**1.INTRODUCTION**

Smart attendance refers to the use of modern technology to automate and streamline the process of tracking attendance in educational institutions, workplaces, or any other settings where monitoring attendance is required. The traditional way of marking attendance whether it's the paper register in classrooms, punching in timecards at work, or manually tracking student or employee presence is not only outdated but also prone to human errors, delays, and inefficiencies. These conventional methods can be heavy , especially in large organizations or educational institutions, where managing attendance can become a daunting task. Smart attendance systems leverage technologies like facial recognition, and mobile applications to make attendance tracking more efficient, accurate, and secure. These advanced systems are designed to make the entire process of monitoring attendance more **efficient, accurate**, and **secure**. From this Smart attendance system students will be updated about their upcoming tests, Exam, Extracurricular Activities. This helps students and teachers to sent Leave application letter from home without any problem.

### 3. BACKGROUND

In recent years, the traditional methods of attendance tracking, such as paper registers, punch cards, and manual roll calls, have become increasingly inefficient and prone to human error, especially in large organizations or educational institutions. These outdated methods can be time-consuming, prone to inaccuracies, and often difficult to scale. The challenges of managing attendance manually are even more apparent in settings with large groups, where it is easy to overlook discrepancies, forgetful entries, or deliberate falsifications, such as "buddy punching" or impersonation.

With the advancement of technology, there has been a growing shift towards digital solutions to address these issues. **Smart attendance systems** leverage modern technologies like **biometrics**, **mobile applications**, **NFC (Near Field Communication)**, **QR codes**, and **facial recognition** to provide more efficient, accurate, and secure alternatives to traditional attendance tracking methods. These technologies have revolutionized the way attendance is managed and monitored, not only improving accuracy but also reducing administrative workloads and enhancing security.

**Objectives**

The objective of this project are :

* To provide administrators and teachers with **real-time updates** on attendance patterns, including absences, subject wise tests and presence.
* To help teachers **save time** on attendance and use that time to **teach** and interact with students.
* To provide an organized way to keep track of student absences, making it easier for teachers to review and maintain records.
* To make student and teacher update about upcoming Tests and Exams.
* To allow students to **submit leave requests** digitally through the same platform, meaning teachers don’t have to manage paper-based leave applications or manually approve absences.

**Features**

* Allows for quick access to attendance reports.
* Students can submit leave requests through the system.
* Accessible on **mobile devices** for attendance and can check leave requests anytime, anywhere.
* Simplifies leave management and reporting.

**Literature review**

Plenty of research has been conducted so far on the various available methods for implementation of an effective attendance monitoring system. These methods vary in terms of the types of input method used, the types of data processing employed and the controllers used to implement the systems. In this section looking for the various available solution with the advantages and disadvantages of each system. First system, “Attendance System Using NFC Technology with Embedded Camera on Mobile Device” (Bhise, Khichi, Korde,Lokare, 2015). Near field communication is a type of short distance wireless communication that takes place between two devices, one active and the other passive. The two devices are basically inductor coils which can respond to an electromagnetic induction. The active device is utilized to produce an electromagnetic field of a given radius and strength. Which used to implement an attendance system. In a school setting for example, students can be given NFC tags that are uniquely programmed with their unique identification numbers. Upon attending the classes, the lecturers bring the NFC readers and a student is required to swipe their NFC tags near the reader, say the lecturers’ phone. This information is then transmitted to the school database to mark the attendance of the student. However this system is vulnerable to impersonation where one person can sign in for someone else. The other related systems that use biometrics (Fingerprint recognition RFID, etc) to identify end user are time management systems used in many colleges, institutions and schools. However, these system introduce further privacy concerns. These systems are also subject to physical damage from their users. Therefore they need additional maintenance costs. The idea proposed by us, Removes physical access from anyone to the automated system.