



AI Transport Automation

Open street map API for india



Dynamic Route Optimisation

Route gets optimised based on student list dynamically and on real time basis.



Real-Time Location & Alerts to Parents

Live tracking using built-in device GPS and instant alerts to parents when child boards and de-boards the bus



Easy Integration Across Schools

Works seamlessly with attendance, transport & gatepass module.



Student Safety

Multi-layered, foolproof checks ensure no student is left on the bus, with discrepancy reports comparing class and bus attendance.



Transport Admin Console

Single unified view with drill down options for tracking all the buses in the map and the student pick up and drop status



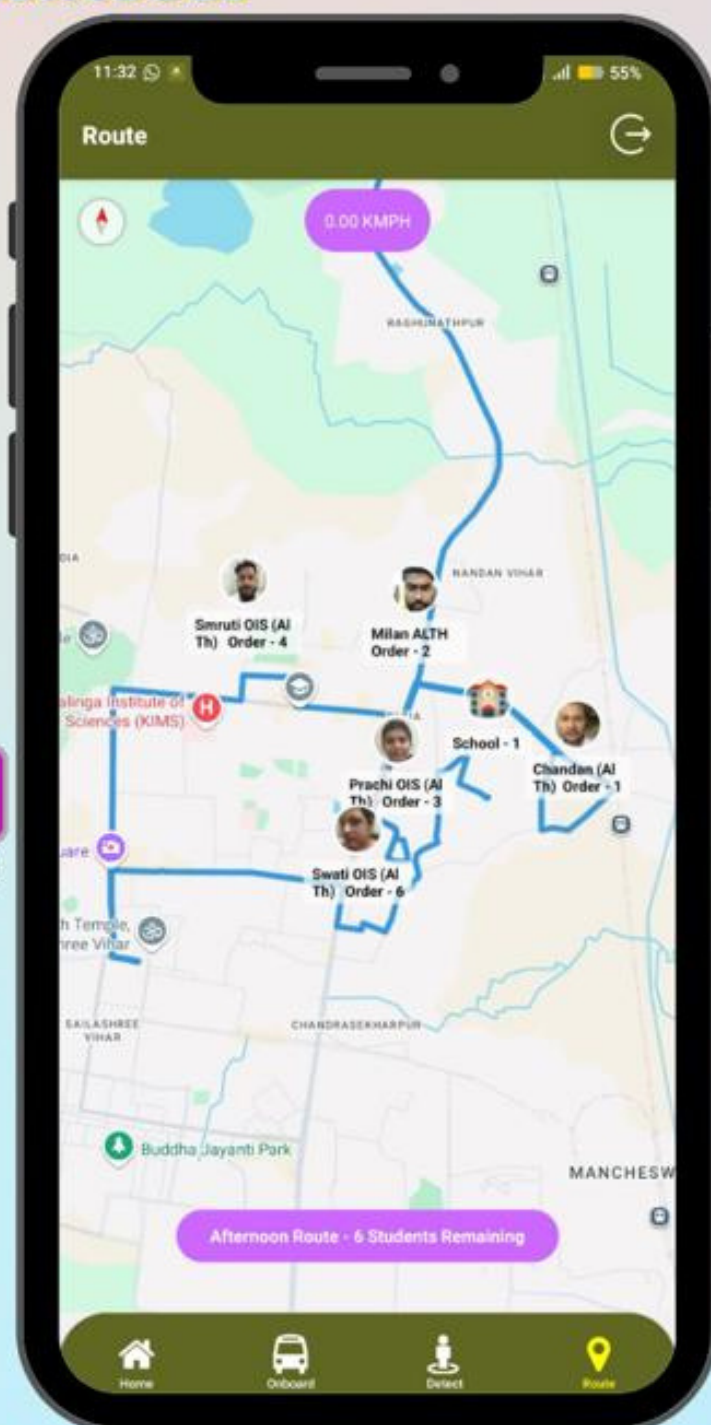
Zero Setup, Zero Maintenance

No wiring, installation, or AMC—ready from Day 1.



Future-Ready

Scalable, automated, and built for next-gen smart transport.



Functionalities



Route-wise student list with daily curation



One-tap parent calling



Real-time pickup/drop status updates



Compressed, easy-to-use student list



Auto-sync with gate pass



Smart verification: QR/BR, AI & manual



Automatic student count & tracking



Real-time parent alerts & safety-based trip closure



End-of-bus QR scan for safety confirmation



Dynamic route map & student location updates



Admin dashboard with monitoring & escalations



Morning & afternoon trip details



Configurable alerts & rules



Seamless parent mobile app experience



: info@schoolbellq.com
: info@koneventures.com



: +91- 9937465250



: +91- 9092005250



: www.koneventures.com
: www.schoolbellq.com



AI Transport Automation

- **Real-Time Bus Tracking:** Live location of every vehicle for complete transparency.
- **Instant Pick-up/Drop Alerts:** Automated notifications when students board or de-board.
- **AI Face Recognition:** Auto attendance with high accuracy and enhanced safety.
- **Smart Routing & Speed Alerts:** Optimized routes and instant overspeed warnings for safer, faster travel.



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Easy Integration Across Schools

Works seamlessly with attendance, transport & gatepass module.



Student Safety

Multiple layers, fool proof logic to ensure student is not left in the bus including discrepancy report* with class attendance & bus attendance.



Transport Admin Console

Single unified view with drill down options for tracking all the buses in the map and the student pick up and drop status



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Consolidated Feature List – Student Transport Module



Bus Tracking Option for Parents

- Complete student list with photos assigned to each route.
- One-touch call option to instantly contact any student/parent.
- Student location registration for accurate boarding and drop mapping.
- Morning/Afternoon Present–Absent marking to support route optimization and reduce unnecessary stoppages.

Onboard Attendance & Verification

Attendance can be captured through multiple modes:

- QR / Barcode scan from the student ID card.
- Manual identification by the bus attendant.
- AI-based face recognition for seamless validation.
- Lightning-fast image recognition ensuring no delays during boarding.

Safety & Trip Validation

- Pickup = Drop requirement — a student marked picked up must also be marked dropped; only then the trip closes.
- Mandatory QR scan at the bus exit by the attendant to verify safe drop-off.
- Prevents missing-student scenarios and ensures complete accountability.
- Multiple Safety layers

Dynamic Route Optimization

- Dynamic optimisation of routes based on actual student stops, attendance, and real-time data.
- Supports full-route and stop-based adjustments to improve efficiency and reduce travel time.

Transport Alerts & Communication

- Real-time transport alerts to parents.



First Screen –

- **View Students on the route**
- **Curate the list for today.**

Purpose of the First Screen

Provides a complete operational view of all students assigned to the route, and trim the list for active pickups.

Key Functionalities



Student List with Photos

Displays each student's profile picture for easy visual identification.



One-Touch Dial

Attendant can call any parent without opening the dial pad instantly.
No hassle of typing the phone number.



Student Location Update (Pick or Drop)

Enables real-time updating of each student's pickup or drop status when reaching their location.



Mark Attendance

Helps update the day's onboarding list instantly, accommodating last-minute absences.

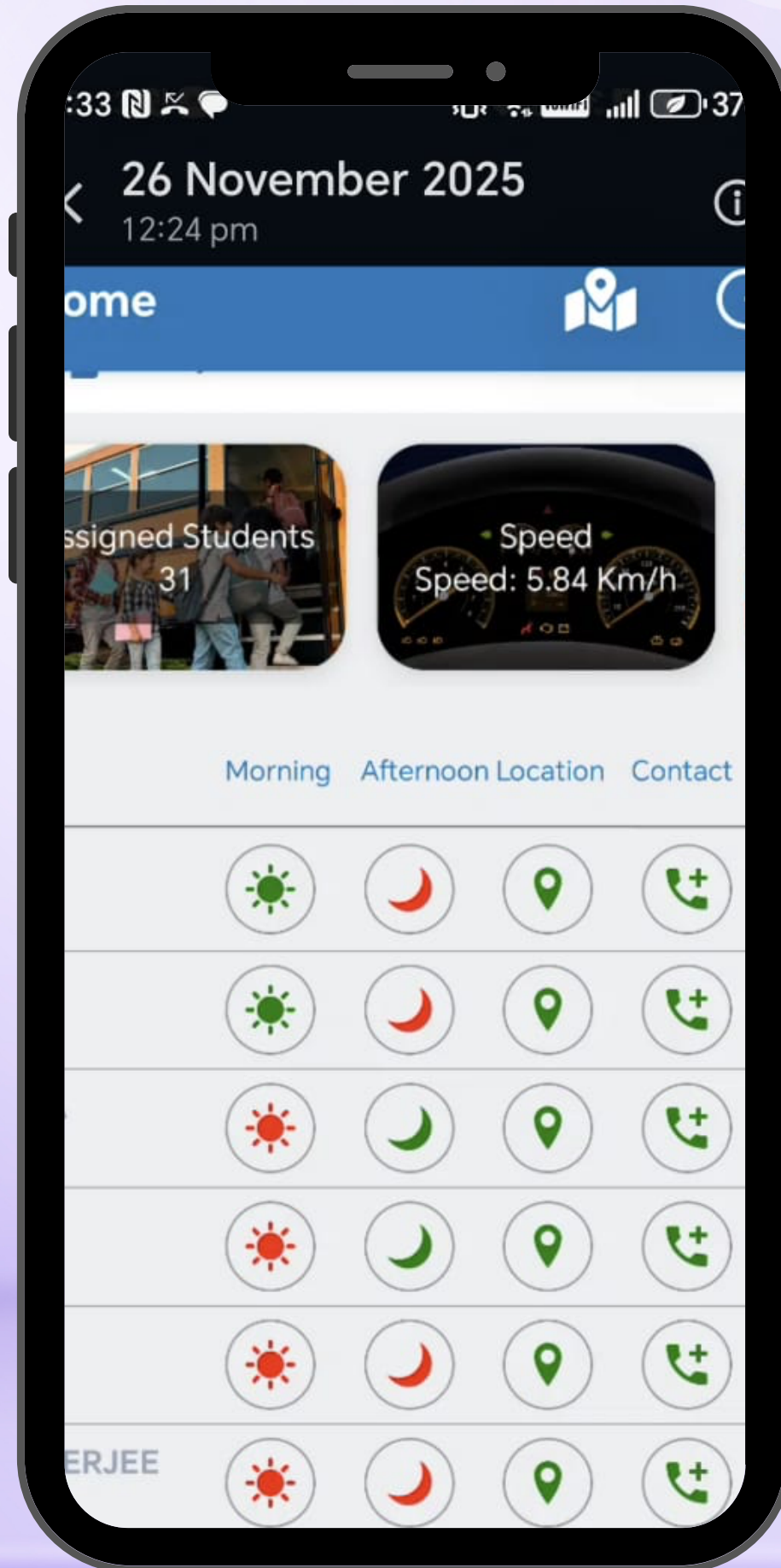
Auto-Sync With Gate Pass



Student who leave early or have a gate pass are automatically removed from the drop list.

Outcome

A refined, accurate daily onboarding list is generated from this screen, preparing the user to move seamlessly to Screen 2: Onboarding Functionality.





Onboarding Screen – Smart & Efficient Student Verification

Purpose of the Onboarding Screen

Provides a refined, manageable list of only those students marked present for the day, enabling quick and accurate onboarding.

Key Features



Condensed Student List for user convenience

Shows only students who are attending.

Example: From 40 assigned students, if 10 are absent, the list automatically reduces to 30 for easier handling.

Three Ways to Mark Student Pickup



QR or Barcode Scan – Ultra-fast scanning using student ID cards.



AI Face Recognition – Instantly identifies the student through the camera without needing an ID card.



Manual Selection – For situations where neither QR nor AI is available.



Real-Time Parent Alerts

Every pickup update triggers an instant notification to parents on their app.



Automatic Count & Tracking

The onboarding list calculates the exact number of students picked up.

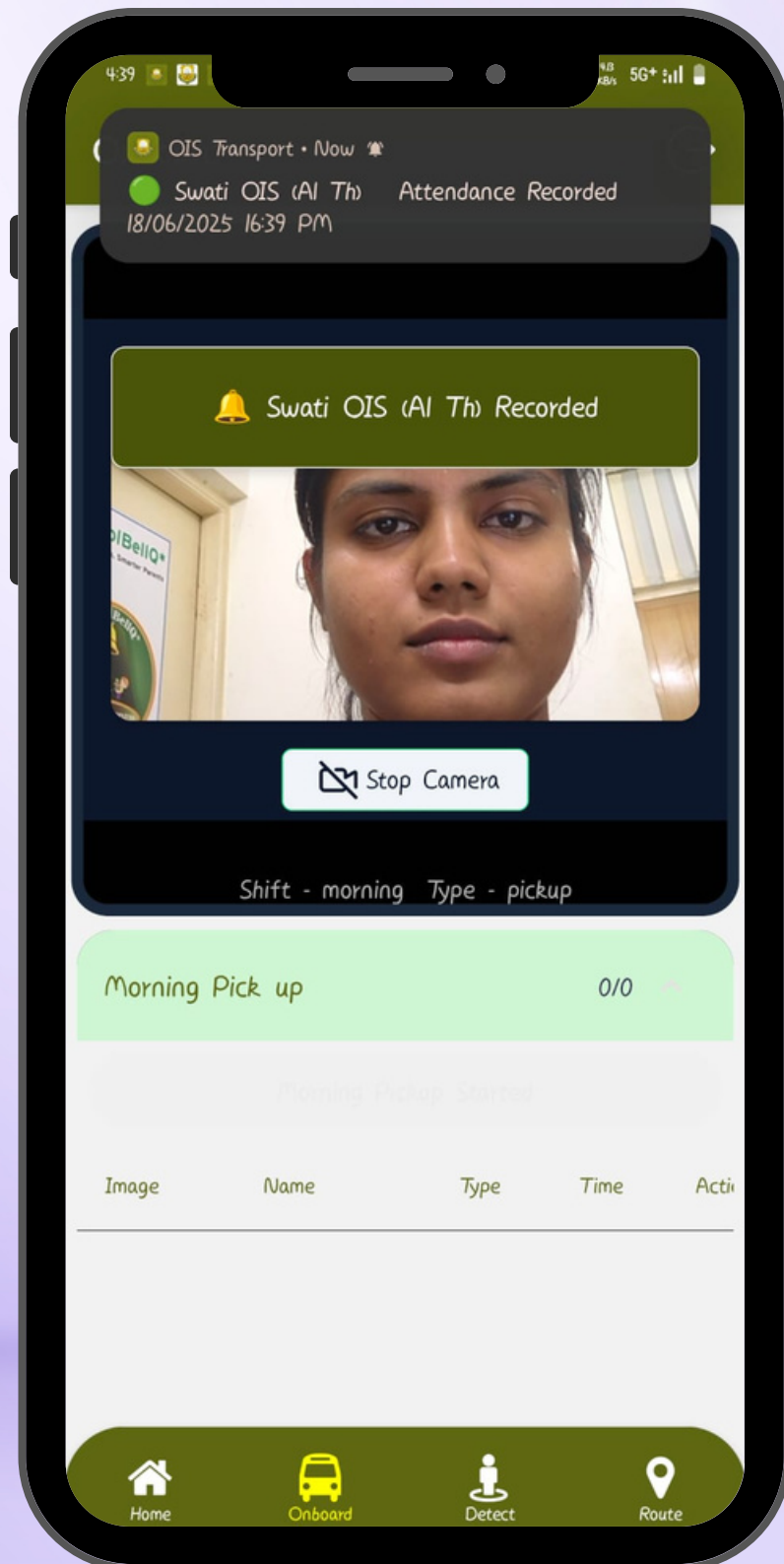


Dynamic student list logic

Morning picked up students = Morning dropped students.

Trip can be closed only when total picked-up students equal total dropped students, ensuring complete accountability.

Students are arranged in the sequence of pickup.





Safety Measures & Trip Closure

Purpose of the Onboarding Screen

Ensure no child is ever left unattended inside the bus by enforcing strict drop-tracking and end-of-trip validation.

Key Functionalities



Individual Student Drop Verification

- Each student must be individually marked dropped only through:



QR or BR Code Scan, or



AI Face Recognition



Manual Recognition

- If a student is not marked as dropped, the system does not allow trip closure.



Mandatory Trip Closure Conditions

- Trip closes only when all picked-up students are marked dropped.
- If a trip is pending past its scheduled time, continuous alerts are sent to the admin for immediate escalation.



Admin Monitoring & Escalation

- Admin receives trip-closure alerts, helping them intervene quickly if any student remains unaccounted for.

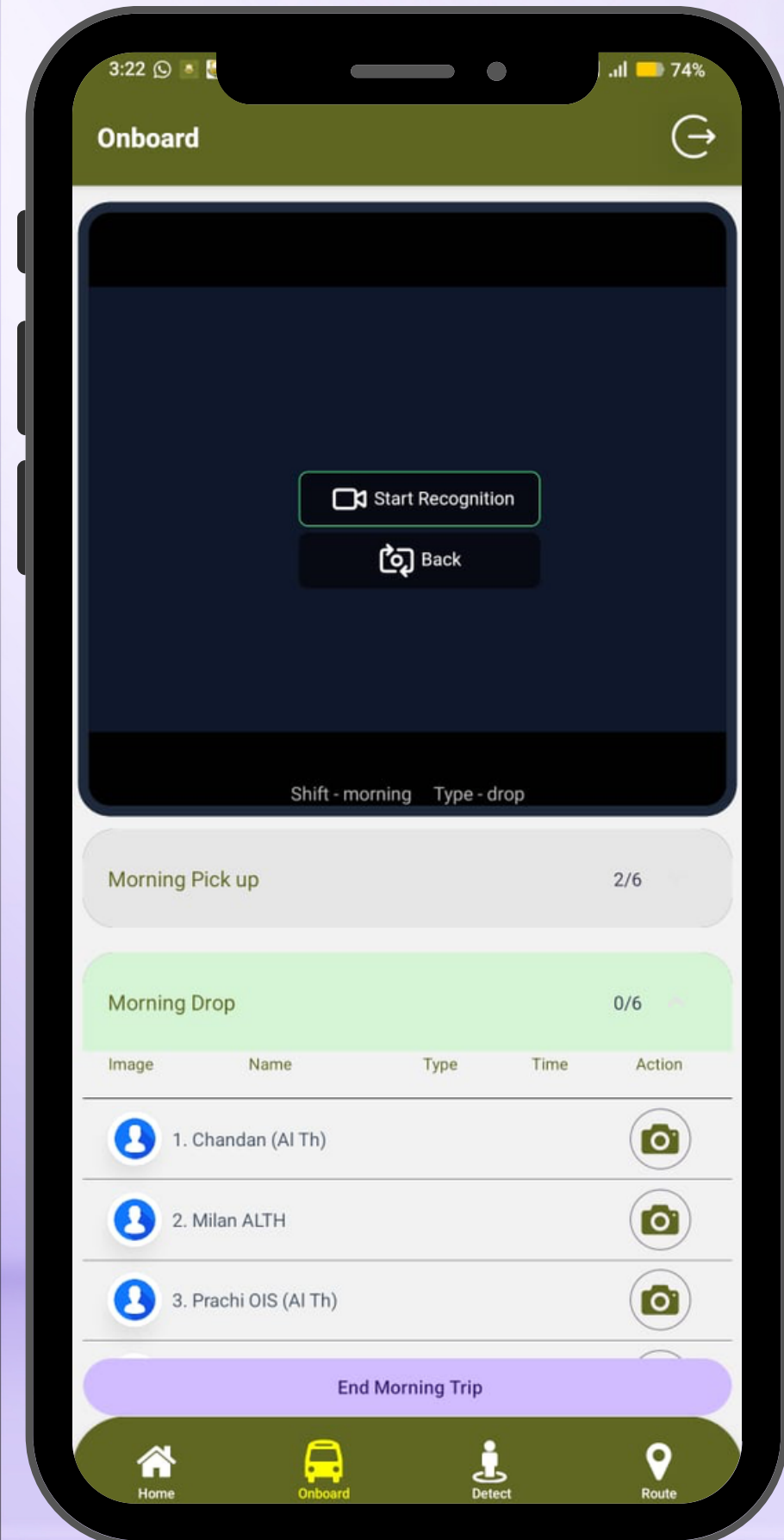


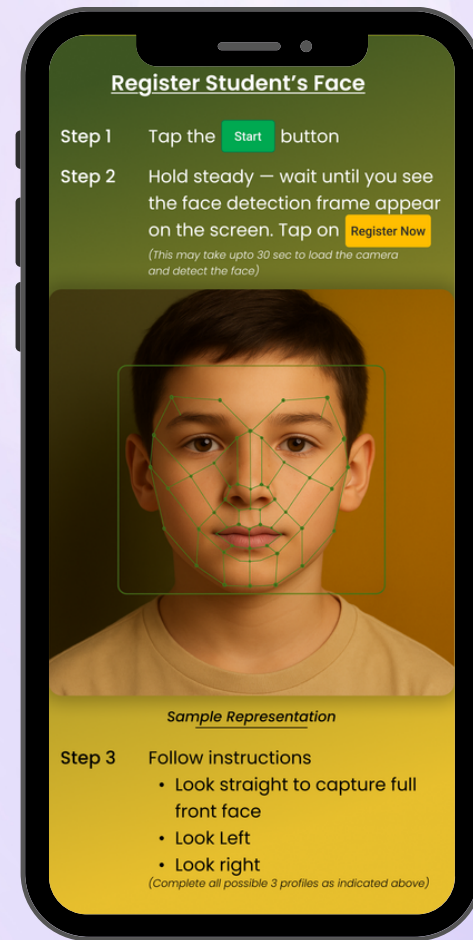
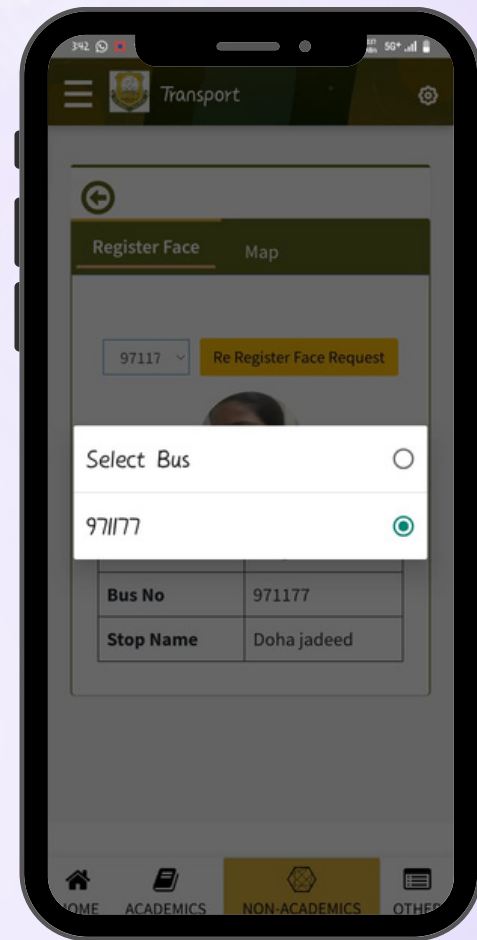
End-of-Bus QR Scan

- To close the trip, the attendant must physically walk to the back of the bus and scan a special QR code.

This ensures:

- Every seat is visually checked
- No student is left behind
- Applies to both morning and evening trips

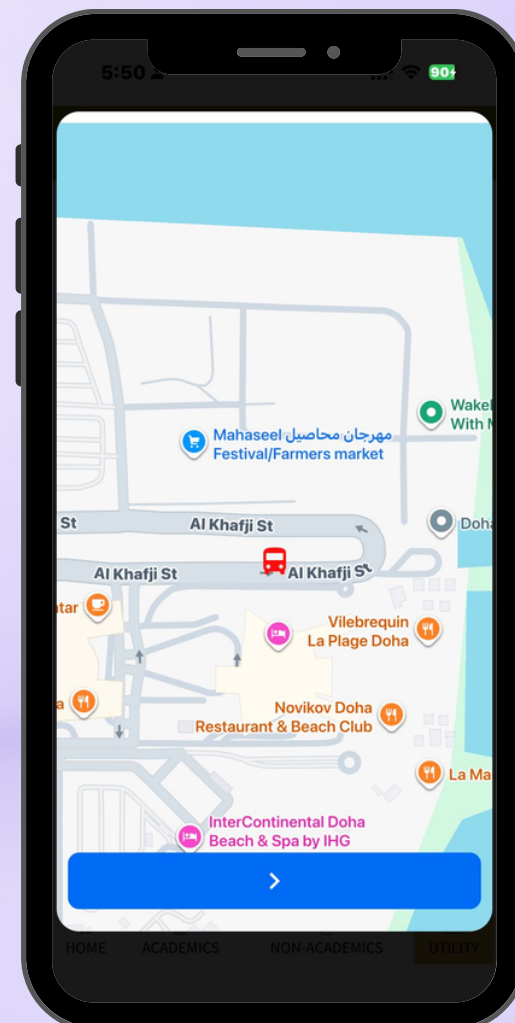
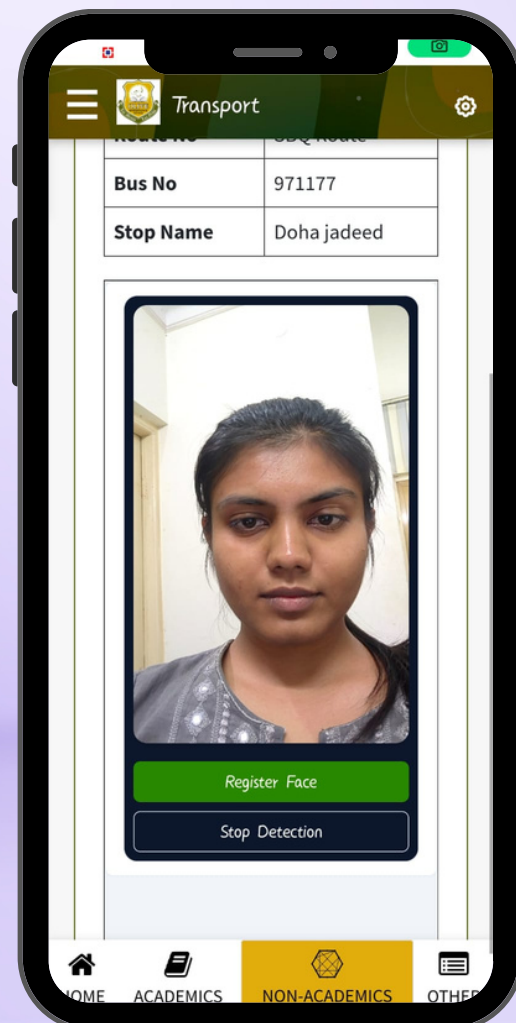




Parent Experience - School APP

Key Features for Parents

- Receive instant pickup and drop alerts for their child.
- Register the student's face directly in the app for seamless AI recognition during boarding.
- Track the live location of the bus, ensuring transparency and timely planning.

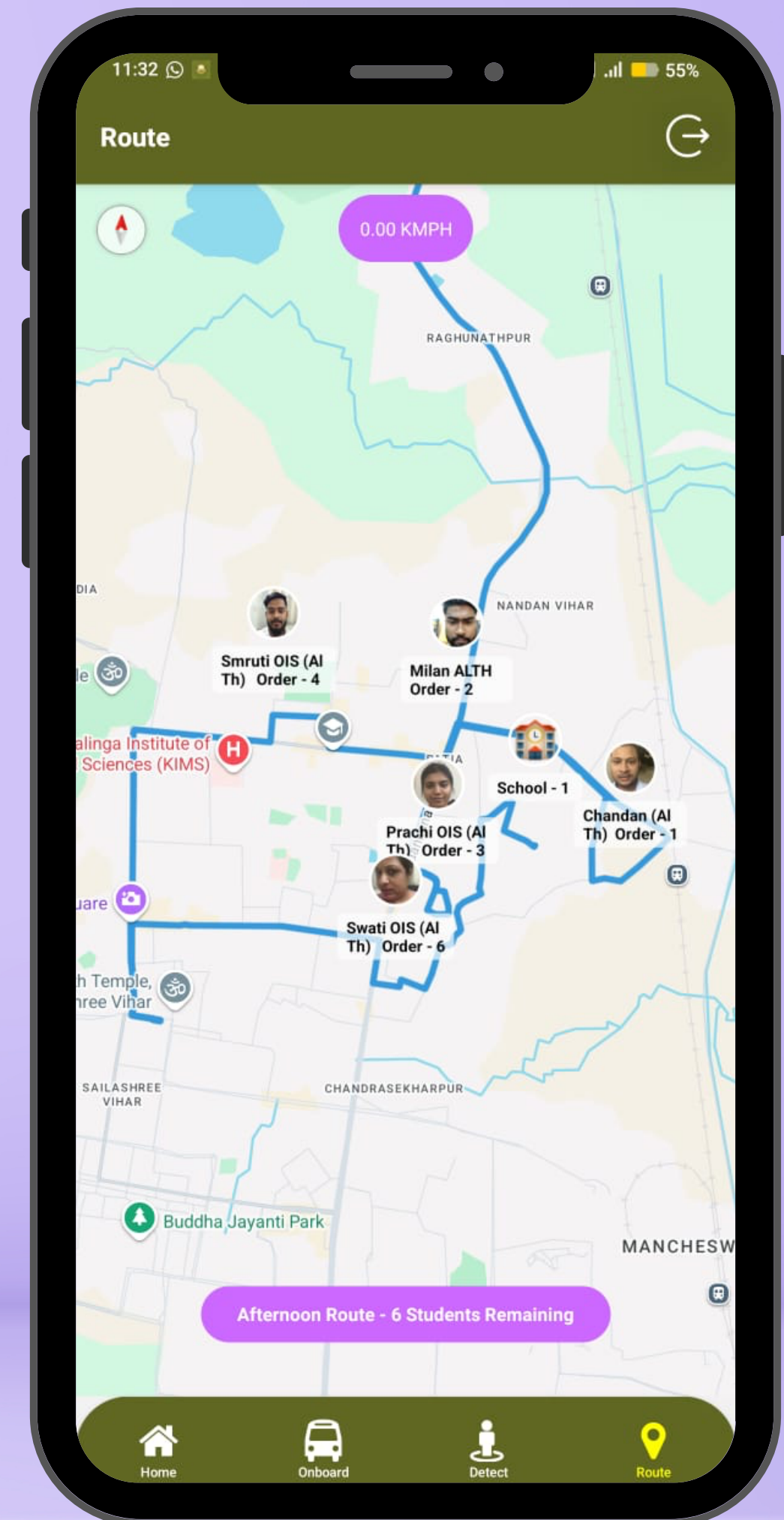


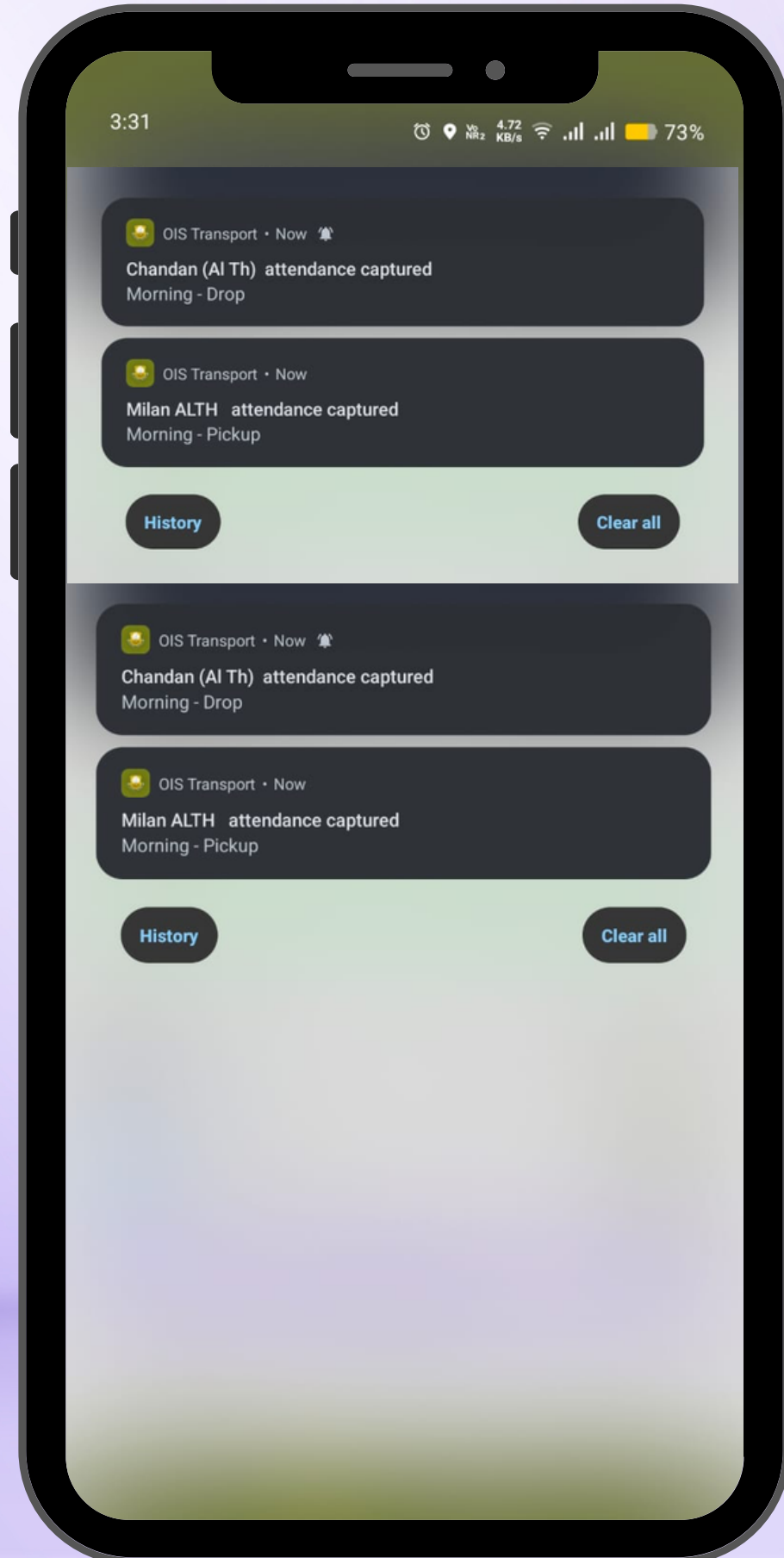
Benefits

- Increased sense of safety and real-time awareness.
- Smooth onboarding with face recognition registration done at home.
- Clear visibility of bus movement every day.

Optimized Route Map

- Our system ensures safe and efficient trips with smart GPS routing and real-time updates.
- It automatically adapts to traffic or changes, keeping parents and admins informed.
- This makes student transport smoother, faster, and more reliable every day.
- Smart GPS routing with dynamic re-routing
- Pickup & drop sequence optimization based on student data
- Live bus tracking with ETA for parents & admins





Alerts & User-Defined Rules

Automated Alerts & Escalation

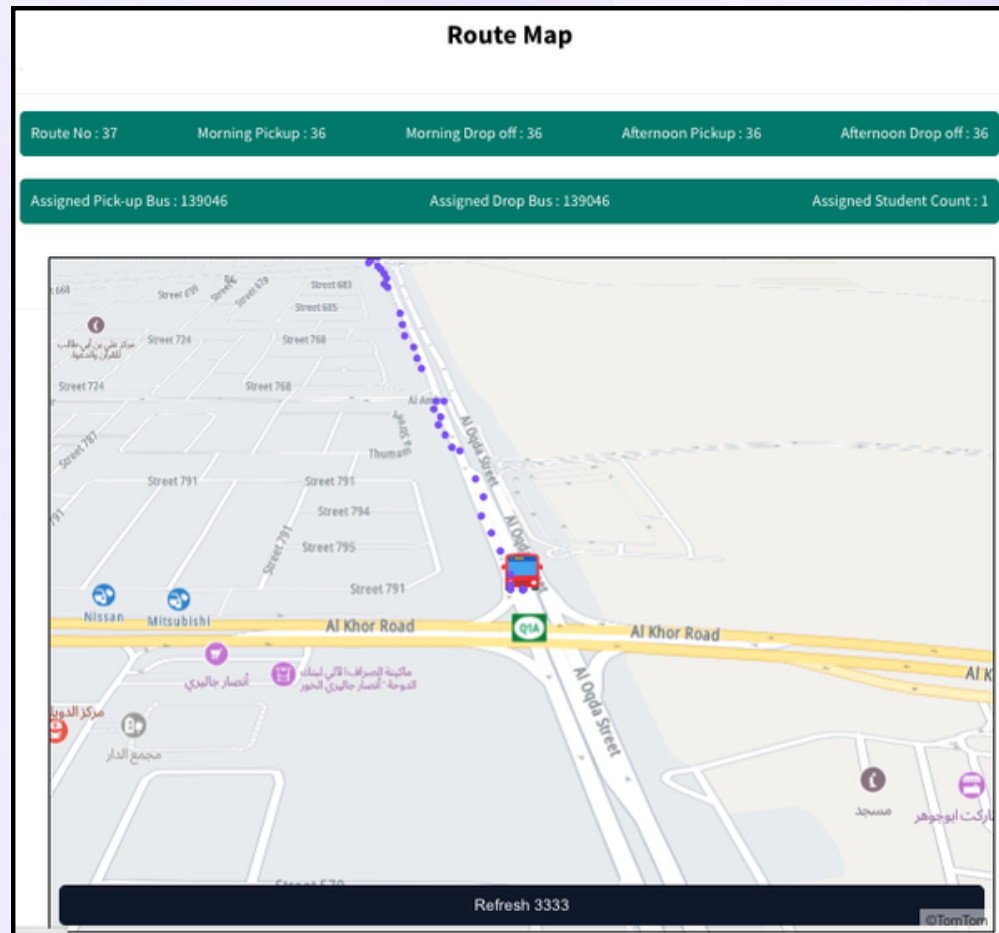
- Admin receives email alerts for:
 - Trips not closed after expected time
 - Trips still running beyond schedule
 - Trips deviating or exceeding defined limits

Fully Configurable Settings

- Users can define:
 - Who receives alerts
 - Alert intervals & escalation timing

Impact

- Ensures timely response to delayed trips.
- Strengthens student safety by preventing oversight.
- Provides a flexible, controlled alerting mechanism accessible from the front end.



Transport Admin Dashboard



Objective:

- Enables smooth monitoring, quick decision-making, and transparent transport management.

Comprehensive Operational Overview

- Displays all buses for the campus with clear color-coded status indicators.
- Shows current mode of operation:
 - Morning Pickup and Morning Drop
 - Evening Pickup and Evening Drop
- Running buses dynamically shift to red for easy identification.

Deep-Dive Functionality

- Clicking any bus reveals:
 - Number of students picked
 - Number of students dropped
 - Current live student status
- Admin can select any date to view complete pickup & drop records.

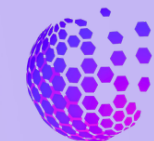


Student Trip Details (Morning & Afternoon Trips)

- **Complete Trip Visibility:** Provides detailed morning and afternoon trip information for every student, including pickup & drop locations with exact scheduled times.
- **Route & Tracker Mapping:** Displays assigned route numbers and tracker IDs for transparent and structured transport planning.
- **Icon-Based Clarity:** Easy-to-read icons for pickup, drop, and timings make the data highly user-friendly and quick to interpret.
- **Individualized Student Breakdown:** Each student's info—admission number, class, and trip timeline—is clearly sorted for effortless monitoring.
- **Accurate Time Windows:** Shows actual travel time ranges, helping transport managers identify delays or optimizations.

Show 10 entries Search:				
Sr.	Student Info	Date	Morning Trip	Afternoon Trip
1	Joshua Juttas Adm No: 00006 Class: 10 - E Route: 47 (119730 / Trac-119730 - Catherine Wanbul)	09/12/2025	Pickup: Duhail (06:00 AM) Drop: School (06:39 AM) ⌚ 05:31 AM → 04:00 AM	Pickup: School (01:34 PM) Drop: Duhail (02:37 PM) ⌚ 01:33 PM → 02:57 PM
2	Criss Joby Adm No: 00399 Class: 9 - F Route: 50 (102793 / 102793 - Laxmi Gurung Tamang)	09/12/2025	Pickup: Bin Omran (05:50 AM) Drop: School (06:59 AM) ⌚ 05:35 AM → 07:01 AM	Pickup: School (01:05 PM) Drop: Bin Omran (01:50 PM) ⌚ 12:53 PM → 02:25 PM
3	Tahmid Islam Adm No: 00418 Class: 9 - G Route: 22 (264381 / Trac-264381 - Jamuna B K)	09/12/2025	Pickup: Umsalal Mohamed (05:59 AM) Drop: School (06:44 AM) ⌚ 05:39 AM → 06:47 AM	Pickup: School (01:36 PM) Drop: Umsalal Mohamed (01:50 PM) ⌚ 01:36 PM → 02:23 PM
4	Anugraha Susan Arun Adm No: 00452 Class: 10 - E Route: 40 (321671 / Trac-296989 - Shanta Thapa)	09/12/2025	Pickup: MKS (05:51 AM) Drop: School (06:53 AM) ⌚ 05:14 AM → 07:02 AM	Pickup: School (01:06 PM) Drop: MKS (01:58 PM) ⌚ 01:00 PM → 02:13 PM
5	Riennen Lian Sequeira Adm No: 00567 Class: 9 - E Route: 50 (102793 / 102793 - Laxmi Gurung Tamang)	09/12/2025	Pickup: Bin Omran (05:55 AM) Drop: School (06:59 AM) ⌚ 05:35 AM → 07:01 AM	Pickup: School (01:14 PM) Drop: Bin Omran (01:51 PM) ⌚ 12:53 PM → 02:25 PM
6	Uthaya Rajiv Adm No: 00604 Class: 9 - F Route: 40 (321671 / Trac-296989 - Shanta Thapa)	09/12/2025	Pickup: MKS (05:45 AM) Drop: School (06:56 AM) ⌚ 05:14 AM → 07:02 AM	Pickup: School (01:11 PM) Drop: MKS (01:53 PM) ⌚ 01:00 PM → 02:13 PM
7	Athif K M Adm No: 00681 Class: 9 - G Route: 41 (99592 / Trac-99592 - Bishnu Maya)	09/12/2025	Pickup: MKS (06:00 AM) Drop: School (06:45 AM) ⌚ 05:40 AM → 06:50 AM	Pickup: School (01:13 PM) Drop: MKS (01:58 PM) ⌚ 12:56 PM → 02:22 PM





Student Location Update Panel

4	Sai Aaradhya	8-D	11	Thumama		25.2314363	51.5459186	<button>Update</button>
5	Dinesh Kakarla	10-E	29	Al Khor		25.6709607	51.5082825	<button>Update</button>
6	Dattatreya Kakarla	8-G	29	Al Khor		25.6709509	51.5083014	<button>Update</button>

- **Student Location Assignment:** Allows administrators to add or update precise latitude–longitude coordinates for each student to improve route accuracy.
- **Photo-Based Identification:** Profile images help quickly confirm student identity, reducing confusion during data updates.
- **Editable Location Fields:** Real-time editable location inputs ensure that home location changes are updated without any delay.
- **Seamless Geo-Mapping:** Location coordinates feed directly into route generation, making mapping highly efficient and automated.
- **Simple Update Workflow:** One-click "Update" buttons next to each record streamline the process for the transport team.