Project Presentation

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SMART ATTENDANCE SYSTEM

Degree : Bachelor of Computer Application

Project Guide:
Mr. Harjinder Singh

Submitted by:-
Soumay Kumar(TCA2201607)
Zaid Ahmed(TCA2201731)
Ashish kumar(TCA2201141)

COLLEGE OF COMPUTING SCIENCES & TECHNOLOGY INFORMATION
TEERTHANKER MAHAVEER UNIVERSITY, MORADABAD

- **TITLE:**

  SMART ATTENDANCE SYSTEM

- **OBJECTIVES:**

Develop a system to automate and track attendance using facial recognition technology.

- **REQUIREMENTS:**

1. Python, OpenCV for facial recognition.
2. Hardware- IP Camera.
3. Database (e.g., MySQL, SQLite).
4. Frontend: HTML, CSS, JavaScript.
5. Backend: Django/Flask.

- **SCOPE OF WORK:-**

1. Designing and developing a web-based attendance tracking system.
2. Implementing facial recognition technology for attendance tracking.
3. Developing a database to store attendance records.
4. Creating a user-friendly interface for administrators and students.

- **METHODOLOGIES:-**

1. **Data Collection:** Capture facial images and fingerprint data of users.
2. **Preprocessing:** Process and extract facial features & fingerprint templates.
3. **Database Design:** Store user data, biometric details, and attendance records.
4. **Facial Recognition:** Use OpenCV to detect and match faces.
5. **Biometric Integration:** Integrate fingerprint scanner for authentication.
6. **Backend Development:** Develop backend using Django/Flask to manage logic & database.
7. **Frontend Development:** Design user-friendly interface using HTML, CSS, JS.
8. **Attendance Marking:** Automatically update attendance upon successful authentication.
9. **Testing:** Test system accuracy, functionality, and security.
10. **Deployment:** Deploy system with configured hardware and provide user access.

- **TECHNOLOGIES**:-

1. Programming Languages: Python, JavaScript

2. Frameworks: Django, React

3. Database: MySQL, SQLite

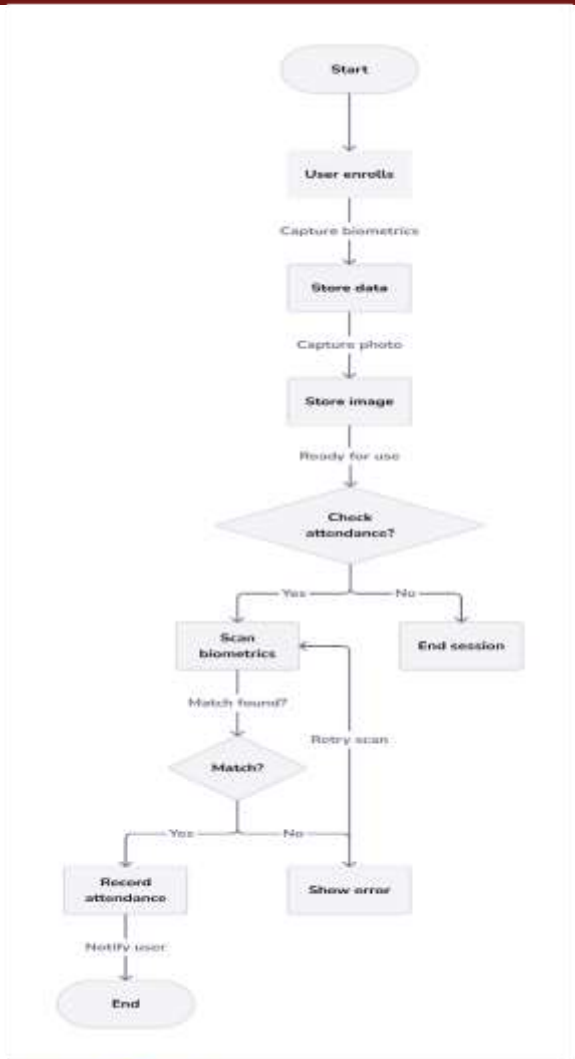
4. Hardware: facial recognition cameras

5. Testing Tools: PyUnit, Jest

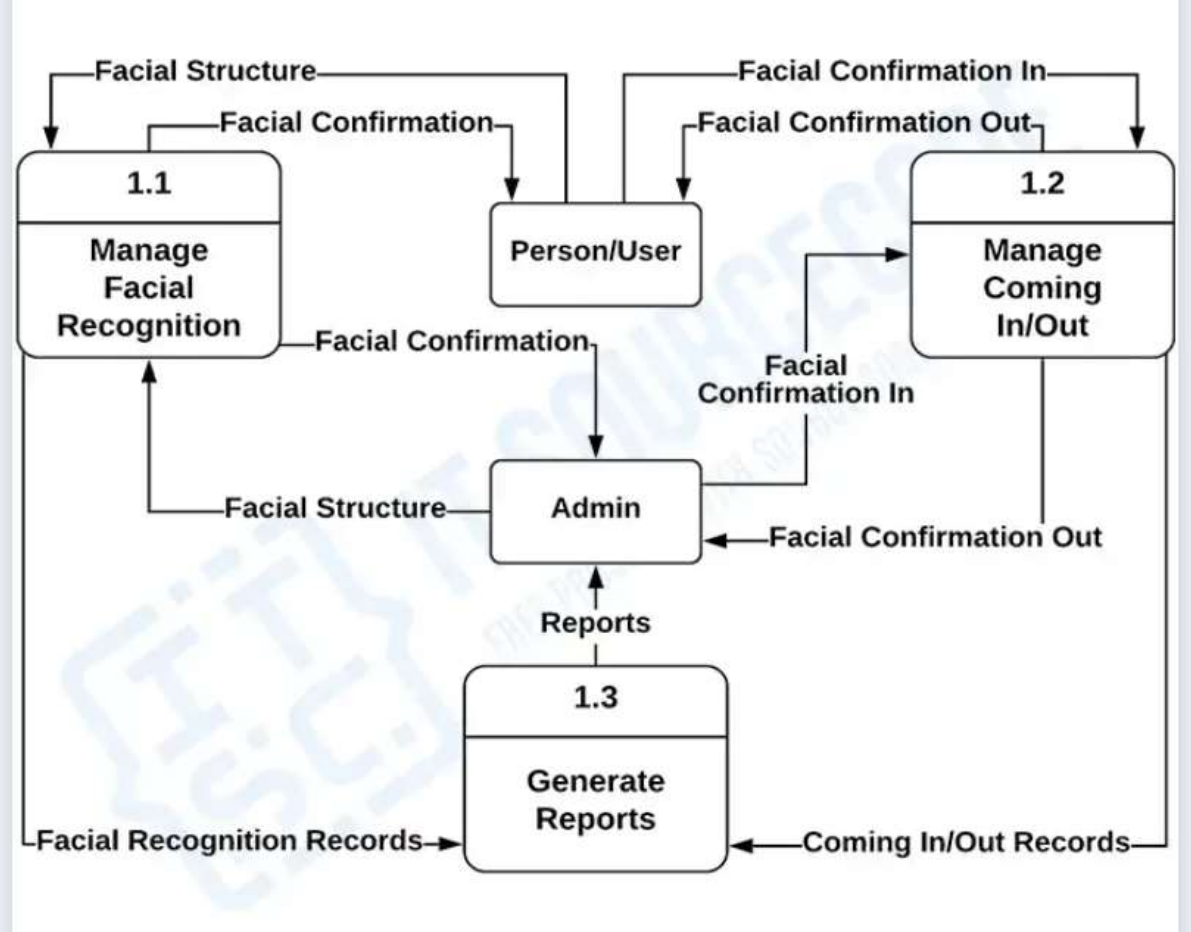
- **TOOLS:-**

1. IDE/Code Editor:- Visual Studio Code / PyCharm
2. Facial Recognition:- OpenCV (Python Library)

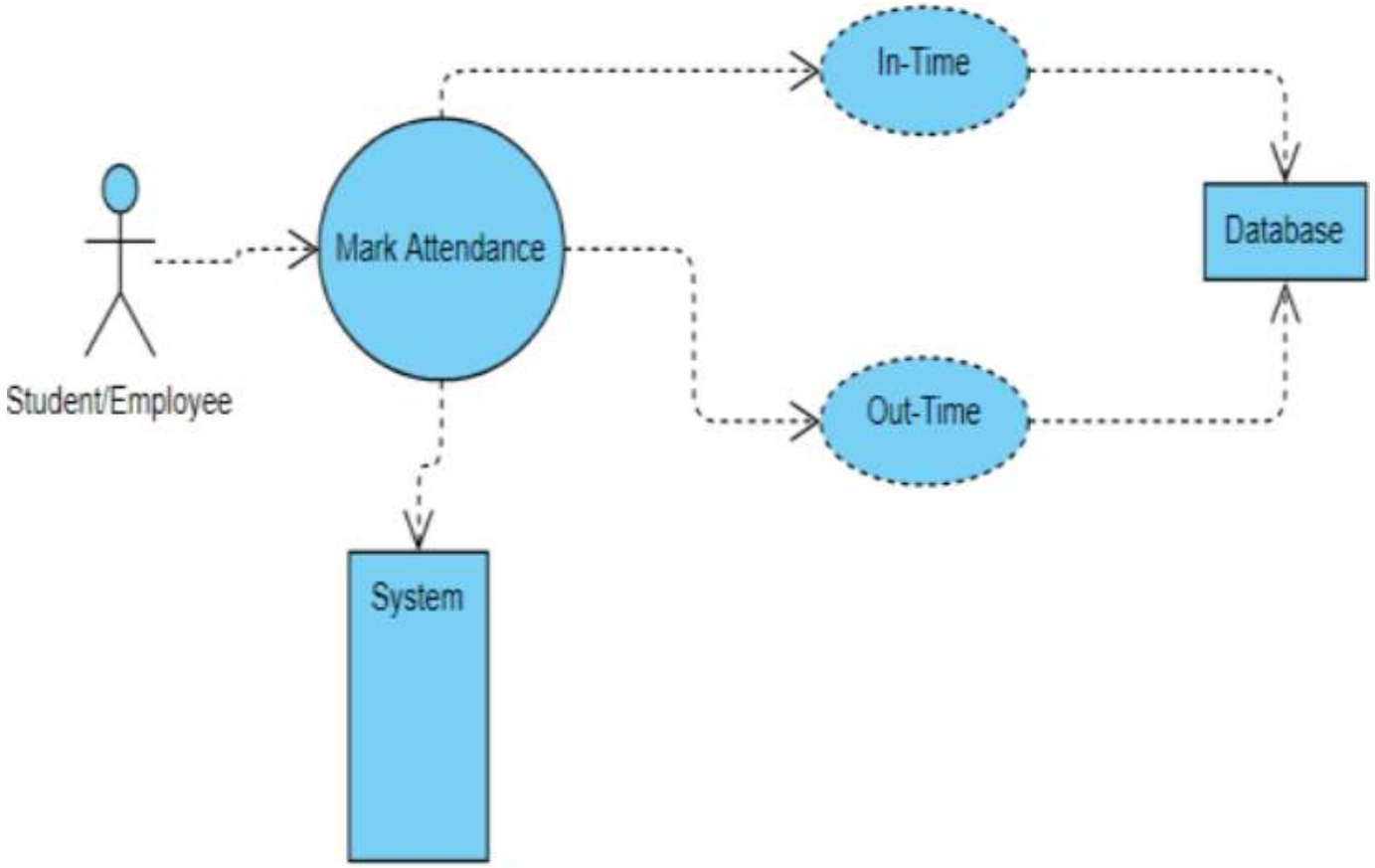
- FLOW CHART


Start
User enrolls
Capture biometrics
Store data
Capture photo
Store image
Ready for use
Check attendance?
Yes
No
Scan biometrics
End session
Match found?
Retry scan
Match?
Yes
No
Record attendance
Show error
Notify user
End
Made with Visily

- **DATA FLOW DIAGRAM**



- **Use Case Diagram**



- **ADVANTAGES OF THIS PROJECT**

1. Improved Accuracy: Automated attendance tracking eliminates human error, ensuring accurate attendance records.

2. Reduced Proxy Attendance: Facial recognition prevent proxy attendance, ensuring that only authorized individuals can mark attendance.

3. Increased Efficiency: Automated attendance tracking saves time and effort for administrators, teachers, and students.

4. Enhanced Security: facial recognition ensure secure storage and transmission of attendance data.

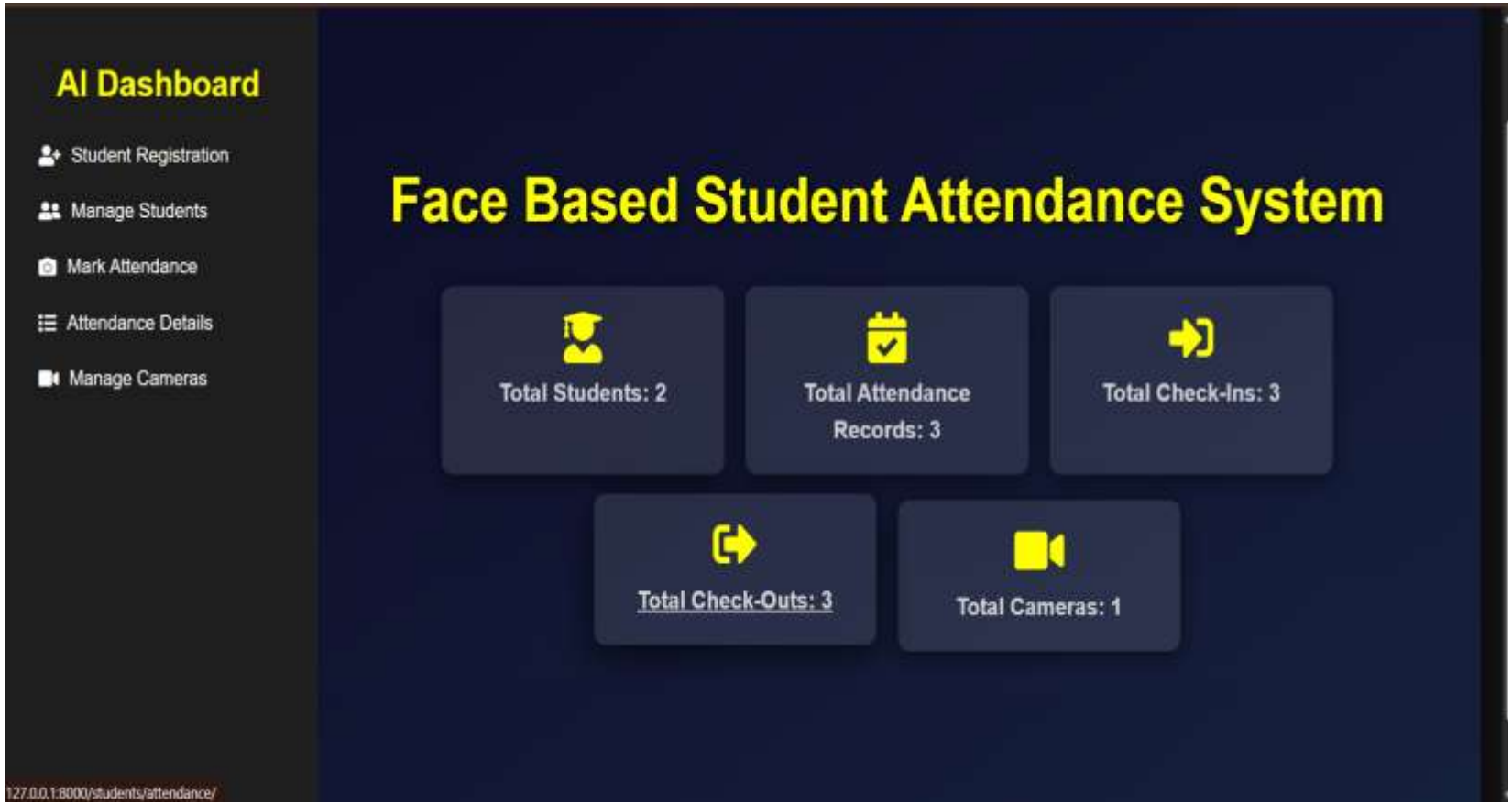
5. Real-time Attendance Tracking: Administrators can track attendance in real-time, enabling prompt action in case of absenteeism.

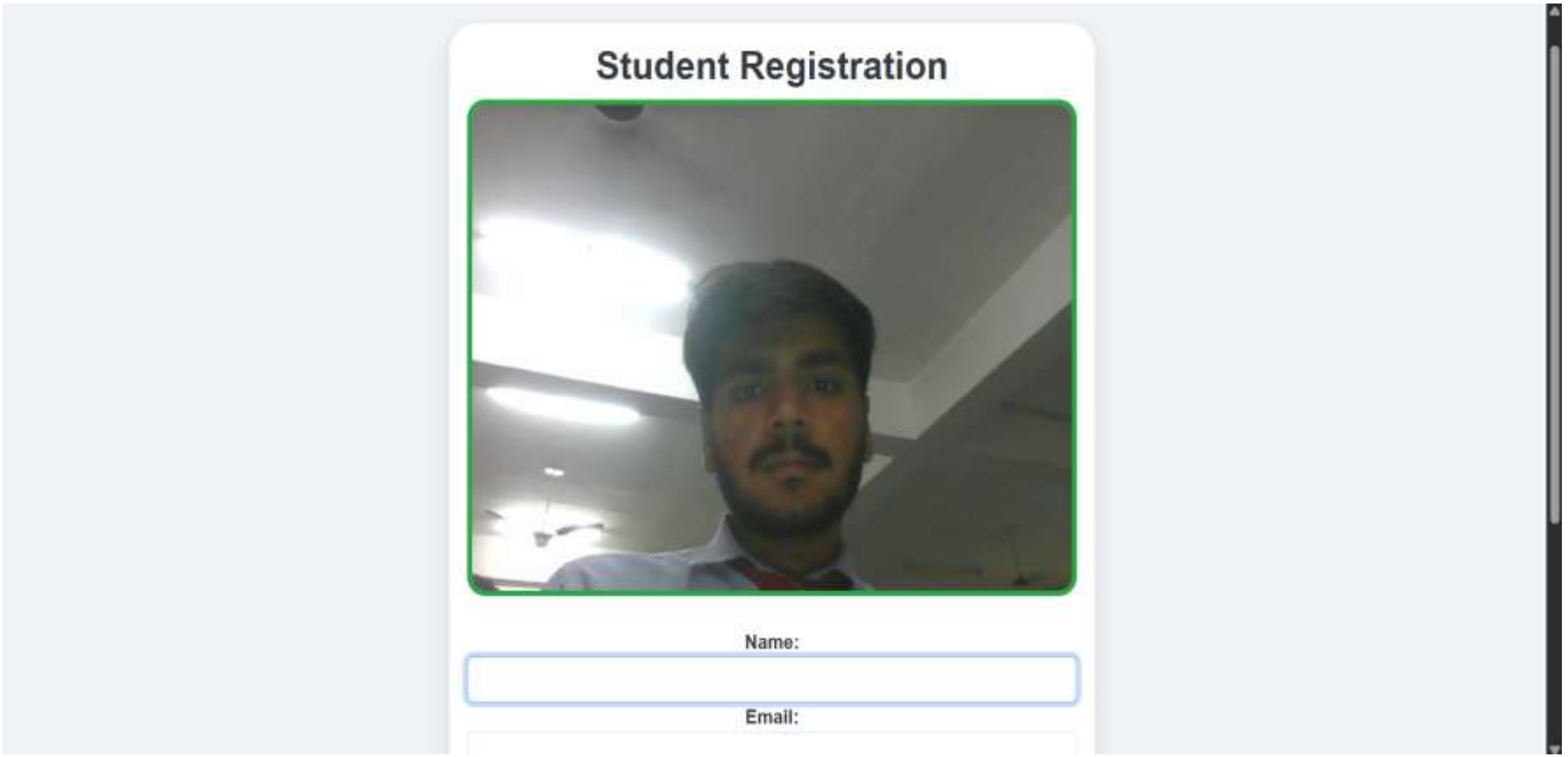
6. Reduced Administrative Burden: Automated attendance tracking reduces the workload of administrators, allowing them to focus on other tasks.

7. Improved Student Engagement: Accurate attendance tracking can help identify patterns of absenteeism, enabling targeted interventions to improve student engagement.

8. Scalability: The system can accommodate many students and administrators, making it suitable for large educational institutions.

- SCREENSHOTS




Student Registration
Name:
Email:

Name:

Email:

Phone Number:

Class:

Submit Registration

Back to Home

Student List

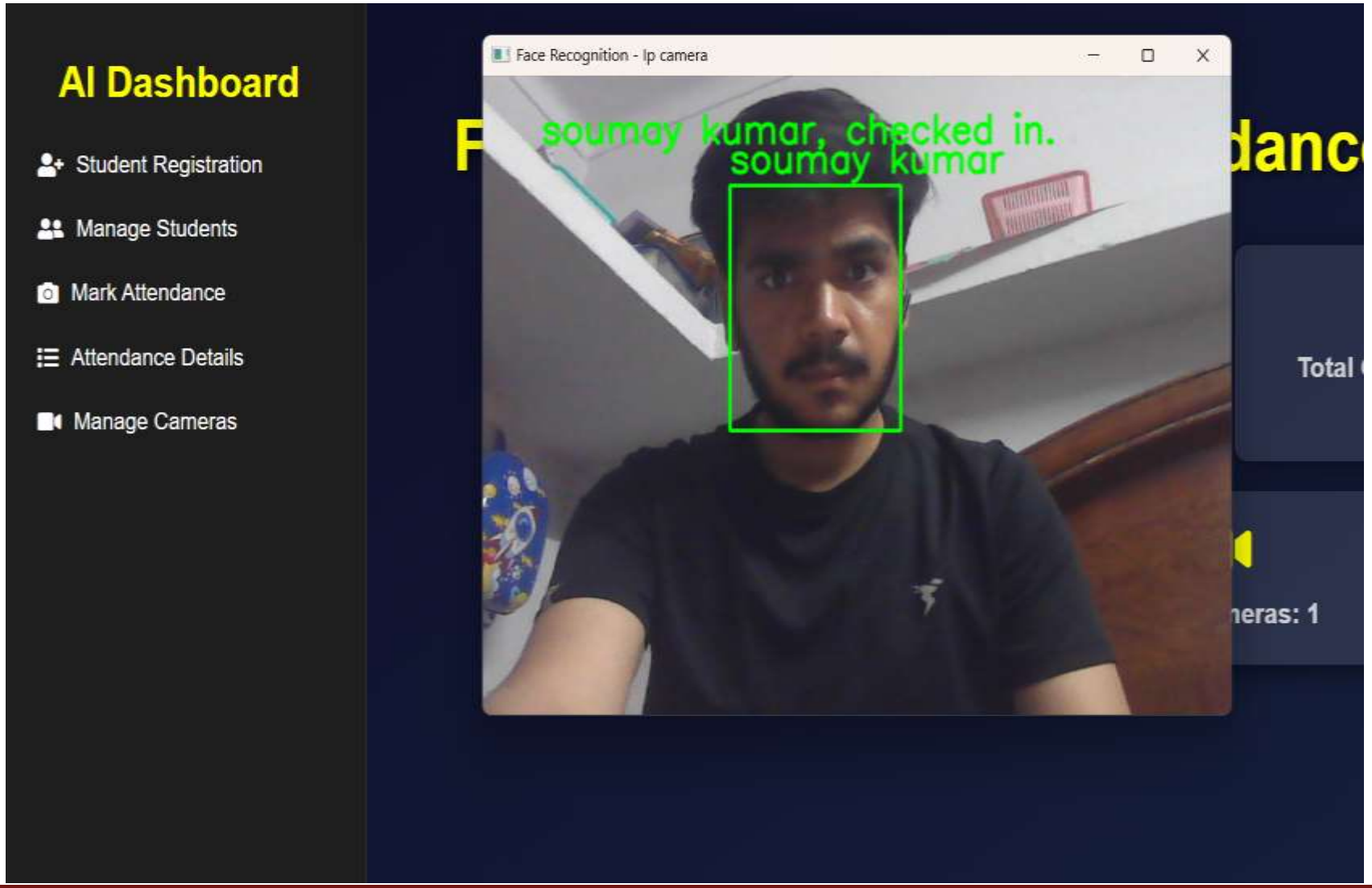
Name	Email	Phone Number	Class	Authorized	Actions
soumay kumar	soumaykumar25@gmail.com	9258090608	machine learning	Yes	View
zaid ahmed	zaid44617@gmail.com	7302367399	computer science	Yes	View

Back to Home

Student Attendance Records

Search for students... Search dd-mm-yyyy Filter

Student Image	Student Name	Attendance Date	Check-in Time	Check-out Time	Stayed Time
	soumay kumar	April 27, 2025	01:25:59 PM	01:27:08 PM	0h 1m 9s
	soumay kumar	April 28, 2025	07:35:45 AM	07:36:45 AM	0h 1m 0s
	zaid ahmed	April 28, 2025	07:39:54 AM	07:40:54 AM	0h 1m 0s


AI Dashboard
Student Registration
Manage Students
Mark Attendance
Attendance Details
Manage Cameras
Face Recognition - Ip camera
soumay kumar, checked in.
soumay kumar
Total
neras: 1

Team Details

TEERTHANKER MAHAVEER UNIVERSITY

Student Name
SOUMAY KUMAR (TCA2201607)
ZAID AHMED (TCA2201731)
ASHISH KUMAR (TCA2201141)

THANKYOU