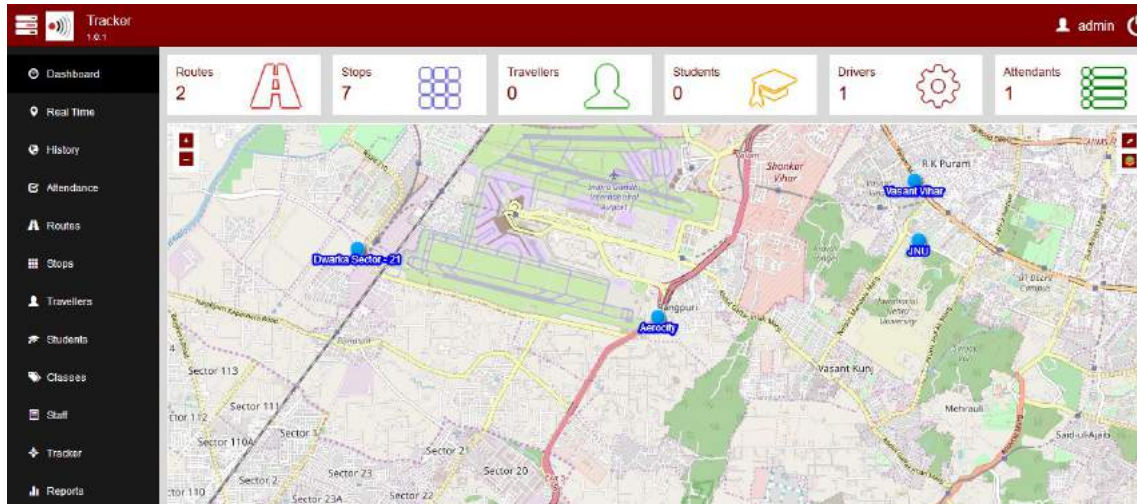


# IoT Based School Bus Tracking and Reporting System

The system tracks school buses when they pick up or drop off students.

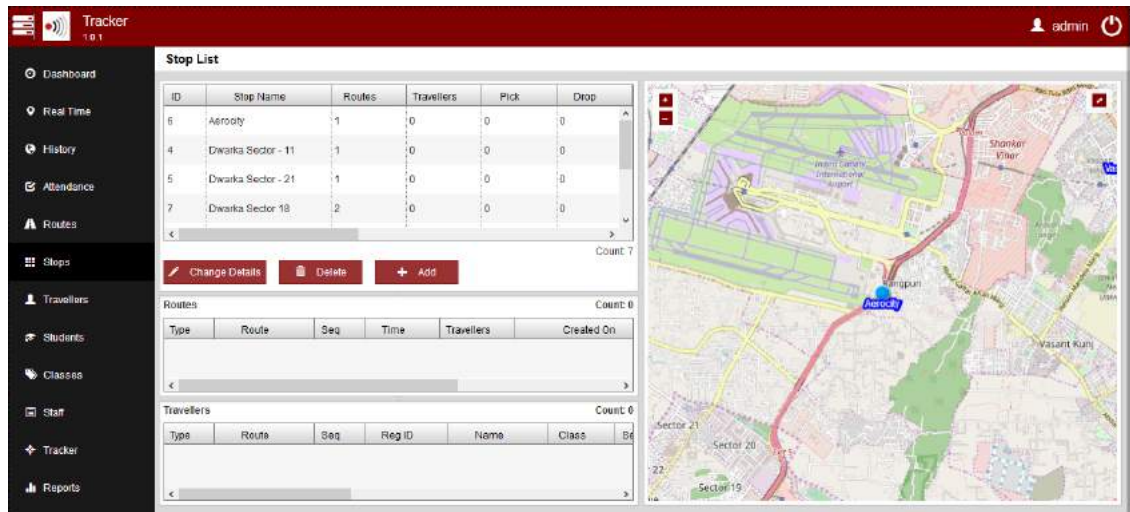
The system transmits real time location & other information of busses on their route.

The system issues Alerts if any of the parameters set by administrator are violated like speeding, deviating from a predefined route etc.



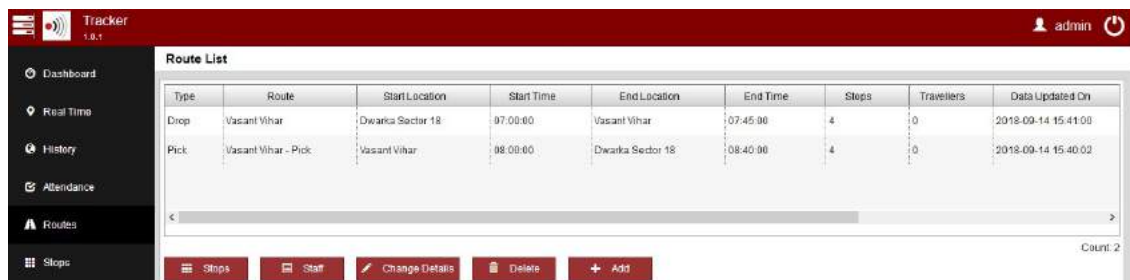
## Administrator can add/update the following details

1. Bus Route or Number
2. Student
3. Driver
4. Attendant
5. Bus Stops
6. Create associations between
  - a. Driver, Attendant -> Bus Route  
(System takes attendance of Driver and Attendant and issues alert if anyone is absent)
  - b. Student -> Bus Route  
(System takes attendance of students for each route and issues alert if anyone is absent)
  - c. Bus Stops -> Bus Route
7. Map Integration
8. Storing route and trip completion data for Analytics and better planning.



The system will track and record the following information

- Track & Store time of pick and drop
- Track & Store exact location of pick and drop
- Real-time tracking of bus on Maps and provides this information to different stakeholders



System stores the Data generated by all the busses on their routes, this facilitates in generating detailed reports, including

- Route Diversion Alert: Issue alert to the administrator if bus deviates from its scheduled route
- Trip Analysis: Historic data will be used to plan better future bus routes based on traffic congestion and/or any other issues faced in the previous trips. This may include altering routes of tweaking timings.
- Risk Analysis: Send alerts if the driver exceeds speed limit or indulges in rash driving.