Web-based attendace system using AI Face Recognition

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01

Introduction & Problem Statement

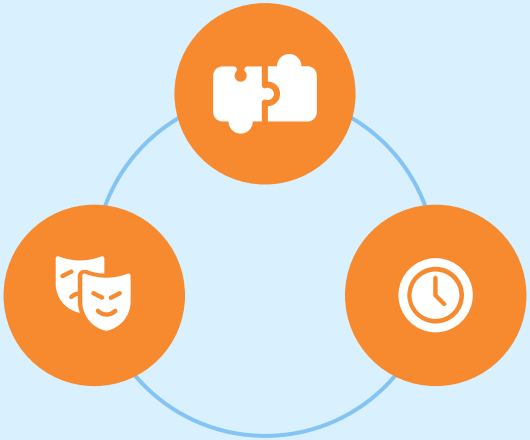
INTRODUCTION

"From faceprint to AI-powered smart cameras... attendance is now fully automatic!"

PROBLEM STATEMENT

Accuracy

Difficulty in accurately tracking student attendance



Manipulation

Higher chances of manipulation or human errors

Time

Wasting valuable lecture time on manual attendance

PROBLEM STATEMENT

Delay

Delay in generating accurate data and statistical reports

Real-time

Lack of real-time monitoring and insights for decision-making

Workload

Increased workload on faculty and administrative staff


A PICTURE IS WORTH
A THOUSAND WORDS

02

REQUIREMENTS

How We Gathered the Requirements

Observation

Study the current attendance process.

Identify gaps like delays, errors, and time waste.

Document Study

Review policies and attendance records.

Understand existing requirements and regulations.

Functional Requirements

User Requirement

Defines what the end-users need the system to do to perform their tasks effectively.

System Requirements

Specifies what the system must do and how it should perform to meet user needs.

User Requirement

Login Types

Three login types: Admin, Lecturer, and Student.

Automatic Attendance

Attendance is recorded automatically without manual input.

Grade Integration

Attendance counts toward course grades.

User Requirement

Unregistered Students

System detects students not yet registered.

Warnings

Students exceeding absence limits receive warnings affecting exam eligibility.

Reports

Individual attendance reports for each student.

User Requirement

Search

Admins/Lecturers can search for students and view all relevant info.

Lecturer Control

Lecturers can fully control attendance: start/end, set times, etc.

Chatbot

Integrated chatbot assists Students, Lecturers, and Admins.

User Requirement

Notifications

Real-time alerts for attendance events, late arrivals, or absences.

Multi-Device Support

Accessible on desktop, laptop, tablet, and mobile devices.

Analytics Dashboard

Visual dashboard shows attendance statistics.

Easy Interface

Intuitive UI reduces training needs for new users.

Functional Requirements

User Requirement

Defines what the end-users need the system to do to perform their tasks effectively.

System Requirements

Specifies what the system must do and how it should perform to meet user needs.

System Requirements

Data Storage	The system must have a secure database to store user data and attendance records.
AI Capabilities	The system must integrate an AI module for real-time face recognition and anti-spoofing.
Reporting	The system must be able to generate detailed attendance reports in various formats (PDF, Excel).
Notification System	The system must support real-time notifications for absences and lateness.

System Requirements

Backup and Recovery	The system must provide backup and data recovery in case of errors.
Real-Time Processing	The system must process data in real-time.
Authentication & Authorization	The system verifies the user's identity and defines what actions the user is allowed to perform after authentication.

Non Functional Requirement

Performance

The system should provide fast and efficient face recognition and attendance recording

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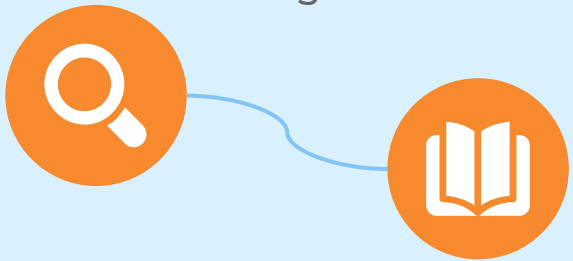

Reliability

The system should ensure stable operation and accurate attendance data

Non Functional Requirement

Performance

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Security

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Performance

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Security

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Reliability

The system should ensure stable operation and accurate attendance data

Scalability

The system should be able to handle an increasing number of users

Non Functional Requirement

Usability

The system should have a simple and user-friendly interface

Maintainability

The system should be easy to update and fix.

Compatibility

The system should work across different devices and platforms

Privacy

The system should protect user privacy and follow data protection rules.

Domain Requirements

ID

Each student and doctors must have a unique identifier stored in the system for accurate tracking

Cameras

Classrooms must be equipped with cameras to capture and verify student faces

Lighting

Proper lighting is required to ensure reliable face recognition

Domain Requirements

Internet

A stable internet connection is needed for syncing attendance data

Teacher Devices

Teachers should have access to laptops/tablets connected to the system

Central Database

All records must be stored in a central database for easy access and reporting

Domain Requirements

User Roles

Different roles (Admin, Teacher, Student) must be predefined with permissions

Legal Consent

The university must obtain approval for using facial data in compliance with privacy rules