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Employee Management System

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ABSTRACT: The effective management of employee information and activities is essential to the success of any organization. To streamline and automate various HR functions, such as employee onboarding, attendance tracking, and payroll processing, many organizations use an Employee Management System (EMS). The EMS is a software application that enhances productivity, optimizes employee performance, and reduces administrative costs.

Typically, the EMS consists of a centralized database that stores employee information, including personal details, job descriptions, compensation, and benefits. The system enables managers to access this information in real-time and make informed decisions about staffing, performance, and compensation. Additionally, employees have access to self-service portals that allow them to view their personal and work-related information. This feature enhances communication and reduces administrative workload for managers.

The EMS also offers an analytical tool to easily analyse reports and records, which provides insights to make better decisions. In addition to being convenient, the system offers high-level security to prevent anonymous entry and protect sensitive employee data from unauthorized access, both in transit and at rest.

In conclusion, the EMS is a comprehensive tool that offers numerous benefits to organizations. By streamlining and automating HR functions, the system improves productivity, optimizes employee performance, and reduces administrative costs. The system's centralized database, real-time access to information, and self-service portals enable better communication between managers and employees. Moreover, the EMS's security features provide reliable protection for sensitive employee data.

KEYWORDS: Employee Management, Notification, Java, Android Studio, Oracle

I. INTRODUCTION

In the fast-paced world of modern business, effective management of employees is essential. The success of any organization depends on the productivity of its employees, and managing them plays a crucial role in achieving that. Implementing an Employee Management System can offer many significant benefits to an organization, including leave application, salary slip generation, personal information management, and meeting management. Developing an Android application for such a system can be challenging, and the technical team must carefully consider and overcome any obstacles that may arise during the development process.

As the business world becomes increasingly fast-paced, effective employee management is crucial to an organization's success. Given the widespread use of mobile devices, mobile applications have emerged as a popular tool for managing employees. As the most widely-used mobile operating system, Android provides a robust platform for building employee management systems. Such systems can provide organizations with numerous benefits, including streamlined attendance management, salary slip generation, and personal information management. However, developing a system like this requires careful consideration of the technical challenges and unique design considerations associated with mobile applications. This research paper aims to explore these considerations, as well as the potential benefits and challenges of implementing an Employee Management System in Android.

Mobile applications have become a popular tool for employee management due to their convenience and flexibility. With Android being the most popular mobile operating system, it is a natural choice for organizations looking to develop mobile applications for employee management. Android provides developers with a wide range of features and tools for building robust and scalable applications, including support for real-time data synchronization, secure communication, and rich user interfaces. In addition, Android offers seamless integration with various third-party services and systems, making it easier for organizations to incorporate their existing systems into the Employee Management System.

Developing an Employee Management System in Android requires a comprehensive understanding of the Android platform and the unique challenges associated with mobile application development. For example, mobile applications need to be optimized for limited resources and varying network conditions, while still providing a responsive and reliable user experience. Additionally, the application must be designed to support multiple screen sizes and resolutions, given the diverse range of Android devices in use. Designing an effective and efficient user interface for an Employee Management System in Android is also crucial, as it impacts the overall user experience and adoption of the application.

Security is another critical consideration when developing an Employee Management System in Android. The system must be designed to protect sensitive employee data from unauthorized access, both in transit and at rest. This requires implementing secure communication protocols, such as Transport Layer Security (TLS), and encrypting sensitive data. Additionally, the application must enforce strong authentication and authorization mechanisms, ensuring that only authorized users have access to the system.

In conclusion, the development of an Employee Management System in Android requires a comprehensive understanding of the Android platform and the unique design considerations associated with mobile applications. Organizations looking to develop such a system should carefully consider the technical challenges, security requirements, and design principles to build a robust and scalable application. This research paper aims to provide a detailed analysis of these considerations, exploring the potential benefits and challenges of developing an Employee Management System in Android.

II. EXISTING SYSTEM

The task at hand is to create a system that can efficiently manage employee data, job assignments, and access control. The system should leverage technology to process information accurately and in a timely manner while ensuring data privacy and security. The goal is to establish an employee information system that can track employee status, attendance, and process monthly salaries with minimal errors. The current manual system for managing employee records is cumbersome and makes it difficult to search for employee salary information. The objective is to reduce the challenges of the existing system and streamline the employee management process. Managing employee information manually can be quite challenging. For instance, the process of leave management often involves filling out forms, which can take weeks or even months to get approved. Additionally, handling paperwork increases the likelihood of human error, and there is the risk of confidential information falling into the wrong hands. Moreover, current systems often lack employee self-service, which means that employees cannot manage their own information without going through their HR departments or managers. Furthermore, multinational corporations face challenges in accessing employee information from remote locations on short notice, as all the data is usually stored at the headquarters. To address these challenges, a web-based HR management system can be designed and implemented. This system would store employee information in a database, with full privacy and access control. This report documents the process of developing both the application program and database, along with the development tools used for these purposes. The system consists of an application program and a database that serves as a repository of data. The program's basic operations are to retrieve, insert, update, and delete data, with additional functionality intended for further module development. Starting the development process by designing and constructing the database is a strategic approach, as it determines the structure of the application program. The logical database model, including tables, their content, and their relationships, should meet the given task's basic requirements. The program interface should be user-friendly, and the program should be easy to use. Controls and forms should be logically and functionally related within the program and fully align with the database structure. Establishing connections with the database every time a query is needed and considering exception-handling for potential errors during system development is also essential.

III. PROPOSED SYSTEM

This project aims to design an Employee Management System that overcomes the limitations of existing employee management software. The proposed system will manage employee information, including personal profiles, as well as leave requests and project monitoring from creation to completion. The system will also provide training resources for active and inactive employees. Key features to be added include employee profiles, leave management, and notifications.

To ensure efficiency and ease of maintenance, content and layout should be separated to allow for easy modification of page design without having to edit each page. Layout design should provide good contrast between text and

background and take into account the size of the monitor. The use of color, text, fonts, and graphics should be carefully considered and visually appealing to visitors.

IV. CORE TECHNOLOGY

1. **Oracle-**

Oracle Corporation produces and markets a multi-model database management system known as Oracle Database. The main function of this system is to store and retrieve related information as a single unit. This database server is a valuable tool in resolving issues related to information management. Oracle Database is classified as a relational database management system (RDBMS) and can also function as an object-relational database management system (ORDBMS), which includes object-oriented features like user-defined types, inheritance, and polymorphism. Oracle is a major contender in the enterprise IT sector and is primarily known for its core product, the Oracle Database, which is a popular relational database management system. With its capabilities in Database Management, Storage Management, High Availability, and Scalability, developers can focus on creating high-performance applications.

2. **Java-**

Java is a programming language and software platform that is widely used in various devices, such as mobile phones, gaming consoles, medical equipment, and computers. Its syntax and rules are based on the C and C++ languages. One of the main advantages of using Java is its portability, allowing the code to be easily transferred from one device to another.

Java was created in 1991 by James Gosling of Sun Microsystems (later acquired by Oracle) with the goal of enabling developers to "write once, run anywhere." Unlike JavaScript, Java code needs to be compiled and can be executed in many different environments, not just web browsers.

Despite the constant emergence of new software development tools, Java has managed to maintain its popularity for over two decades, and it remains the top choice for many developers over other languages like Python, Ruby, PHP, Swift, and C++. As a result, proficiency in Java continues to be a valuable skill in the job market.

3. **Android-**

The Android operating system is designed for mobile devices such as smartphones and tablets. It is based on the Linux operating system and can be downloaded on various computer platforms, including Windows, macOS, and Linux. Android Studio is an Integrated Development Environment (IDE) designed for developing applications for the Google Android platform. It offers comprehensive support for Kotlin, including built-in tools that make it easy to convert Java-based code to Kotlin. The IDE includes a full suite of Android tools for designing, testing, debugging, and profiling your application. It uses Gradle, a powerful build automation tool, to manage your project.

To get started with Android development, you'll need a basic understanding of Java programming. Android Studio makes this process even easier by providing wizards and templates that help you configure your system requirements, such as the Java Development Kit (JDK) and available RAM. It also offers a customized default Android Virtual Device (AVD) emulation and an updated system image to get you up and running quickly. Android Studio is the officially integrated development environment and designed specifically for Android development.

V. WORKING

To manage employees effectively, a comprehensive system with various modules is required. The system begins with a login page that allows authorized personnel to access it.

1. **Login Page-**

The employee will be provided an employee code and using this code and this mobile number he will be able to login the system. If given employee code and mobile number matches then only the employee can login to the system otherwise it will show an error message

2. **Add New Pin-**

This page is designed to appear after an employee enters their employee code and mobile number. To access the home page, the employee must input the correct pin.

3. **Home Page-**

The homepage consists of various modules such as leave application, indent application, salary slips, leave card, head of department, and notifications. It offers employees the option to upload their own profile picture.

3.1 Leave Application-

A formal request for leave requires an employee to provide their identification number, full name, and contact

information. The employee must also indicate the type of leave they require and specify the duration by selecting the relevant dates. Additionally, the employee should provide a valid reason for their absence. This

information should be submitted using the appropriate form or process as required by their employer. It is important to ensure that all the required details are included and that the request is submitted in a timely manner to allow for proper planning and approval.

3.2 Notification-

This tool can be beneficial in keeping employees informed about the latest developments in the industry, as well as updating them on upcoming meetings and daily activities.

3.3 Salary Slip-

This module pertains to employee salaries and provides a monthly report on the amount credited to them accounts. The report indicates both the amount credited to the employees' accounts as well as the total amount received by the employees.

3.4 Indent Application-

This module can be useful for employees who have system-related requirements such as requesting a new system, repairing a monitor, updating their system, and other related tasks. It is a platform were employees can submit their requests for assistance or support with their systems.

3.5 Leave Card

The employee will be able to determine whether their leave application has been approved or not by checking their leave card.

VI. UML DIAGRAMS

1. Flowchart

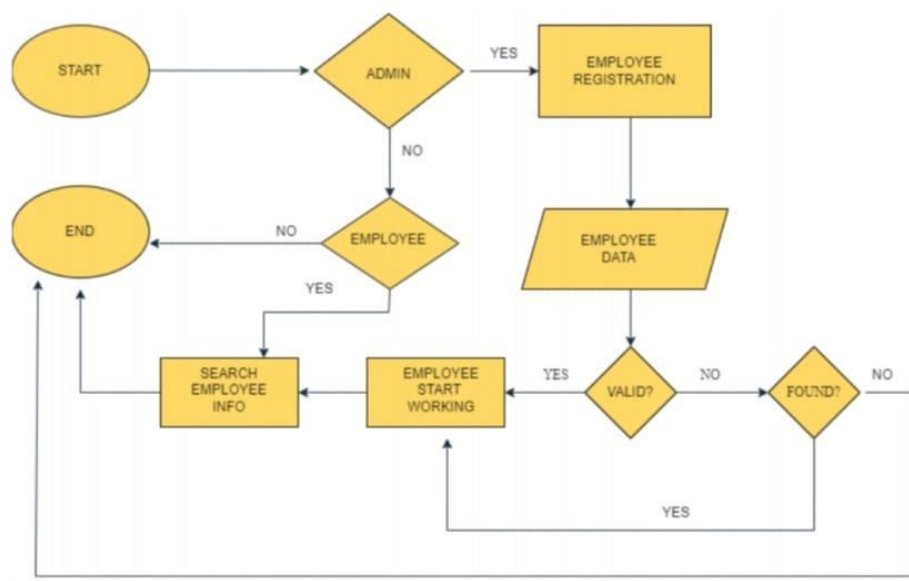


Fig.1. Flowchart

2. Use Case Diagram

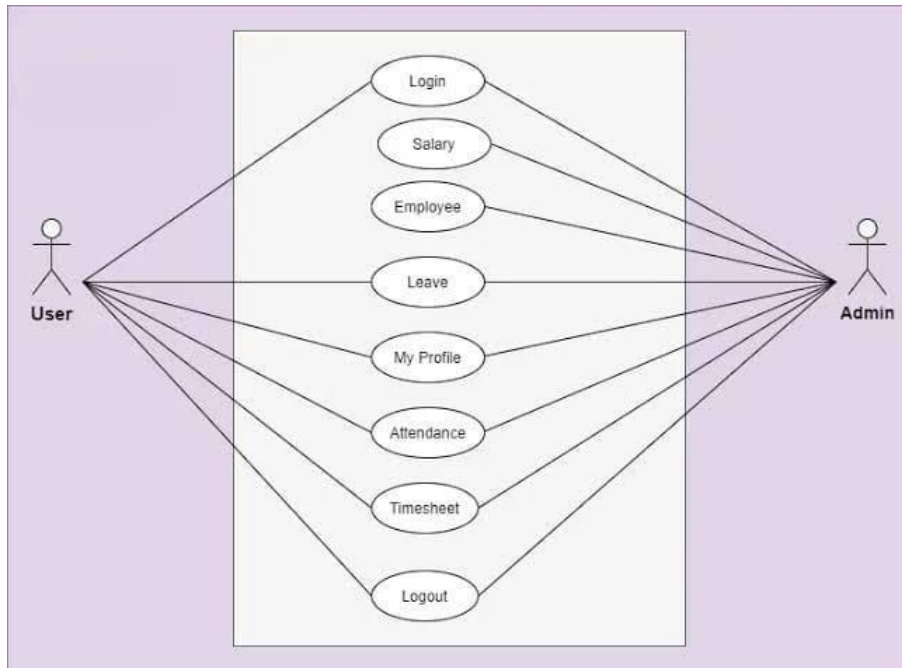


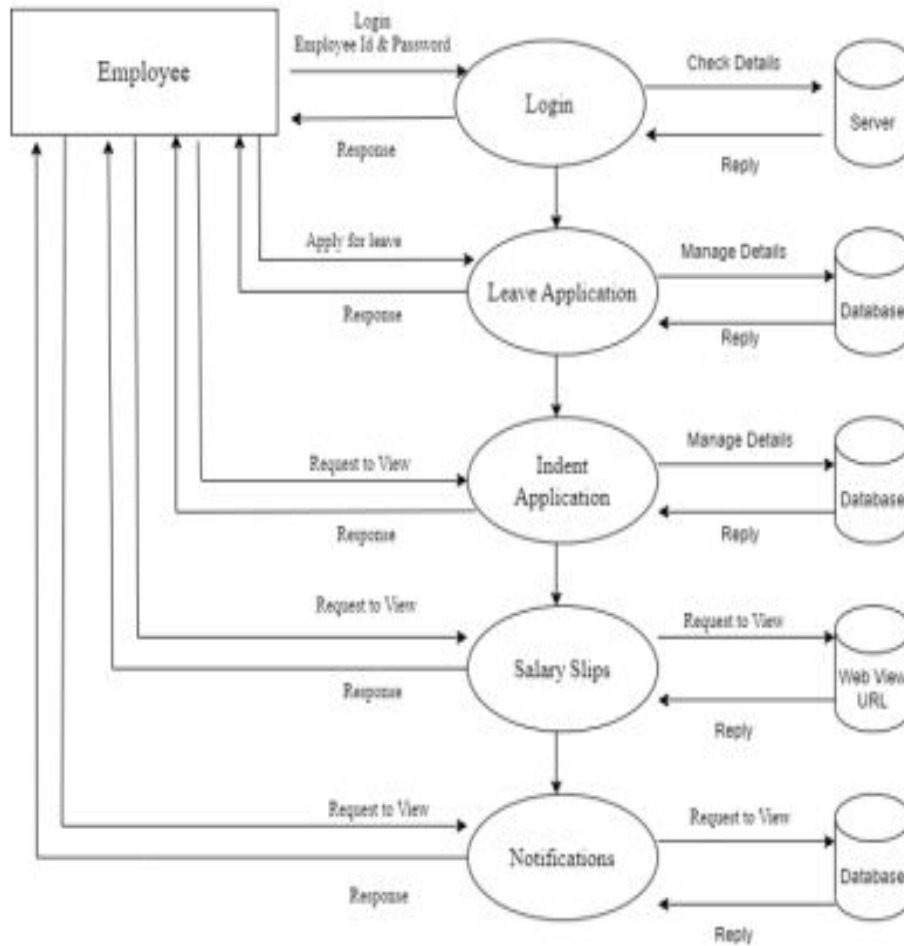
Fig.2. Use case

3. Data Flow Diagram

Fig.3. DFD level 0



Fig.4. DFD level 1



VII. SCREENSHOTS

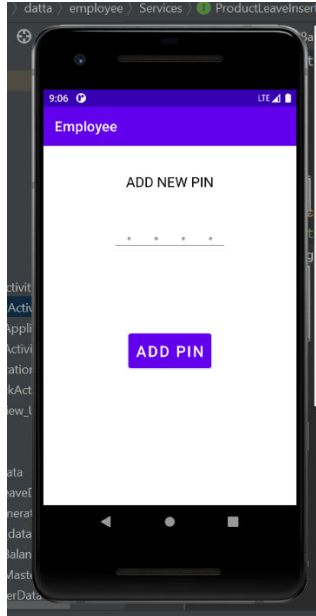


Fig.5. Login Page



Fig.6.Add New Pin Page



Fig .7.Home Page

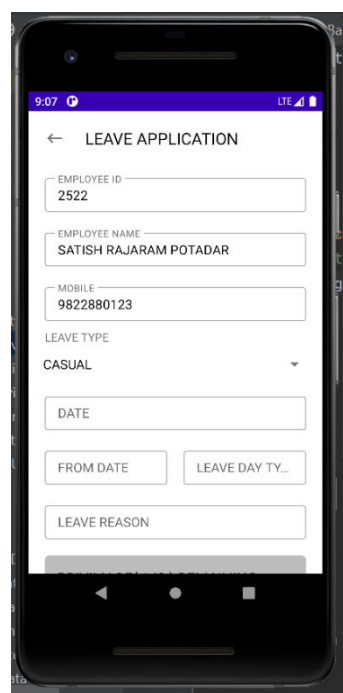


Fig.8.Leave Application

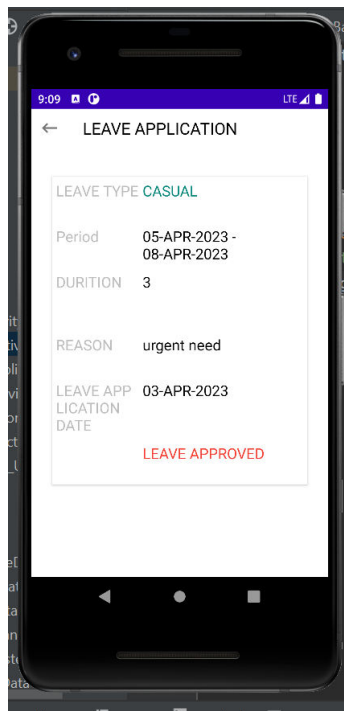


Fig.9.Salary Slip

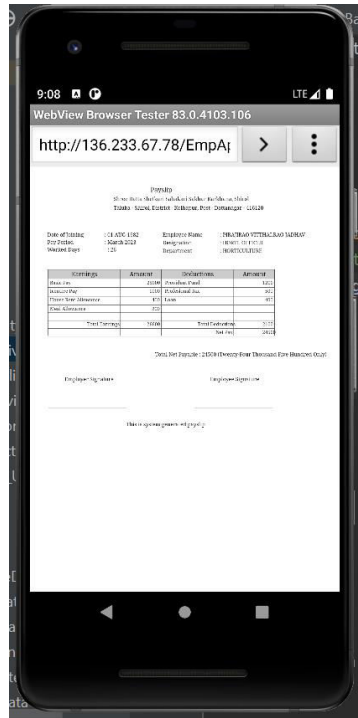


Fig.10. Leave card



Fig.11. Notification

VIII. CONCLUSION

Our project has been successfully completed and has proven to be extremely useful for all employees who use the app to maintain information at different levels. The app efficiently connects the admin and employees, making it easy to

manage information. It allows the admin to set notifications to the respective employees without requiring someone to manually send them. Employees can apply for leave directly through the application and access their salary slips. This system is particularly beneficial for employees in the industry, as it streamlines all work-related activities with just a single click. Moreover, it promotes transparency among all users of the system, making it highly interactive. The system's use of technology significantly reduces paper usage and eliminates redundancy. In addition to managing employee activities, the system is also used to evaluate employee performance. By using this system, we are able to save power, time, and money. Overall, this system is a valuable asset to the organization, helping to improve efficiency and effectiveness.

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