POSTER PRESENTATION

3rd year Mini Project

Department: Computer Science and Engineering

G.L. Bajaj Institute of Technology and Management, Gr. Noida

IEEE UP SECTION (INDIA)

GL BAJAJ Institute of Technology & Management — FIND YOUR SPARK

Group ID: 3CSE_A1G3

SMART ATTENDANCE TRACKER

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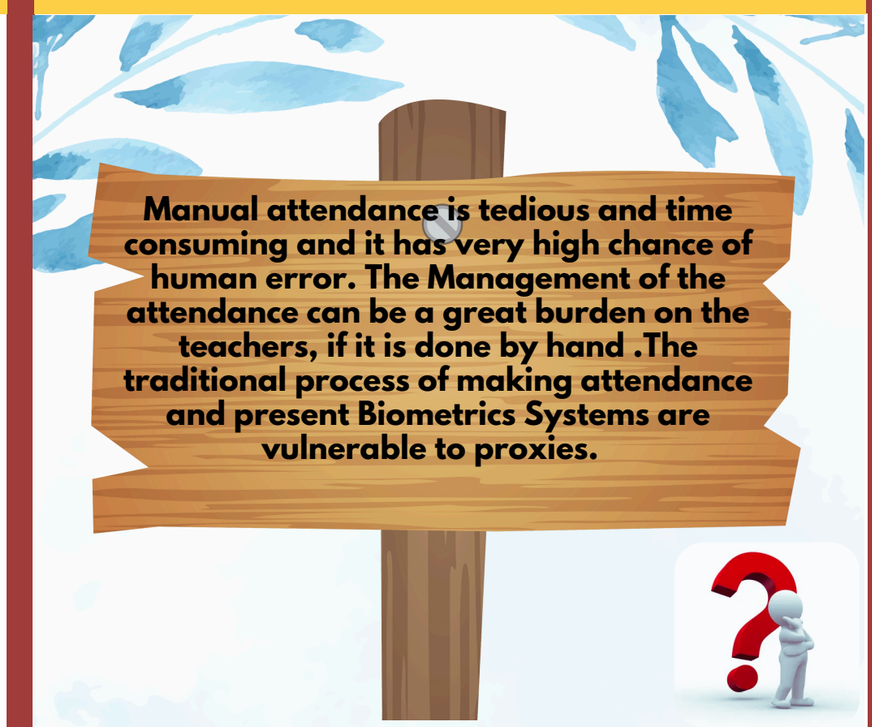
Problem Statement:



Motivation:

A smart attendance tracker offers several compelling motivations, making it a valuable tool for various organizations, educational institutions, and businesses.

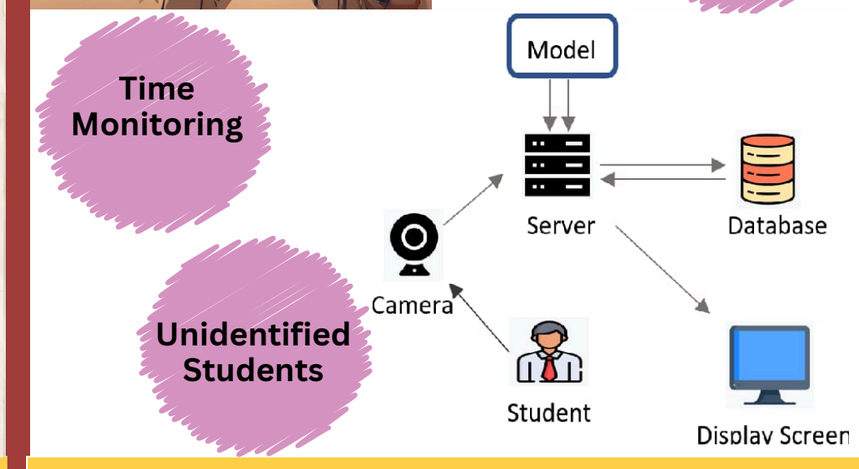
It can foster a culture of punctuality and responsibility as employees or students are aware that their attendance is being tracked automatically.

Implementing a smart attendance tracker improves efficiency, accuracy, and compliance while offering a clear return on investment through better resource management and accountability.

Objectives:

1. It aims to digitize and streamline the traditional attendance process by automating attendance through facial recognition.
2. It saves the time , prevents proxy , ensures accuracy making records tampering-proof and enhancing privacy.
3. Provide an intuitive interface that is easy for all users (employees, students, administrators) to operate with minimal training.
4. Reduce reliance on paper-based records, contributing to more eco-friendly and cost-effective administrative processes.

Proposed Idea/Solution



Technologies Used

- Flutter — Cross-platform mobile app developement framework
- Node.js — Node.js is designed to build scalable network applications.
- IOT — the collective network of connected devices and the technology
- python, pandas
- Flask, LLM, MACHINE LEARNING

Solution Environment

Hardware Components

The hardware acts as the foundation for data capture in the smart attendance tracker.

- Facial Recognition Cameras: Ideal for non-contact attendance logging, especially in educational institutions or high-security environments.
- IoT Devices and Sensors: Motion detectors or smart gates can be integrated for touchless attendance tracking and access control.

Software Components

Machine Learning for Behavior Patterns: Predict attendance patterns and suggest interventions (such as reminders for latecomers).

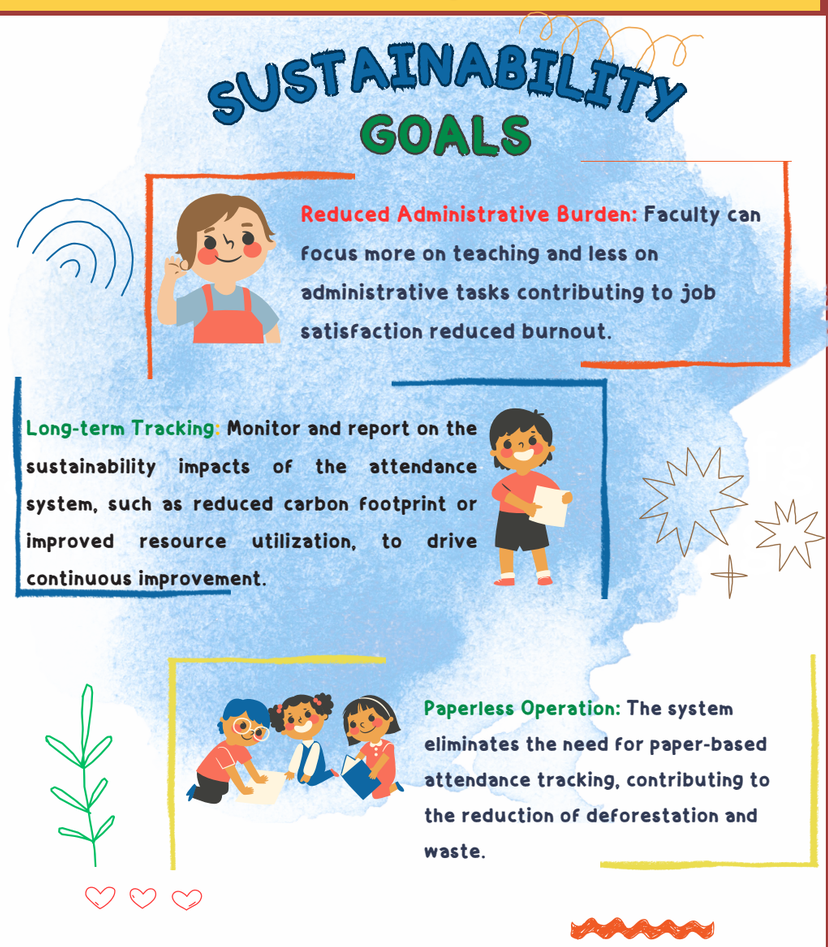
Mobile App Interface: Simple and intuitive, allowing users to mark attendance, view history, and receive notifications.

Automatic alerts for absenteeism, overtime, or breaches of attendance policies.

Impact & Benefits

1. Improved visibility to track & manage student's attendance based on their presence time in the class.
2. Reduced paperwork and manual data entry with reduced errors.
3. Real-Time Tracking with each student's presence is tracked in real-time and displayed visually .
4. If a face or identity is not recognized, a pop-up window alerts the system admin or teacher..
5. The system can generate detailed reports on student attendance patterns, punctuality, and overall engagement.
6. Improved Fairness in attendance records and Environment-friendly.

Sustainability Goals



Roadmap for Design and Implementation