



## WORK TRACK: AN AUTOMATED EMPLOYEE ACTIVITY TRACKING AND MONITORING SYSTEM

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**Abstract**— Clock track is an advanced mobile application designed to simplify the process of tracking employee work hours for businesses. The concept of employees existing in the history of world were rulers and landlords take possession on employees over decades. Employees are someone who is expected to be get paid for their calculated amount of work presented to their respective owners or organization who usually will own them for a stipulated period of time until the organization meets the anticipated job to be done. The activities of layman will be keenly supervised continuously or over a sorted duration. At early days this will be traditionally carried out by a specified labor for this purpose. It is made out of different methods over time, later at an era of modesty technologies emerge to boom upon where only much of physical tasks are generally made out of those olden times, the tracing of work activities by layman are said to be done by manual registers. Here, the likelihood of tampering could be happened which belongs to a certain organization. In order to get rid of those malignant occurrences the application aims to create an application for tracking the work activities of employees by making use of react native technology in java script by which any of the unauthorized alterations on registers can be avoided. It will provide a better working experience for both the employees and manager who govern the respective activities of employees. It avoids any unnecessary conflicts between them by eliminating the need for traditional methods of attendance registration which can be tampered easily. It comes with add-ons such as monitoring the login and logout time, geographical location, duration worked by employees. The application provides a range of features, including clock-in, clock-out, and break management, to help businesses manage their employee time and attendance accurately and efficiently.

**Keywords**--- Work tracking App, Employee activity monitoring, Information portal, Mobile application, Android development, React native, Security.

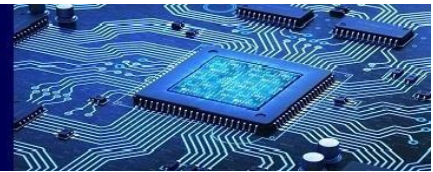
### I. INTRODUCTION

Clock track is a mobile application designed to simplify the process of tracking employee work hours for businesses. In today's fast-paced business environment, tracking employee work hours can be a time-consuming and challenging task. A clock tracking app is a software app that makes individuals or organizations to keep track of their working hours or the time spent on various tasks throughout the day. This software tool that helps companies and organizations monitor the working hours and attendance of their employees. The application allows employers to track the time spent on tasks and projects, calculate overtime and leave balances, and generate accurate reports for payroll and

billing purposes. The benefits of using employee time tracking applications are numerous. They help reduce errors and discrepancies in payroll processing, ensure compliance with labor laws, increase transparency and accountability, and optimize resource allocation. They also provide valuable insights into employee performance, allowing managers to identify areas for improvement and make informed decisions about staffing and scheduling. The typical flow of an employee time tracking application begins with employee login, where they can access their timesheet or punch in/out. The application then tracks their time spent on specific tasks and projects, as well as their breaks and absences. Managers can view real-time reports and analytics, such as attendance records, overtime hours, and time off requests. It can be used in various industries, including manufacturing, healthcare, retail, and professional services. They can be accessed via desktop and mobile devices, making it easy for employees to log their hours from anywhere, anytime. This type of app can also be used by anyone who needs to track their time for billing purposes, project management, or personal productivity.

With businesses needing to track employee work hours to ensure compliance with labor laws and improve operational efficiency, the need for an accurate and efficient time and attendance management system has become essential. The clock track application provides a range of features, including clock-in, clock-out, break management, and scheduling, to help businesses manage their employee time and attendance accurately and efficiently. By automating this process, managers can focus on more strategic tasks, while employees can be confident that their hours are accurately recorded and compensated. The application uses GPS and latitude and longitude coordinates to verify the employee's location, ensuring that they are within the range of the company's premises before allowing them to clock in. This feature eliminates time fraud, ensuring that employees can only clock in when they are physically present at the workplace. The clock track application is built using modern mobile technologies, including React Native for the frontend and .NET and SQL for the backend. These technologies ensure that the application is fast, efficient, and secure. The application can be accessed from any mobile device, making it a flexible and accessible solution for businesses of all sizes. Here is an outlook of how the application works:

- Employees log in to the application using their unique credentials.



- They can then clock in and clock out of work manually or through automatic tracking methods.
- Time data is stored in a central database that employers can access to generate reports and invoices.
- Employers can also track employee activities, such as project time tracking.
- The software offers a range of integrations with other tools, making it a versatile solution for businesses of all sizes.

One of the key features of clock track is its clock-in and clock-out system. The application uses GPS and latitude and longitude coordinates to verify the employee's location, ensuring that they are within the range of the company's premises before allowing them to clock in. This feature eliminates time fraud, ensuring that employees can only clock in when they are physically present at the workplace. The clock-in and clock-out feature is also designed to be simple and user-friendly. Employees can easily clock in and out using their mobile devices, and the application provides real-time data on employee work hours, which can be accessed by managers and administrators through the web dashboard. This feature enables businesses to monitor employee work hours in real-time, allowing them to identify any issues quickly and take corrective action. Another key feature of clock track is its break management system. The application tracks employee break times, ensuring that employees take the required number of breaks and return to work within the designated timeframe. This feature helps to ensure that employees take appropriate breaks throughout the day, improving productivity and reducing the risk of burnout. The user interface of clock track is designed to be simple and intuitive. The application's user-friendly interface makes it easy for employees to clock in and out, manage their breaks, and view their work hours. The application can be customized to suit the specific needs of each business, and it can be easily integrated with other business management systems, such as payroll and HR software. Clock track is built using modern mobile technologies, including React Native for the frontend and .NET and SQL for the backend. These technologies ensure that the application is fast, efficient, and secure. The application can be accessed from any mobile device, making it a flexible and accessible solution for businesses of all sizes. One of the significant advantages of clock track is that it provides businesses with an accurate and efficient way to track employee work hours. The application generates real-time data on employee work hours, which can be used by managers and administrators to make informed decisions. The application also helps businesses to ensure compliance with labor laws, reducing the risk of penalties and fines. In addition to tracking employee work hours, clock track can also be used to manage employee scheduling. The application allows managers and administrators to schedule shifts, assign tasks, and communicate with employees in real-time. This feature

helps to streamline the process of employee scheduling, reducing the administrative burden for businesses and ensuring that employees are always informed about their work schedule. Overall, clock track is a valuable tool for businesses looking to improve their operational efficiency and simplify their employee time and attendance management. The application provides businesses with an accurate and efficient way to track employee work hours, ensuring compliance with labor laws and improving productivity. With its simple user interface and powerful features, clock track is a must-have for businesses looking to optimize their time and attendance management processes.

## II. RELATED WORKS

Employee time tracking applications have gained popularity among employers in recent years. These applications allow employers to keep track of their employees work hours and attendance, as well as monitor their productivity. There are some several popular employee time tracking applications which acts as a free time tracking software that allows employees to log their hours worked as per scheduled by their respective firms and track their time spent on different projects. A web-based time tracking software that offers a wide range of features to help employers monitor their employees' work hours and productivity. The software offers a free plan that allows users to track time spent on different projects, assign billable rates to projects, and generate reports on time spent and earnings. It also offers a paid plan that includes additional features such as team management, project templates, and invoicing. The time tracking feature allows employees to log their hours worked and track their time spent on different projects. Employees can start and stop the timer as they work on different tasks, and the software will record the time spent on each task. The software also allows employees to manually add time entries if they forget to start or stop the timer. It's reporting feature allows employers to generate reports on time spent and earnings. Employers can view reports on individual employees or teams, as well as reports on specific projects or clients. The software also allows employers to export reports to Excel or PDF format for further analysis. It is a cloud-based time tracking software that offers a range of features to help businesses manage their employee time effectively. Another popular employee time tracking application that offers similar features to Clockify. Toggl allows employees to track their time spent on different projects and tasks, and the software offers a reporting feature that allows employers to generate reports on time spent and earnings. Toggl also offers a paid plan that includes additional features such as team management and project templates. It is a time tracking software that focuses on productivity rather than billable hours. The software monitors employee computer usage and generates reports on their productivity levels. It offers a detailed analysis of how users spend their time online, providing information on the websites and applications they use, the amount of time spent



on each, and their overall productivity levels. The software also allows employees to set goals and track their progress towards those goals by providing a detailed insight into how they spend their time. Another popular time tracking software that offers similar features to Clockify and Toggl. The software allows employees to track their time spent on different projects and tasks, and the software offers a reporting feature that allows employers to generate reports on time spent and earnings. Harvest also offers a paid plan that includes additional features such as team management and project budgets.

### III. PROPOSED SYSTEM

To develop an android application for tracing and governing the activities of employees working in a firm or organization by auto storing the data using react native. The data will be automatically registered to database with the integration of APIs, thereby represented manager can fetch the required data of a specified employee. This predominantly maximizes the work efficiency, saves time and excess expenditure on labors. The proposed system of an employee time tracking mobile application is aimed at providing a user-friendly platform for employees to record their working hours accurately and efficiently. The application would allow employees to clock in and out of work, as well as monitor their break times, without the need for any manual processes. The application would also provide managers with real-time data on employee attendance and productivity. Henceforth supplies an intellect and user-friendly interface which gives a simplified work space to the accessor.

The proposed system would have the following features:

**Employee clock-in/clock-out:** The application would allow employees to clock in and out of work with ease. This would ensure that accurate working hours are recorded, and reduce the likelihood of errors that may occur with manual processes.

**Break time tracking:** The application would enable employees to track their break times and ensure that they do not exceed the allowed time for breaks.

**Real-time data reporting:** Managers would have access to real-time data on employee attendance and productivity. This would allow them to monitor their team's performance and make informed decisions.

**Customizable settings:** The application would allow managers to customize the settings to meet the needs of their organization. This would include the ability to set up different pay rates for different types of work, as well as configure overtime and holiday pay rates.

**Mobile accessibility:** The application would be accessible on mobile devices, making it easy for employees to clock in and out from anywhere.

The employee time tracking mobile applications are designed to help employers and employees manage their work hours more effectively. These applications are particularly useful for companies that have remote or flexible work arrangements. The employee time tracking mobile application is essentially a software module that allows employees to clock in and out of work and track their hours. The application can be installed on a mobile device or accessed through a web-based interface. When an employee starts their workday, they simply log in to the application and click the "start" button to begin tracking their time.

The employee time tracking module allows employees to track the time spent on each task or project, including breaks and overtime. This information is then recorded in a database and can be accessed by both the employee and the employer. The employer can use this data to generate reports, track employee productivity, and manage payroll. Here's a set of actions showing the typical process of an employee using a time tracking mobile application:

- Employee logs in to the mobile application or web interface.
- Employee clicks the "Start" button to begin tracking their time.
- Employee selects the task or project they are working on.
- Employee can add notes or comments about the task or project if needed.
- Employee takes a break and clicks the "Pause" button to stop tracking time.
- Employee resumes work and clicks the "Resume" button to continue tracking time.
- Employee finishes work and clicks the "Stop" button to end the time tracking session.
- The data is recorded in a database and can be accessed by the employer.
- The employer can use this data to generate reports, track employee productivity, and manage payroll.

Overall, employee time tracking mobile applications can help employers and employees manage their work hours more effectively, which can lead to increased productivity, better time management, and improved work-life balance.

### USER AUTHENTICATION MODULE

User authentication is an essential module of any mobile application, including employee time tracking





applications. The authentication process ensures that only authorized users can access the application, which is critical to maintaining the security and integrity of employee time tracking data. The user authentication module starts when a user tries to log in to the application. The user enters their username and password, and the application sends the information to the server. The server verifies the credentials against the database and responds to the application with either a success or failure message. If the user credentials are correct, the application displays the home screen; otherwise, the user is prompted to re-enter their credentials.

Key Features of User Authentication Module:

**Secure Password Storage:** The user authentication module should ensure secure storage of user passwords. The passwords should be hashed and salted before being stored in the database to prevent any unauthorized access to the passwords.

**Two-Factor Authentication:** Two-factor authentication is an additional layer of security that requires users to provide two forms of identification to log in. It could be a combination of a password and a unique code generated by a smartphone app or sent via SMS.

**Forgot Password:** A forgot password feature allows users to reset their password if they forget it. The application should send a password reset link to the user's email address or phone number, enabling them to create a new password.

**Lockout Policy:** The application should have a lockout policy that temporarily locks out a user account after a specified number of failed login attempts to prevent brute force attacks.

**User Roles:** The user authentication module should support different user roles, such as administrator, manager, and employee. Each role should have specific permissions, ensuring that users can access only the features and data relevant to their role.

The user authentication module is a critical component of an employee time tracking mobile application, and it should be designed with security and usability in mind. The module should have robust password storage mechanisms, two-factor authentication, forgot password functionality, lockout policies, and support for user roles. These features will ensure that the application is secure, and only authorized users can access the data.

## EMPLOYEE PROFILE MANAGEMENT MODULE

The employee profile management module is responsible for managing all employee information within the application. The module can be accessed by authorized personnel, typically HR administrators or managers, who can

view and edit employee information as needed. The module is designed to store and manage the following types of information:

**Personal Information:** This includes the employee's name, address, phone number, email address, and other relevant personal details.

**Employment Information:** This includes the employee's job title, department, salary, date of hire, and other relevant employment details.

**Time Off Requests:** This includes the employee's time off requests, such as vacation days, sick days, and personal days.

**Timesheets:** This includes the employee's timesheet data, which is used to track their hours worked and calculate their pay.

**Performance Evaluations:** This includes the employee's performance evaluations, which are used to assess their performance and determine if they are meeting expectations. The employee profile management module of an employee time tracking mobile application is as follows:

**Employee Information Entry:** HR administrators or managers enter employee information into the application.

**Employee Information Storage:** The application stores employee information in a database.

**Employee Information Retrieval:** Authorized personnel can access the employee information from the database as needed.

**Employee Information Editing:** Authorized personnel can edit employee information as needed.

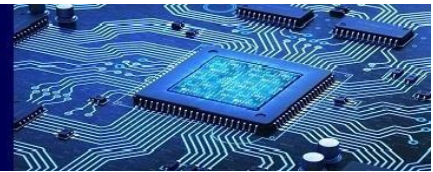
**Employee Information Approval:** Changes made to employee information are sent for approval by a designated manager.

**Employee Information Update:** Once approved, the updated employee information is stored in the database.

**Employee Information Access:** Employees can access their own personal information, such as timesheets and time off requests, through a secure login.

**Reporting and Analytics:** The application can generate reports and analytics on employee information, such as timesheet data and performance evaluations.

The employee profile management module is a crucial component of an employee time tracking mobile application. It allows companies to manage their employees' information efficiently, ensuring that all data is accurate and up to date. The flow diagram provided above illustrates the process of managing employee information within the application, from entry to retrieval, editing, approval, and update. With the help of this module, companies can streamline their HR processes, improve their data accuracy, and ultimately enhance their overall productivity.



**TIME TRACKING MODULE**

Time tracking module is an essential component of employee time tracking mobile applications. It allows organizations to monitor the time spent by their employees on various tasks, which helps in calculating their pay and measuring their productivity. The time tracking module in employee time tracking mobile applications comes with several features such as:

**Task Management:** It allows employees to manage their tasks and track their time spent on each task.

**Attendance Tracking:** It helps in tracking employee attendance and provides accurate data for payroll processing.

**Project Management:** It enables managers to assign tasks to employees and track their progress.

**Timesheets:** It allows employees to enter their hours worked and keep a record of their time spent on various tasks.

**Real-time tracking:** It provides real-time tracking of employee activities and progress on projects.

The time tracking module provides various benefits to the organization, employees, and managers, such as:

**Increased Productivity:** Time tracking allows organizations to measure employee productivity, identify bottlenecks, and streamline processes to increase productivity.

**Accurate Payroll Processing:** Time tracking module provides accurate data on employee attendance, time spent on various tasks, and helps in calculating their pay.

**Cost Savings:** Organizations can identify areas of wastage, reduce overtime, and optimize processes, resulting in cost savings.

**Improved Accountability:** The module encourages employees to be accountable for their time spent on work-related tasks, resulting in improved accountability.

Here's a set of things for a typical time tracking module:

- Employee logs in to the mobile application.
- Employee selects the task or project to work on.
- Employee starts the timer.
- The application tracks the time spent on the task or project.
- Employee completes the task and stops the timer.
- The application saves the time spent on the task or project.
- The data is synced with the organization's system.
- Managers can review the time data and calculate pay.
- The data is used to optimize processes and improve productivity.
- A time tracking module is an essential component of employee time tracking mobile applications. It

provides several benefits to organizations, employees, and managers and helps in optimizing processes and improving productivity.

**IV. EXPERIMENTAL RESULTS**

The Sign Up page can be used for the New Employee Registration.

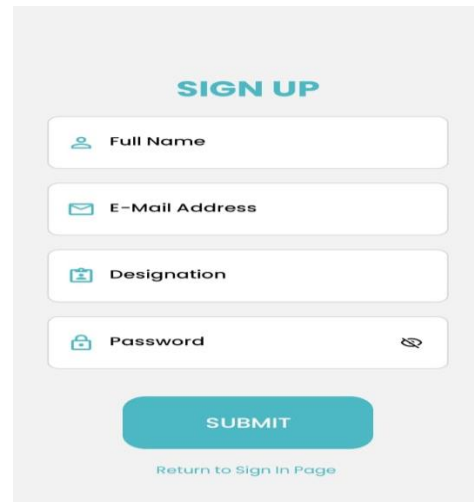


Fig.1.Sign up page

The Sign In page used to login for authentication.

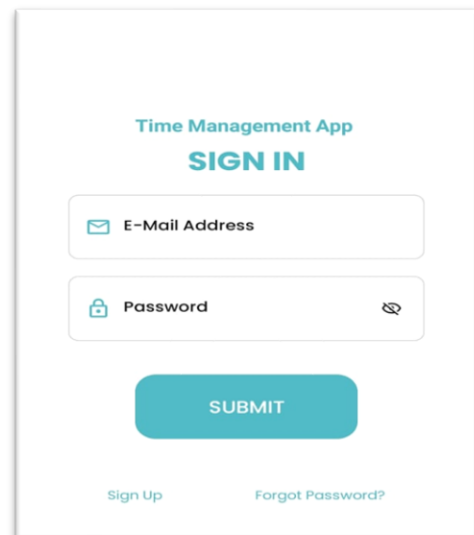


Fig.2.Sign in Page

After a successful login, employee's profile can be shown.

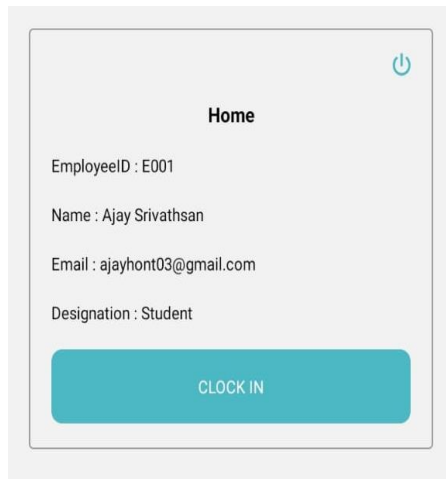


Fig. 3. Employee profile Page

The clock in represents the entry time of the employee.

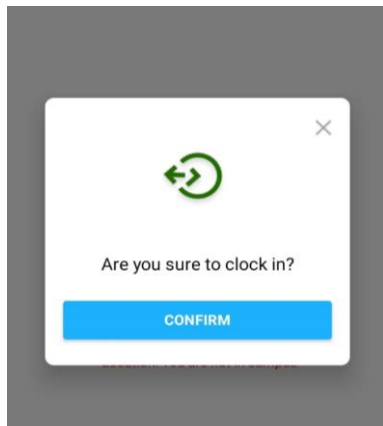


Fig. 4. Clock in screen

If the employee not in a range of the campus while clock in, they can not do clock in.

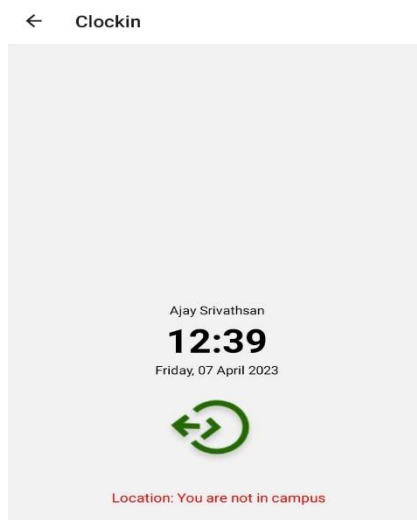


Fig. 5. Out of range Screen

To mark the out time, the clock out functionality can be used.

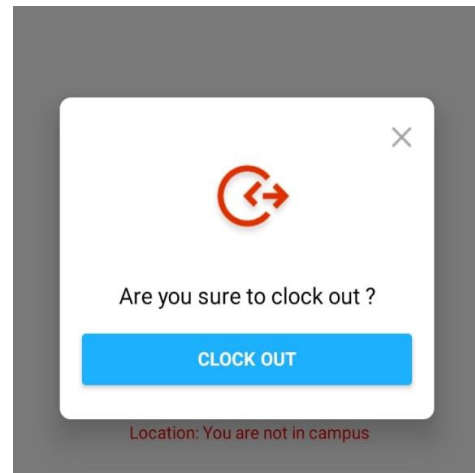


Fig.6. Clock out Screen

Also if the clock out attempted in out of range, it shows pop up and in range , the successful clock out can be done.

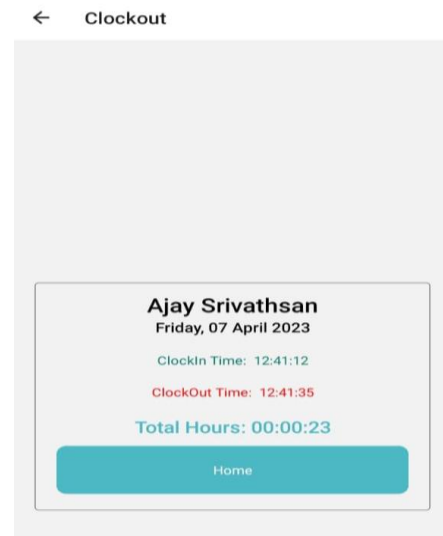


Fig.7. Clock out successful

## V. CONCLUSION

In conclusion, the development and implementation of our employee time tracking mobile application has been successful in achieving the project goals and objectives. Through extensive research and user testing, we have created a user-friendly and efficient application that helps organizations better manage their employee work hours and improve productivity. The employee time tracking mobile application consists of several key features that enable users to easily track their work hours and manage their schedules. The application allows employees to log in and track their work hours through a simple and intuitive interface. Users can view their schedules and time off requests, as well as receive notifications and alerts for upcoming shifts and





important deadlines. Meanwhile, managers can use the application to monitor employee attendance, approve time off requests, and generate reports on overall work hours and productivity.

The key Findings throughout the development and testing process that are related to the use of employee time tracking mobile application creates a quite major impact on real time speculation. These findings include:

- Employees appreciate the convenience and flexibility of being able to track their work hours from their mobile devices.
- Managers find it easier to monitor employee attendance and schedule changes when using a centralized time tracking system.
- Both employees and managers value the ability to easily view and manage schedules and time off requests through the mobile app.
- The availability of real-time notifications and alerts helps ensure that employees are aware of upcoming shifts and important deadlines.

These findings highlight the potential benefits of implementing an employee time tracking mobile application, including improved efficiency, increased accuracy, and enhanced communication and collaboration between employees and managers.

Thus employee time tracking mobile application provides a powerful tool for businesses and organizations to better manage their workforce and streamline their operations. With its user-friendly interface and robust feature set, we believe that this application will prove to be a valuable asset for any organization looking to optimize their employee management processes.

## VI. FUTURE ENHANCEMENTS

The potential of highly futuristic and advanced enhancements for an employee time tracking mobile application will bring forth a massive breakdown on the previous system. These enhancements include:

**AI-Powered Time Tracking:** This feature uses artificial intelligence (AI) to automatically track employee time and attendance, without the need for manual input from the employee. The system uses facial recognition, voice recognition, and other biometric data to accurately track employee time.

**Virtual Reality (VR) Integration:** The addition of VR technology can help employers create a more engaging and immersive work environment. For example, employees can attend virtual meetings or training sessions, without the need to physically be in the same room.

**Brain-Computer Interface (BCI) Integration:** BCI technology allows employees to control devices with their thoughts, eliminating the need for physical input devices like a keyboard or mouse. This can help employees with physical

disabilities or injuries to perform their work duties more easily.

**Predictive Analytics:** The use of predictive analytics can help employers forecast employee absences, overtime, and other key metrics. This can help employers plan and allocate resources more effectively.

**Blockchain Integration:** Blockchain technology can help improve data security and accuracy by creating a tamper-proof digital ledger of employee time and attendance data.

These are just a few examples of highly futuristic and advanced enhancements for an employee time tracking mobile application. While these technologies may not be widely available yet, they have the potential to transform the way we work and how we track employee time and attendance.

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