies to optimize their R&D investments in order to create value for customers. Cooper et al., (1997, 2001, 2006) states that portfolio management treats the financial resources of the company with a focus on return on investment, appropriate balance of the portfolio and strategic alignment of the portfolio with the business objectives. This allows for a better mix of projects and more efficiency in the creation of new products. It is crucial that companies adopt project portfolio management when dealing with new product initiatives.

Since employees are thought of as the foundation of a company, managing them effectively is essential to the success of the enterprise. It is often necessary to deploy technology that efficiently addresses time constraints and management challenges to fully utilize a company's most important asset, its people resources. The employer may easily and effectively keep track of all the records thanks to an employee management system. This employee management system is anticipated to be user-friendly.

An employee leave management system is a platform that enables staff and admin of an organization or institution to easily apply, correctly allocate, track and grant leave. In many institutions, staff are entitle to different kind of leave; study leave, sick leave, annual leave, leave without pay, research leave and maternity

leave. These leave are been taken and recorded according to institution policy. The administrative department is mostly considered as one of the most important assets in every institution. It is a part of administrative department function to keep all the records of employee. Every institution administrative department is information driven, and the admin staff drives and carry out day to day activities. In most institutions, conventional method of requesting and managing leave is been used. In conventional method, academic staff is required to manually write and submit leave application to administrative department through the Head of Department (HOD). The head of department minutes and forward the request to higher staff in charge, who approve or reject the request.

This method is time consuming, prone to error, required more paper work and tedious to maintain. Hence the need for an automated method that is faster, error free, with no paper work and easy to manage. Employee leave management is a web-based application that can be easily accessible by staff and management of an institution. It makes it easy for an employee to request and track their own leave. Administrative department of an institution on the other hand can easily allocate, grant and manage all leave requests. Employee leave management system automatically reflect the request to the relevant superior officer for approval. If the superior officers reject the leave, a reason for rejecting the leave must be entered into the system.

The objective of a corporate management system is multifaceted, aiming to streamline the governance and operations of a company efficiently. At its core, such a system serves to align corporate activities with strategic goals, ensuring that every action contributes to the overarching mission and vision of the organization. Operational efficiency is a key focus, with the system facilitating the automation of routine tasks, optimization of resource allocation, and reduction of redundancy. Effective resource management is another pivotal objective, enabling the judicious allocation of human, financial, and physical resources to support business activities. Compliance with regulatory requirements and corporate governance principles is another key goal, safeguarding the organization's reputation and ensuring ethical conduct. Additionally, the system fosters stakeholder engagement by facilitating communication and collaboration with employees, customers. Moreover, it nurtures a culture of innovation and continuous improvement, driving the organization's growth and competitiveness. Ultimately, the adaptability and scalability of the system enable it to evolve alongside the business, meeting changing needs and challenges effectively.

CHAPTER 2

LITERATURE SURVEY

2.LITERATURE SURVEY

2.1-HISTORY

Human Relations Movement:

The Hawthorne studies conducted by Elton Mayo and his colleagues at the Western Electric Company highlighted the significance of social and psychological factors in workplace productivity.

This movement emphasized the importance of employee satisfaction, motivation, and group dynamics in organizational performance.

Management Information Systems:

With the advent of computers and information technology, organizations began to develop management information systems (MIS) to collect, process, and report data for managerial decision-making.

Early MIS focused on automating routine tasks such as payroll, inventory management, and financial reporting.

Enterprise Resource Planning (ERP) Systems:

ERP systems integrated various business functions such as finance, human resources and customer relationship management into a single, unified platform.

SAP, Oracle, and other software vendors pioneered ERP systems, enabling organizations to streamline their operations and improve efficiency.

Customer Relationship Management (CRM) Systems:

CRM systems emerged as organizations recognized the importance of managing customer relationships and interactions

CRM software enabled companies to track customer interactions, manage sales pipelines, and deliver personalized marketing campaigns.

Knowledge Management Systems:

Knowledge management systems (KMS) facilitate the creation, storage, sharing, and utilization of knowledge and expertise within organizations.

These systems include document management platforms, collaboration tools, and expertise locators to support decision-making and innovation.

Digital Transformation and Cloud-Based Solutions:

The proliferation of cloud computing and digital technologies has revolutionized corporate management systems.

Organizations increasingly adopt cloud-based solutions for ERP, CRM, HR management, and other functions to achieve greater flexibility, scalability, and cost-effectiveness

2.2-LITERATURE REVIEW

Corporate trading portfolio management systems play a pivotal role in enabling corporations to effectively manage their work. This literature review provides a comprehensive analysis of existing research and insights into the theoretical foundations, empirical evidence, technological innovations, and regulatory considerations relevant to corporate trading portfolio management systems.

[1] P. U. Singh, H. Singh Fartyal, K. Abdul Ahad Zubair & A. Laddha. (2019). **Employee management system**. International Research Journal of Engineering And Technology (IRJET), 06(05).

- Uses HTML, CSS and PHP as technologies. system proposed to develop features such as employee profiles and, leave and task management. It focuses on attendance and leave management and focuses little on the other aspects of employee management.

[2] Sayali Pramod Dalke, Shruti Anil Deshmukh, Janabai Govind Dalave, Vaishnavi Nitin Sasane, Pooja K Dhule, “**Web Based Staff Management System**”, IJSTE Vol-3, March-2017

- The existing employee management system in the organization still uses the ordinary classical methods which are merely based on pen-paper to record the data of their employees. Firebase handles security and provides free support for email authentication.

[3] Preti Diawati, Vip Paramarta , Djoko Pitoyo , Tomy Fitrio, Sri Wiyati Mahrani, “**Challenges of Implementing an Employee Management System for Improving Workplace Management Effectiveness**”, Journal of Environmental Treatment Techniques , Special Issue on Environment, Management and Economy, Pages: 1200-1203,2019.

- Management of all these records is a challenging task and time consuming process for the HR team. Employees are the backbone of any organisation. The management of employees is very important for a business to develop.

[4] E. Ansari. (2019). **Web based employee management system**. Institute of Information and Communication Technology (IICT), Bangladesh University Of Engineering And Technology (BUET).

-It proposes features such as leave management and task notification. PHP, MySQL and HTML has been proposed as the tools for development. It focuses on attendance and leave management and focuses little on the other aspects of employee management.

Limitation:

The identified limitations of the existing system highlight key areas where improvement is needed to enhance efficiency, security, and overall usability in managing employee data. Let's delve deeper into each limitation and how it impacts the system:

1. Manual Effort Required:

- Relying on manual processes introduces inefficiencies and increases the likelihood of errors. Tasks such as data entry and record keeping consume valuable time and resources.

2. Limited Employee Visibility:

- Without the ability for employees to easily track their status within the system, communication and transparency suffer. This lack of visibility can lead to confusion and frustration among employees.

3. Data Security Concerns:

- The manual system's inadequate security measures pose a significant risk to data integrity. Without proper safeguards in place, sensitive employee information is vulnerable to breaches or unauthorized access.

4. Accuracy and Data Integrity Issues:

- Manual handling of data introduces the potential for inaccuracies and the loss of important records. This compromises the reliability of the information stored in the system and can result in errors in decision-making processes.

5. Time-Consuming Processes:

- The manual nature of the system contributes to time-consuming processes, such as data entry and retrieval. These inefficiencies can hamper overall productivity and hinder the organization's ability to respond quickly to changing needs.

The survey analysis and observation of technology and methodology highlight opportunities for improvement in addressing these limitations:

1. Survey Analysis:

- User feedback underscores the need for a more efficient and secure system that offers improved accessibility and accuracy. By addressing these concerns, organizations can enhance user satisfaction and productivity.

2. Gap in Problem Resolution:

- Despite the existing system's attempts to manage employee data, it falls short of fully addressing the challenges. The persistence of manual processes and data security concerns indicates a need for a more comprehensive solution.

3. Opportunities for Improvement:

- Transitioning to a digital system can offer automation, enhanced security measures, and improved user interface design. Modern technologies such as web-based applications and agile methodologies provide greater flexibility and scalability in system development and management.

Incorporating features like a system scheduler can further enhance automation and streamline processes, ultimately improving overall project management and efficiency.

By addressing the identified limitations and leveraging modern technologies and methodologies, organizations can develop a more robust and user-friendly solution for employee data management. This approach not only enhances data security and accuracy but also improves communication, transparency, and overall productivity within the organization.

CHAPTER 3

Problem Statement

3.Problem Statement

Designing a software solution to efficiently manage all aspects of employee data along user login, including personal information, order details, customer details, editor for keeping track of personal notes. The system should streamline administrative tasks for HR staff while providing easy access for employees to update their details and view relevant information. Additionally, it should incorporate security measures to safeguard sensitive data and ensure compliance with relevant regulations.

CHAPTER 4

Experimental Setup

4.Experimental Setup

4.1 Hardware Setup

-Processor: A modern multi-core processor (Intel Core i5 or higher, AMD Ryzen 5 or higher) for efficient processing of database queries and concurrent user requests.

- **RAM:** At least 8GB RAM for smooth multitasking. For larger databases and heavy usage, consider 16GB or more.

- **Storage:** SSD (Solid State Drive) for faster data access and application loading times. Minimum 256GB storage for the operating system, software, and data files. Consider additional storage for backups and data archiving.

- **Graphics:** Integrated graphics are sufficient unless your software requires dedicated graphics for specific tasks such as 3D modeling or visualization.

-**Network:** Ethernet port for stable network connectivity. For wireless connections, ensure compatibility with the company's network infrastructure.

4.2 Software Setup

-Operating System: Choose a stable and secure operating system such as Windows 10/11 Professional, macOS, or a Linux distribution (Ubuntu, CentOS) based on software compatibility and user preference.

-React js: In React.js, you can create components to represent employees and tasks. Utilize state management to track employee data and task assignments. Implement features like drag-and-drop task assignment for efficient work management within the company.

- **Firebase:** Firebase is a cloud platform provided by Google, offering services such as authentication and storage for web and mobile applications. In a React application for employee management, Firebase Authentication can handle user sign-up, login, and authorization tasks securely. Firebase Storage can be used to store and manage employee-related documents or media files, providing a scalable and reliable solution for data storage needs within the application.

-Networking and Connectivity: Configure network settings, IP addresses, and DNS properly for internal and external connectivity. And Set up permissions and access controls to restrict unauthorized access to sensitive data and software functionalities.

-Framework: bootstrap provides pre-designed components and utilities to create responsive and modern web interface easily. Material-UI is UI framework based on google's material design principles. React icons library provides a collection of popular icons sets as react components. Css and html gives complete control over styling and layout.

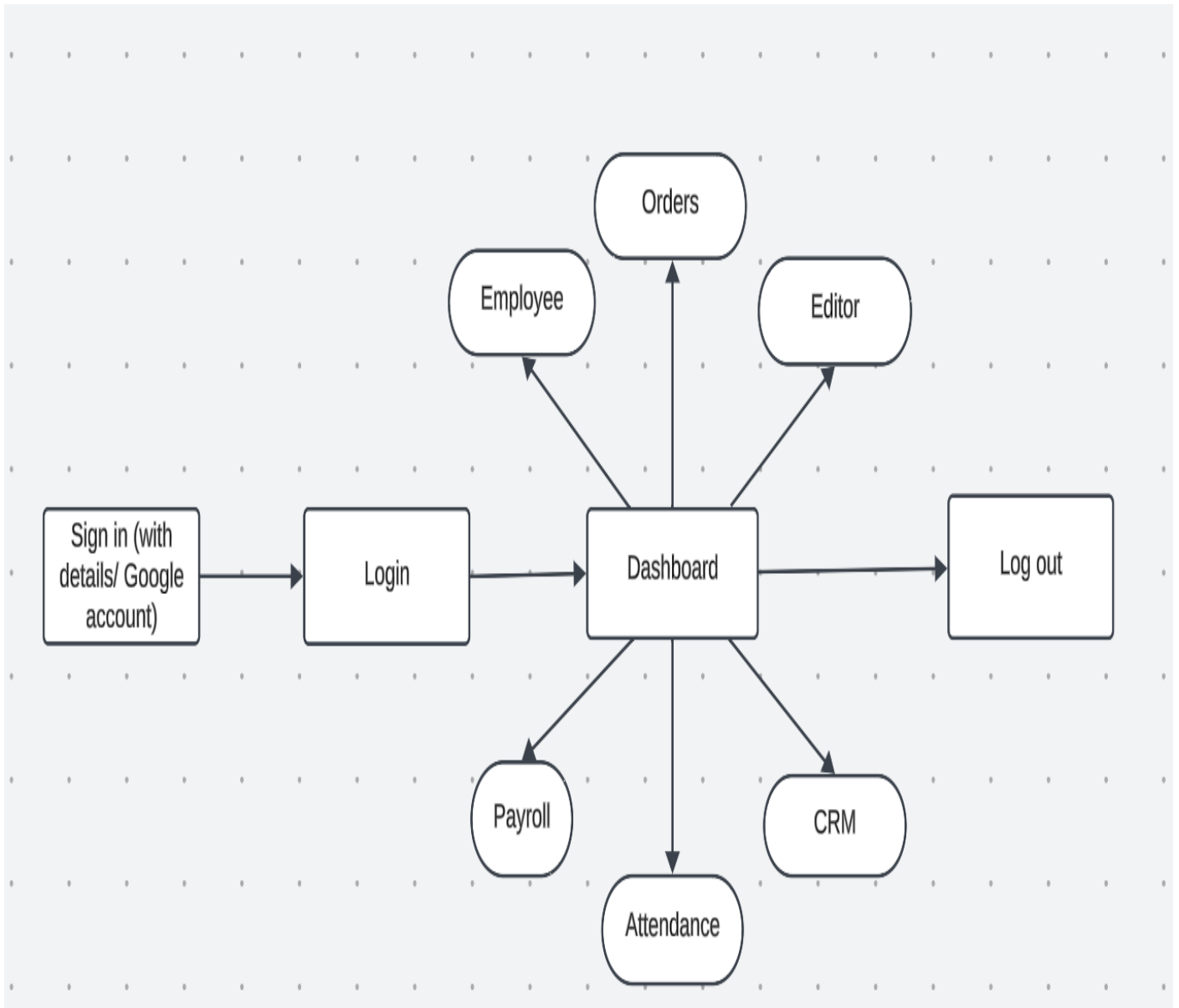
-JavaScript: JavaScript can be used as a backend language for an Employee Management System in React by leveraging frameworks like Node.js. Backend JavaScript handles data storage, retrieval, and logic, communicating with the React frontend.

CHAPTER 5

Proposed System & Implementation

5. Proposed system & Implementation

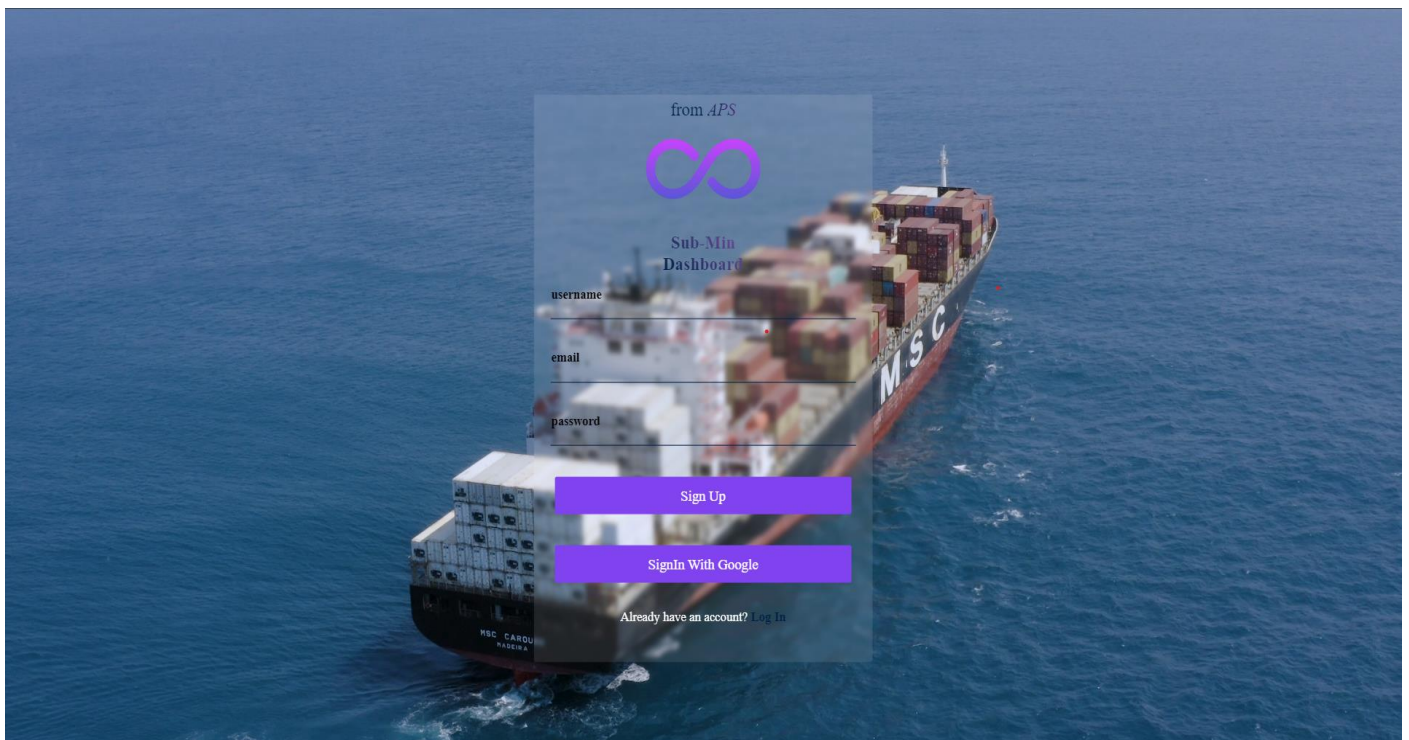
5.1 Block diagram of proposed system



5.2 Description of block diagram

- **User Interface:** Interface for user interaction with the system.
- **Authentication Module:** Handles user authentication and authorization.
- **Employee Database:** Central repository for employee information.
- **Payroll System:** Processes payroll, including salary calculations.
- **Time and Attendance Tracking:** Monitors employee attendance and working hours.
- **Communication Module:** Facilitates communication within the organization.
- **Reporting and Analytics:** Generates reports and analyzes employee data.
- **Integration Interfaces:** Integrates with external systems and services.
- **Security and Compliance:** Ensures system security and compliance.

5.3 Implementation



Order Details



Order ID	Item	Quantity	Price	Description	Current Status	Actions
Home	Sneha	10	500	This is the main page of the website	Live	
About Us	Prachiti	10	500	This page has details about the company	Draft	
Pricing	Aafreen	10	500	Prices for different subscriptions	Error	

prachi

Dashboard

Editor

Employees

Customers

Attendance Leave

Attendance

Orders

CRM

Change Account

Switch to Light Theme

Calendar

April 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
7	8	9	10	11	10aEvent 1	122pEvent 2
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

CHAPTER 6

Conclusion

6. Conclusion

The system will be built as a distributed web-based application. The clients will be able to access the application through a web browser. The web browser with the React JS frontend will forward the requests to the Node JS backend and the backend will communicate with the firebase database to fetch the data.

The system will overcome the shortcomings of the similar systems that have been proposed in the literature. The system is proposed to have functions such as managing company assets assigned to employees, tracking the work progress of employees and broadcasting information to employees as announcements in addition to attendance and leave management whereas existing systems focus mainly on attendance and leave management only. Even though the system is proposed to have a good set of feature the system can be further improved by developing more features to add even more functionalities. Further research could be conducted to improve the system by identifying different kinds of employee data that should be effectively managed in the workplace and developing the system to include functions to manage them. The subject area should be further studied, and system should be further developed to address any shortcomings.

References

- [1] P. U. Singh, H. Singh Fartyal, K. Abdul Ahad Zubair & A. Laddha. (2019). Employee management system. International Research Journal Of Engineering And Technology (IRJET), 06(05).
- [2] Sayali Pramod Dalke, Shruti Anil Deshmukh, Janabai Govind Dalave, Vaishnavi Nitin Sasane, Pooja K Dhule, “Web Based Staff Management System”,IJSTE Vol-3, March-2017
- [3] Prety Diawati, Vip Paramarta , Djoko Pitoyo , Tomy Fitrio, Sri Wiyati Mahrani, “Challenges of Implementing an Employee Management System for Improving Workplace Management Effectiveness ”, Journal of Environmental Treatment Techniques , Special Issue on Environment, Management and Economy, Pages: 1200-1203,2019.
- [4] E. Ansari. (2019). Web based employee management system. Institute of Information and Communication Technology (IICT), Bangladesh University Of Engineering And Technology (BUET).
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