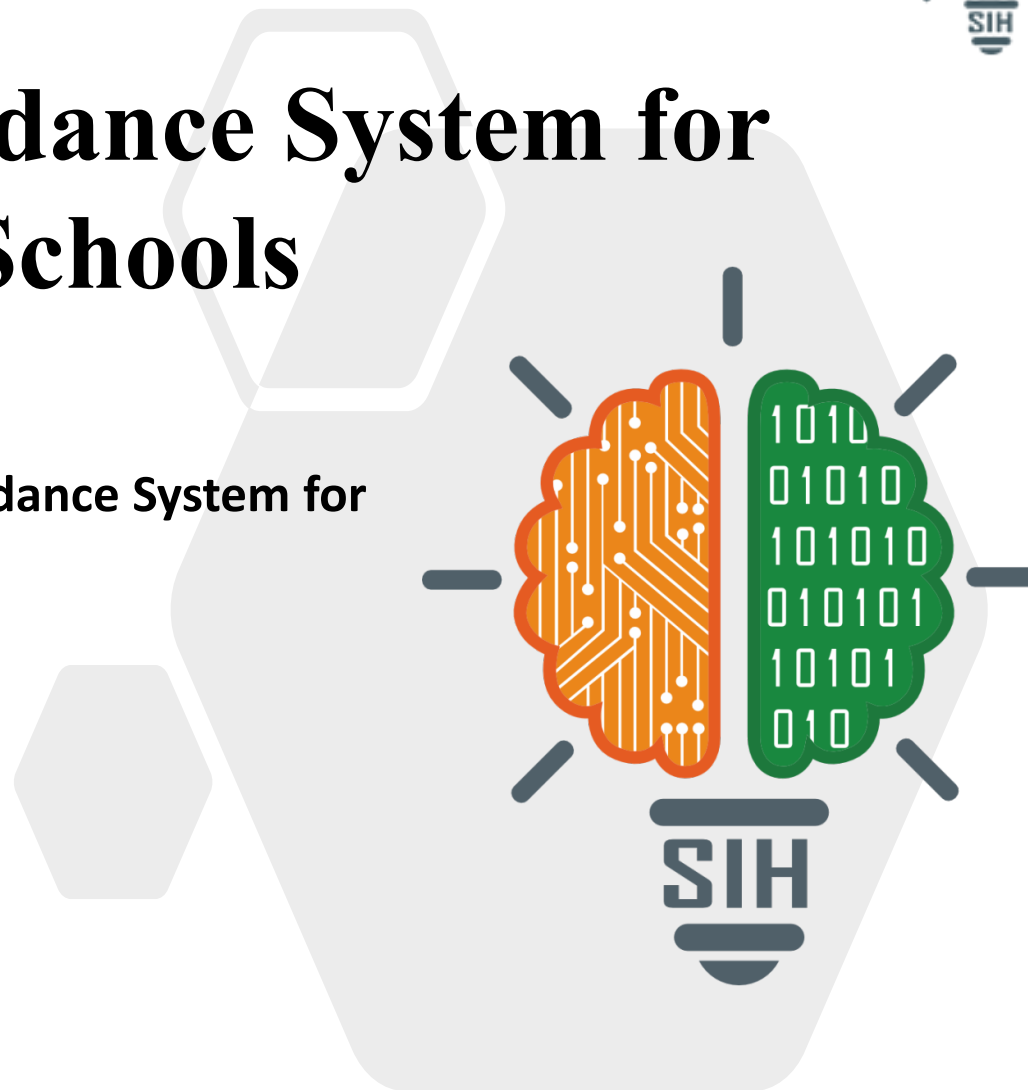


## Automated Attendance System for Rural Schools

- **Problem Statement ID – 25012**
- **Problem Statement Title-Automated Attendance System for Rural Schools**
- **Theme- Smart Education**
- **PS Category- Software**
- **Team ID-**
- **Team Name (Registered on portal)- HexaHackers**



# Automated Attendance System for Rural Schools

## ❖ Proposed Solution:

- Face recognition, ID, or QR codes for attendance.
- Web dashboard for real-time access.
- Local storage with cloud sync for analysis.

## ❖ Detailed Explanation

Student check-in → auto attendance capture  
Offline-first + cloud sync for analysis  
Dashboard + alerts for absenteeism  
Daily / Monthly / Yearly reports

## ❖ How it Addresses the Problem

Saves teacher time, reduces errors  
Real-time monitoring & quick intervention  
Digital records → accountability  
Better attendance → improved learning

## ❖ Innovation & Uniqueness

Works offline & online (for rural areas)  
Multi-modal options (Face/ID/QR)  
Low-cost, scalable, user-friendly  
Alerts + analytics, not just attendance

## ❖Technologies to be used:

### •Programming:

Python, JavaScript (Node.js/React), Java/Kotlin (Android app)

### •AI/Computer Vision:

OpenCV, TensorFlow/Mediapipe (Face Recognition)

### •Database & Storage:

SQLite (offline), Firebase/MySQL (cloud sync)

### •Web & Mobile:

React/Angular for dashboard, Flutter/Android Studio for mobile app

### •Hardware:

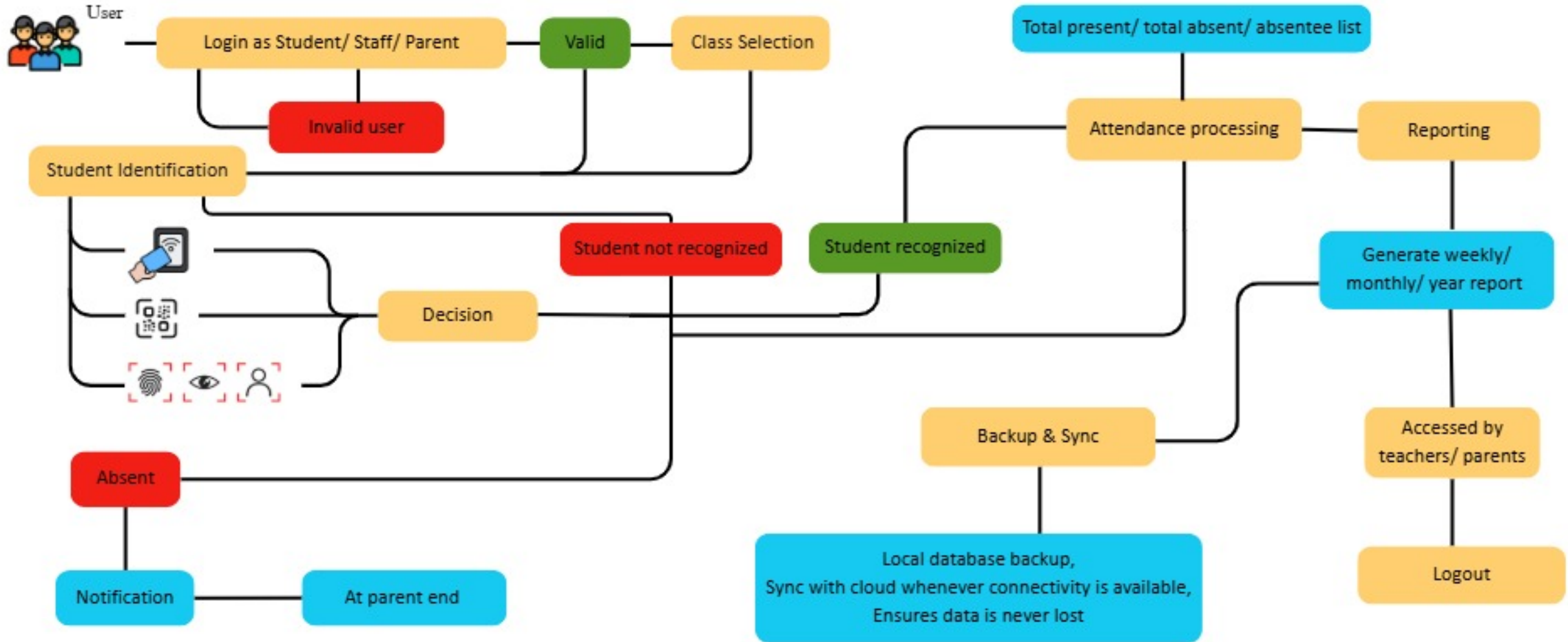
ID readers, QR scanners, Android tablets/phones

### •Communication:

SMS/WhatsApp API for alerts

**Student → Device → Database → Dashboard → Alerts**

# FLOW CHART



## ❖ Feasibility:

- Uses low-cost ID/QR tech, works offline, minimal training required

## ❖ Challenges:

- Poor/unstable internet connectivity, Initial device setup cost, data privacy concerns

## ❖ Strategies:

- Offline-first + cloud sync
- Affordable devices (Android tablets/phones)
- Secure encrypted storage for data

## ❖ Impact

- Real-time attendance monitoring in rural schools
- Quick intervention for absenteeism
- Improved accountability & transparency
- Gamification: badges/rewards for good attendance

## ❖ Benefits

- Saves teacher time & reduces errors
- Boosts student attendance → better learning outcomes
- Cost-effective, scalable solution
- Social impact: Encourages digital adoption in rural education
- Parent engagement via weekly reports/alerts

## ❖ RESEARCH & REFERENCES

- Reports on rural school attendance gaps
- Govt. studies on digital adoption in schools
- Research on ID/QR/Face recognition in education
- UNESCO – *Technology in Rural Education*
- Govt. of India – **DIKSHA & Shala Darpan** portals
- AISHE & NCERT reports on absenteeism