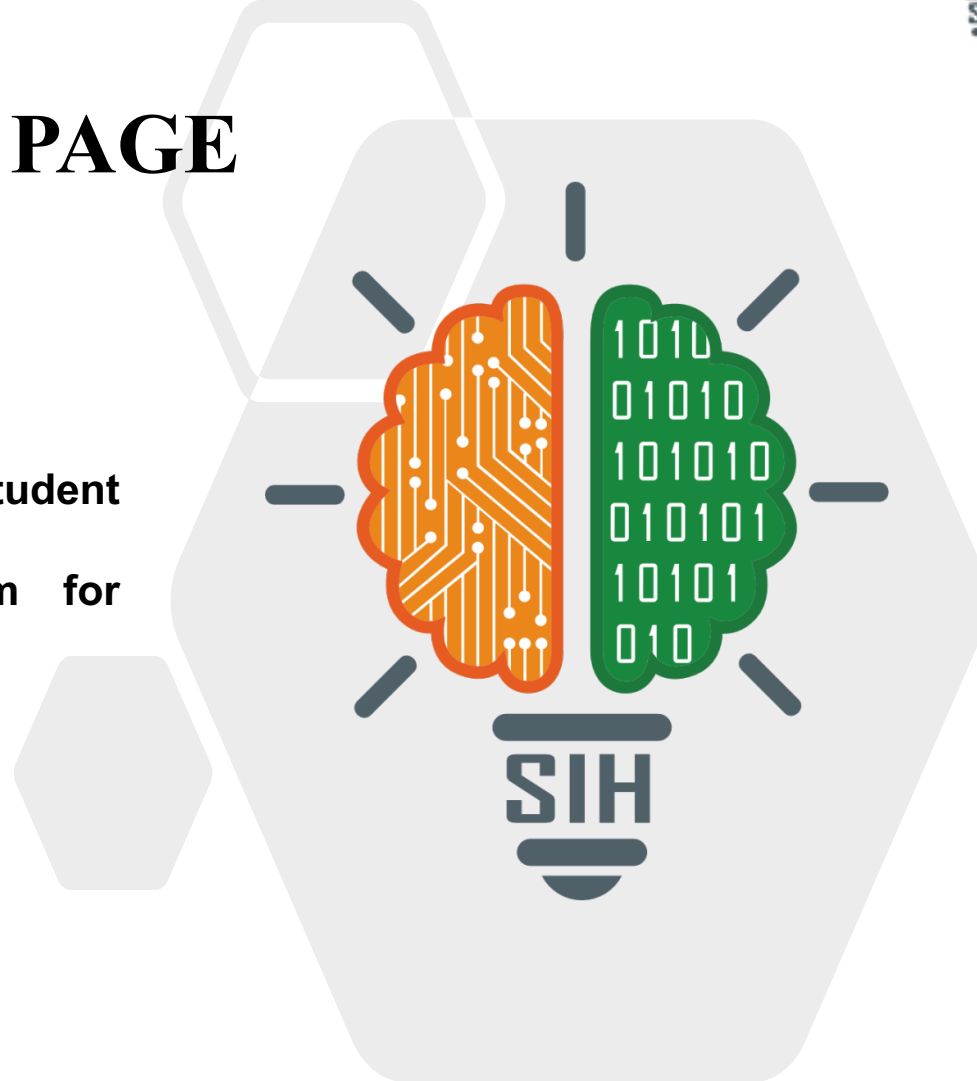


# SMART INDIA HACKATHON 2025



## TITLE PAGE

- Problem Statement ID – 25016
- Problem Statement Title- Automated Student Attendance Monitoring and Analytics System for Colleges.
- Theme- Smart Education
- PS Category- Software
- Team ID- 50116
- Team Name (Registered on portal) – SFIT BUG THUGS



# IDEA TITLE

## Problems Addressed

- **Reliable Attendance:** No roll-calls, no mistakes, no proxies.
- **Know Who's Engaged:** See if students are focused or drifting off.
- **Clear Learning Signals:** Catch dips in attention that affect understanding.
- **Instant Feedback:** Quick insights for teachers and students.

## Key Features

- **Smart Attendance:** Face and voice check-in, no hassle.
- **Focus Map:** See in real time who's tuned in or distracted.
- **Learning Timeline:** Track when attention rises or drops.
- **Clear Dashboards:** Easy views for attendance, focus, and understanding.
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## OUR SOLUTION

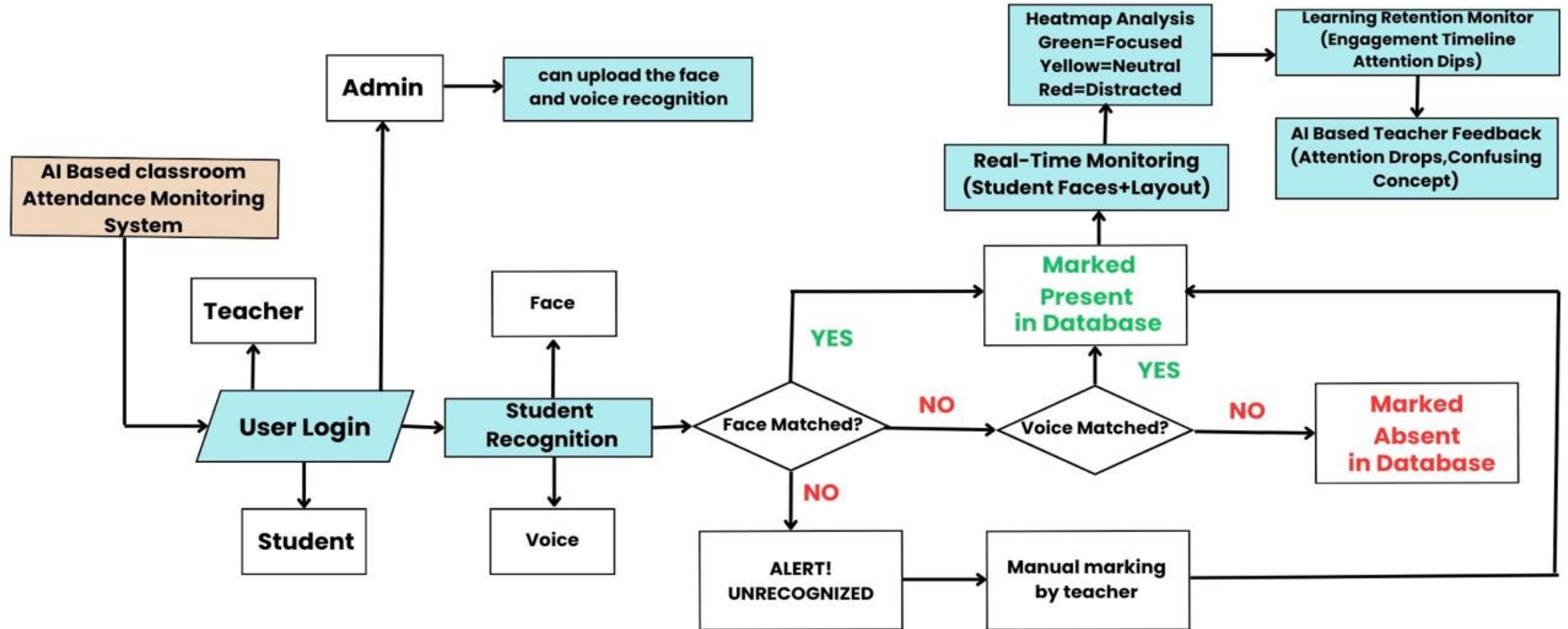
## Expected Outcomes

- **Accurate Attendance:** Face + voice ensures no proxies.
- **Actionable Insights:** Easy maps and feedback for teachers.
- **Spot Early Struggles:** Identify and address disengaged students promptly.
- **Flexible Use:** Works both in classrooms and online.

## Innovation and Uniqueness

- **Attention Heatmap:** See who's focused in real time.
- **Peer Impact:** Spot how distraction spreads in class.
- **Engagement Replay:** Revisit when attention rose or dipped.
- **Smart Feedback:** Get instant teaching tips from AI.

# TECHNICAL APPROACH



# FEASIBILITY AND VIABILITY

POTENTIAL USER – RELEVANT QUESTIONS	EXPECTED OUTCOMES
Is the system reliable and can it connect to our college's existing systems?	The system runs on proven AI tools tailored for these exact conditions and integrates smoothly with existing LMS/ERP platforms.
What kind of data will we get, and how can we use it?	Beyond just attendance, this system provides insights into student attention levels, helping teachers pinpoint areas where students might need a different approach.
Is our students' information safe?	A key feature is the temporary nature of the data it's used for a few days and then automatically deleted.
How does the system reduce costs and ensure a strong return on investment?	The system saves money by using the hardware classrooms already have and automating attendance, saving staff time boosting ROI.

## TECH STACK

### FRONTEND:



### BACKEND:



### STORAGE AND APIs



IMPACTS	BENEFITS
<b>Reduced Administrative Burden:</b> Less time on manual attendance.	<b>Accuracy &amp; Transparency:</b> Attendance is fair and tamper-proof.
<b>Increased Classroom Discipline:</b> Fewer proxies and distractions.	<b>Time Savings:</b> 10–15 minutes saved in every class.
<b>Enhanced Teaching Quality:</b> Insights to improve teaching.	<b>Data-Driven Insights:</b> Smart dashboards show engagement clearly.
<b>Improved Learning Outcomes:</b> Detects and supports low engagement.	<b>Fair Evaluation:</b> Students judged on both presence and participation.
<b>Accountability &amp; Engagement:</b> Promotes active student participation.	<b>Scalability &amp; Adaptability:</b> Works in small rooms, big halls, and even online.

# • RESEARCH AND REFERENCES

[1] Attendance Monitoring System Design Based on Face Segmentation and Recognition:

<http://dx.doi.org/10.2174/1872212116666220401154639>

[2] Face Recognition Based Automated Attendance Management System:

<https://doi.org/10.32628/IJSRST229147>

[3] Real-Time Student Face Recognition Attendance System Using AI: [doi: 10.17148/IARJSET.2025.125183](https://doi.org/10.17148/IARJSET.2025.125183)

[4] Source: Zero to Mastery Learn PyTorch for Deep Learning: <https://share.google/EEEJ8d8P6QIaqUNrN>