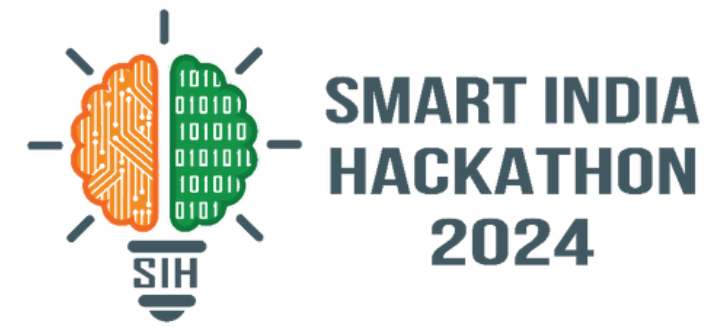


SMART INDIA HACKATHON 2024



CLASSROOM GUARD

- Problem Statement ID – SIH1586
- Problem Statement Title- Student Innovation
- Theme- Smart Education
- PS Category- Software
- Team ID- cba2745d
- Team Name- Team Guardians



Proposed solution?

Team Guardians



AI driven-CCTV surveillance in classrooms

What does it do?

- Our system tracks whether a teacher in school is present in class and flags him/her accordingly.
- Tracks actions of teachers in class and give reports.
- Flag students in the cases of bullying, theft, in presence and absence of a teacher.

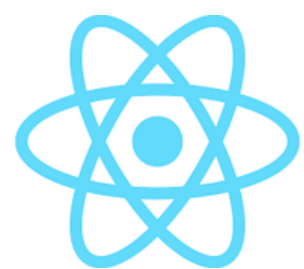
What does it solve?

- Reduced motivation of some teachers to teach.
- Alerts admin if teachers behave inappropriately in class.
- Prevent students from picking up bad habits, which usually starts in the classrooms, as kids spend majority of their in the classroom.

Why is it different?

- System to keep a check on teachers' presence and absence.
- Complete surveillance of classrooms at all times with immediate alert with the help of AI.
- System to detect indecent actions on the spot.

Technologies Used



React



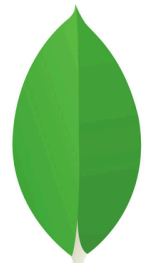
Py libs



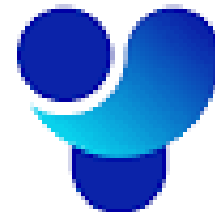
Open CV



Flask



MongoDB



Yolo v8

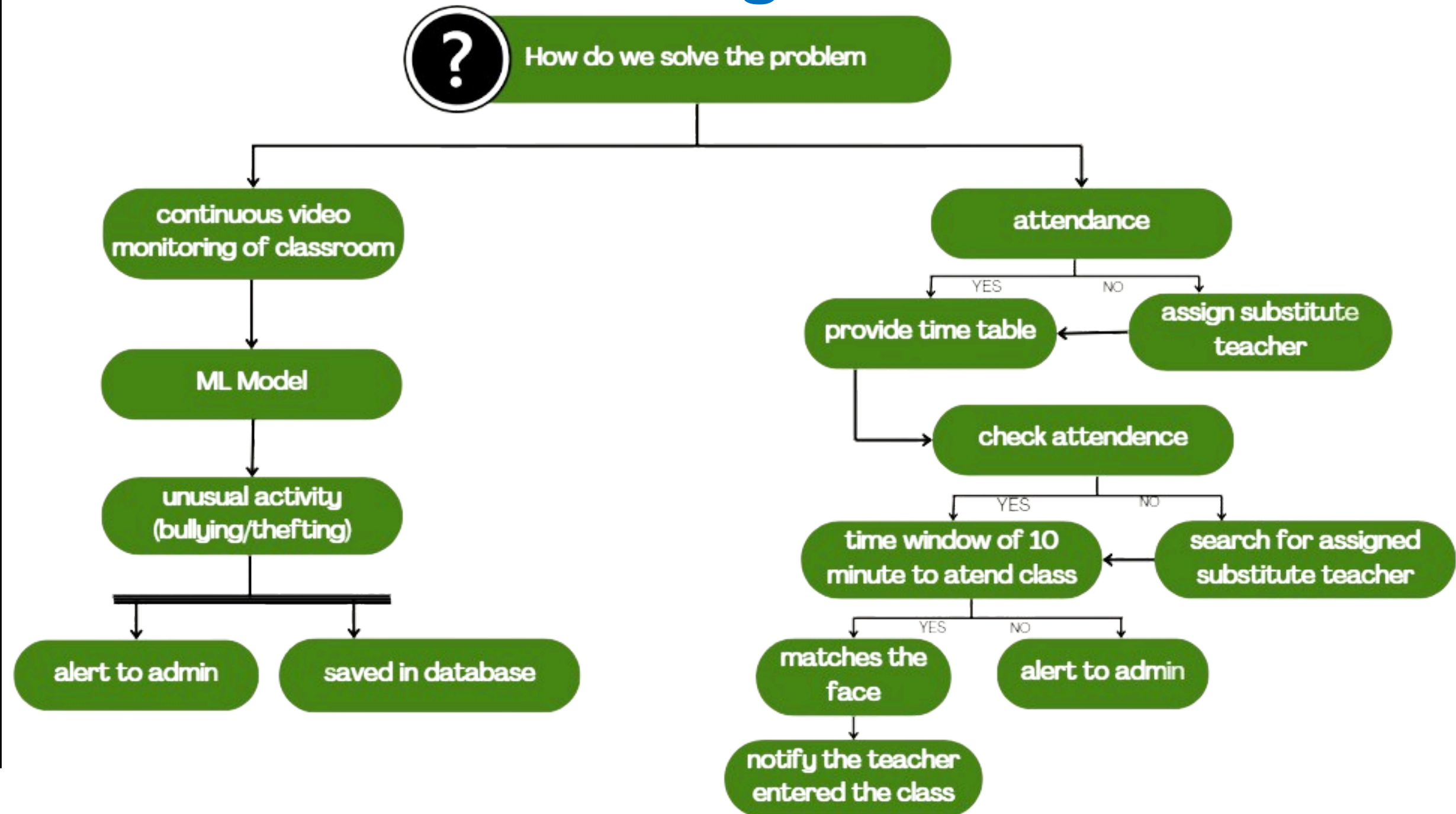


JS



Pytorch

Flow Diagram



Analysis of the feasibility of the idea

Technical Feasibility



Facial recognition, AI behavior analysis, RFID/NFC tagging, and IoT sensors can be integrated with existing school management tools.

Economic Feasibility

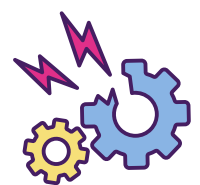


This System can be integrated in preinstalled Cameras.

Potential Challenges and Risks



Handling sensitive biometric and behavioral data raises privacy and security concerns.



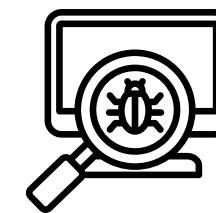
Integration issues, system malfunctions, or inaccuracies in AI models could affect system performance and reliability.

Strategies for Overcoming Challenges



Privacy and Data Security

- Use advanced encryption techniques to protect data in transit and at rest.
- Implement multi-factor authentication and role-based access controls.



Technical Issues

- Perform extensive testing in pilot programs before full-scale deployment.
- dedicated support team for technical issues and maintenance.

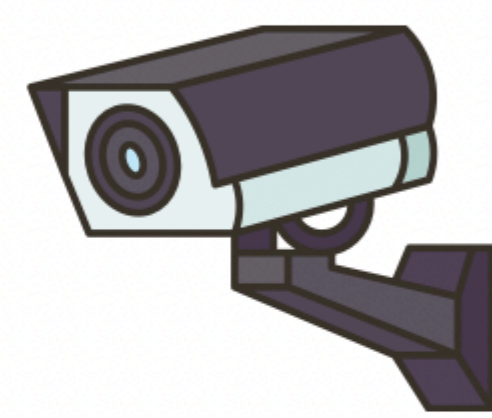
IMPACTS & BENEFITS



Improved attendance and behaviour monitoring for both teacher and students saves times and ensure accurate record-keeping using AI driven cameras.



Enhanced Security and Theft Prevention by using AI models and RFID/NFC tags significantly reduces the risk of theft and any harmful activity by monitoring any unusual behavior.



Real-Time Data and Alerts allows teachers and administrators to address issues promptly, improving response time and intervention in case of disruptive or harmful activities.

- COE- Student Bulling – National Center for education statistics
(<https://nces.ed.gov/programs/coe/indicator/a10/bullying-electronic-bullying>)
- Image recognition : The basics and use cases(2024 guide)
(<https://viso.ai/computer-vision/image-recognition/>)
- Image recognition – Defination, algorithms and uses
<https://www.v7labs.com/blog/image-recognition-guide>
- Prevalence and correlates of bullying percetration victimization among school-going adolescents in Chandigarh, North India -
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7909033/>