**ARTIFICIAL INTELLIGENCE & MACHINE LEARNING (AIML) – Project**

**NAMES & Roll-No: Sec: 5**

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**Problem Statement: Attendance Management system using face recognition**

**Attendance Management System Using Face Recognition** offers an automated and efficient solution for tracking attendance in educational and professional environments. By leveraging face recognition technology, the system replaces traditional manual methods, which are often time-consuming and prone to errors. Using computer vision and machine learning techniques, particularly convolutional neural networks (CNNs), the system detects and recognizes faces in real-time. Once an individual is identified, their attendance is automatically logged with a timestamp in a secure database. This ensures accuracy, reduces the potential for fraudulent entries, and streamlines the overall attendance process.

The system workflow includes key steps such as face detection, feature extraction, and comparison with a pre-registered database to recognize individuals. Preprocessing techniques, like face alignment and image normalization, help improve accuracy under varying lighting and environmental conditions. With real-time processing capabilities, this attendance management system can be seamlessly integrated into classrooms, offices, or other settings, offering a scalable and reliable solution for efficient attendance tracking.

Additionally, the system can be extended with advanced features like real-time notifications, detailed attendance reporting, and integration with existing enterprise systems. This flexibility allows administrators to generate reports for specific individuals or periods and adapt the system for remote attendance using webcams, making it ideal for virtual classrooms or remote work environments. Its user-friendly design ensures that organizations of various sizes can benefit from improved efficiency and reliability in attendance management.