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Child Tracking System Using iOS Application

M. Palanisamy[1], Sudharson K V[2], Vishal Rao M[3], Pushkin Radix J[4] , Sathish Kumar R[5]

Assistant Professor[1] , UG students[2345], Department of Artificial Intelligence And Data Science, Dhanalakshmi Srinivasan Engineering College, Perambalur,TamilNadu,India.ps87523@gmailas.com,sudysonvjn31@gmail.com,vishalrao5432@gmail.com,sathish101003@gmail.com,pushkinradix @gmail.com

ABSTRACT:

Child safety and real-time tracking during their school commute has emerged as a concern for parents. This project suggests a Child Tracking System employing two exclusive iOS applications: one for parents and the other for school drivers. The system facilitates real-time location tracking, route monitoring, and communication between parents and drivers to confirm the child's safety .Driver App is employed by the drivers of school buses for forwarding live location information to a server centrally using GPS. The app has provision for designating pick-up/drop-off status of students, for being alerted with regards to changes in route, and to be in communication with parents when emergencies arise .The Parent App provides the guardian the ability to track his child's live location, track bus routes, obtain arrival/departure alerts, and have direct communication with the driver. Parental reassurance is further promoted and assists in time management efficiently by giving estimated times of arrival. The system employs Firebase/CloudKit for real-time synchronization of data, MapKit for GPS tracking and maintains data security and privacy using authentication and encryption mechanisms. This child tracking system provides a pragmatic, scalable solution to enhance child safety and parental peace of mind during school travel

Keywords: Geo Location, Firebase/CloudKit, MapKit , CoreLoaction, Dijastrea Algorithm, Real-time Map annotation ,Simulation Algorithm.

Introduction:

In the midst of fast-growing urbanization and complexity in everyday transport, child safety while commuting to school is now a priority for parents and schools alike. The conventional check-ins and oral reports are not adequate anymore. Such practices do not offer correct, real-time, and consistent data, keeping parents worried about the safety of their child while in transit. The advancement of mobile technology, specifically the development of iOS applications integrated with geolocation services, offers a transformative solution to this problem. This research emphasizes the design and deployment of a real-time tracking system for children developed exclusively for the iOS environment that targets two major groups: parents and school bus drivers. The system uses GPS-based location services to provide real-time, round-the-clock tracking of school buses so that everyone can see live routes, estimated time of arrival (ETA), and be informed of timely alerts during crisis or delay situations. The Parent Application is intended to provide guardians with more control and visibility over their child's daily journey. Some of the key features include live location tracking, ETA updates, pick-up and drop-off alerts, and route change or unexpected delay alerts. Not only does this increase transparency, but it also gives parents peace of mind by keeping them constantly updated. Conversely, the Driver Application assists school transport staff by making everyday operational tasks easier. It features like digital marking of attendance, navigation along pre-defined and optimized routes, secure communication with parents in the event of an emergency, and real-time data synchronization with the central system. The data created by the driver app serves as the basis for tracking and notifications on the parent side, thereby building a secure , connected ,and intelligent school transportation management ecosystem to ensure the safety of children returning from school.

Existing System :

In the present educational transportation scenario, various rudimentary systems and manual procedures are utilized to guarantee the safety of children while they travel. These systems generally include human monitoring, manual attendance registers, and conventional mobile communication (calls or SMS) between parents and drivers. These methods have significant shortcomings in real-time information, accountability, and scalability.A few schools are now starting to make use of simple GPS tracking devices that are mounted on school buses. These typically map the bus location on a web dashboard or send SMS-based notifications to parents. They do not typically include integration with a mobile application, and the data that they present is typically not in real-time. These typically rely on third-party hardware and have added maintenance fees.

In addition, currently available mobile-based solutions in the market, e.g., Here Comes the Bus, Zonar MyView, or TrackSchoolBus, provide GPS-based tracking and ETA estimation. Although these solutions are usable, they often have the following pitfalls:

- Lack of platform-specific optimization for iOS or Android.
- Poor user interface (UI) and user experience (UX) with particular concern for non-technical users such as parents or drivers.

Additionally, in most areas, schools continue to use manual verification of child pickup and drop-off, where the attendant or driver maintains a physical record or uses WhatsApp messages to inform parents. These are susceptible to human error, lack of transparency, and delayed communication, especially in emergency situations or route deviations .Overall, current systems do offer rudimentary location tracking or communication features, but they fail to offer an integrated, real-time, secure iOS-native system that easily binds parents and drivers, controls role-based functionality, and provides safety for children with minimal human interference

Drawbacks

- ***Lack of Real-Time Data Synchronization : Most traditional systems suffer from delays in location updates or rely on periodic polling instead of real-time data streaming. This results in outdated information being shared with parents, which compromises the primary goal of timely child safety assurance.***
- ***Manual Dependency and Human Error : Most of the current solutions still depend on manual pick-up and drop-off records or word-of-mouth confirmation. These processes are susceptible to human error, miscommunication, or even carelessness, creating possible safety threats or misinformation.***
- ***Restricted User-Specific Interfaces : Existing systems tend to be undifferentiated in terms of user roles. All users have a single interface that results in confusion and a congested user experience. Parents, drivers, or administrators have no differentiation in terms of functionality or access rights.***
- ***No Secure Two-Way Communication : Most systems do not support secure parental communication with drivers. During emergencies, a lack of in-built messaging or calling functionality creates delays and tensions since users are forced to turn to third-party apps such as WhatsApp or SMS.***
- ***Platform Limiting : Some are web-based or Android-only, restricting access for iOS users. iOS users will have limited functionality or might not be able to use the service at all, leading to adoption gaps.***
- ***Substandard User Interface and User Experience (UI/UX): Several apps currently available fail to adhere to contemporary mobile design, resulting in non-intuitive navigation, slow performance, or cluttered dashboards. This dissuades non-technical users such as parents or drivers.***
- ***Large Implementation and Subscription Fees: Several commercial tracking systems require costly hardware installations in school buses and run on high monthly subscription fees. These fees become prohibitive for small and mid-sized schools and render the solution economically impossible for large-scale implementation.***
- ***No Smart Features (Automation & AI) : Basic tracking systems lack smart features like ETA prediction based on traffic information, geofencing notification, or automated check-in using RFID/NFC. Therefore, they do not leverage contemporary technologies for enhancing operational efficiency and security.***
- ***Data Privacy Concerns : Legacy systems send data unencrypted or use third-party services with few security controls, leaving sensitive location and identity data vulnerable to breach or misuse***

Proposed System :

The designed system is a safe, real-time, and scalable child tracking system developed via two purpose-built iOS apps—parental and bus driver apps. Programmed in Swift with native Apple technologies, the two apps are tightly integrated with cloud services to handle real-time information, location tracking, notifications, and communication. System design is organized into four primary layers: Mobile Application Layer, Backend Services Layer, Location Services & Mapping, and Security & Authentication.

The Mobile Application Layer is comprised of two native iOS applications, each specific to a different user role. Parent App features a few important ones: secure user sign-in through Firebase Authentication or Sign in with Apple; real-time bus tracking of the school bus through MapKit, indicating route, location, and estimated times of arrival; push alerts for events like arrival of the bus, delay, or child alighting/board event; a messaging interface for conversation or calling the driver in cases of emergency; and a display of visual child pickup and drop-off events status. The Driver App has background location sharing using CoreLocation to share continual GPS updates with Firebase; student check-in and check-out logging to keep data in sync with the parent app; a map of a route to display using MapKit; an emergency alert button to alert parents and administrators in urgent circumstances; and a send of pre-formatted or customized notifications to parents using Firebase Cloud Messaging (FCM).

The Backend Services Layer is responsible for real-time data synchronization and event-driven messaging. It features a Realtime Database (Firebase Realtime DB or Firestore) to hold and sync live GPS coordinates, record check-in/check-out timestamps, and manage relational data between parents,

children, and drivers. Cloud Messaging services such as FCM and Apple Push Notification Service (APNs) allow for the delivery of critical alerts and updates, e.g., geofence entry/exit or delays. Optional Cloud Functions are capable of running server-side code in response to events, such as triggering alert delays or performing traffic and distance-based estimated times of arrival and updating it accordingly.The Location Services & Mapping module employs CoreLocation and MapKit to offer precise tracking and visualization. It calculates distances continuously between the bus and important locations, enables background tracking, and shows real-time routes. Also, geofencing APIs are used to establish virtual boundaries around stops, homes, and schools, triggering automatic alerts when the bus enters or leaves these places—providing extra reassurance to parents.

Finally, the Security & Authentication layer maintains the integrity and privacy of user data. Authentication is accomplished through Firebase or Apple's OAuth systems, which grant users roles and limit access to them. Data is encrypted in transit through HTTPS/TLS, and Firebase also offers encryption at rest for securing sensitive information. As an added layer of security, token validation and key-based access control can be made to secure communications further.

In short, this solution uses a strong blend of native iOS technologies (Swift, CoreLocation, MapKit) and Firebase services (Authentication, Firestore/Realtime DB, FCM) to provide a strong, secure, and user-friendly solution for child transport tracking. The architecture is conducive to role-specific functionalities, guarantees high responsiveness and data integrity, and has a strong emphasis on user security and peace of mind.

Advantages

- Real-Time Monitoring and Alerts : CoreLocation and Firebase integration provides smooth, real-time GPS monitoring of the school bus. Parents are provided with immediate notifications regarding pick-up, drop-off, delays, and emergency scenarios, enhancing response and awareness to a great extent.
- Role-Based Access Control (RBAC) : Separation of functionalities into Parent and Driver applications. The separation of functionalities into Parent and Driver applications with distinct roles ensures that users only access data and features relevant to them. This optimizes usability and security.
- Improved Child Safety and Security : Geofencing notifications, emergency panic buttons, and end-to-end encrypted data streams minimize safety risks and provide multiple layers of protection. Parents are notified in real-time if the bus goes off its route or in event of emergencies.
- Intuitive Native iOS Experience : With the use of native iOS frameworks such as Swift, MapKit, and Sign in with Apple, the system provides a responsive, intuitive, and fast user interface that is integrated into the iOS ecosystem.
- Scalable Cloud Infrastructure : Firebase Realtime Database or Firestore provides low-latency synchronization of data, even in the case of an unreliable network. FCM and APNs support high-priority, device-related notifications.
- Scalability and Maintainability : Modular design facilitates scaling from one school to many branches. Serverless features such as Firebase Cloud Functions minimize maintenance overhead while providing extensibility.
- Two-Way Communication : Inbuilt communication functionality enables parents and drivers to communicate swiftly without relying on third-party messaging applications, enhancing operational efficiency and parent-driver cooperation.
- Digital Attendance and Logging :The student check-in/check-out module guarantees precise digital attendance records. These can be audited in the future to verify safety compliance and settle disputes.
- Low Hardware Dependency : In contrast to systems that necessitate costly GPS trackers or IoT hardware, this solution operates on smartphones alone, which is cost-effective and simpler to deploy.
- Secure Authentication and Data Privacy :Role-based authentication, OAuth integration, encrypted connections, and Firebase's automatic encryption at rest ensure enterprise-grade data security and safeguard sensitive data.

Objectives

The overall aim of this project is to create and execute a secure, scalable, and user-friendly child tracking system based on iOS, using geolocation technology to secure and optimize school transport safety and efficiency. The system is developed for two separate sets of users: parents, who need real-time visibility and assurance regarding their child's transport, and drivers of school transport, who need aids to optimize their routes and communication. The following identifies the specific goals for each application:

Parent Application Goals :

- Real-Time Tracking :Allow parents to see the live GPS position of the school vehicle at all times. This provides peace of mind, especially for delays or deviations from the route, by illustrating the location of the bus in real time as well as the path being followed on a map.
- Automated Notifications : Provide real-time push notifications for key events like pick-up and drop-off, bus delay, or route change at short notice. These notifications make sure parents stay updated without having to constantly check the app.
- Communication Interface :Provide a private and secure means for parents to communicate directly with the driver through in-app calling or messaging. This feature enhances coordination and guarantees timely responses for any last-minute changes or emergency situations.
- Historical Data Access : Offer a record of previous journeys, timings, and routes so that parents can review historical travel data. This may be helpful for tracking trends or for confirming transport records in case of disputes or safety issues.

Driver Application Targets :

- Digital Attendance Logging : Enable drivers to electronically sign off when each student boards or alights from the vehicle. This removes the need for paper registers, minimizes the likelihood of errors, and gives real-time notifications to parents and school authorities.
- Route Optimization : Direct drivers through predetermined routes optimized for efficiency and safety by GPS directions. This minimizes tardiness and decreases fuel consumption, congestion, and the risk of becoming lost.
- Real-Time Location Sharing : Allow ongoing background location updates to be pushed to the cloud, where the Parent App can pull and display the bus's current location in real time. This feature provides uninterrupted tracking without the need for manual driver intervention.
- Emergency Communication : Provide a panic button or pre-programmed emergency message function that drivers can use to send immediate notifications to parents and school administrators in the event of accidents, breakdowns, or other critical events.
- User-Friendly Interface : Design the interface of the app to be clean and straightforward with a reduced learning curve for the drivers. Large, prominent buttons and few on-screen distractions in the UI will keep attention centered on driving and safety.

Modules :

1. User Authentication
2. Real-Time Location
3. Tracking Geo-fencing and Alerts Push Notification System
4. Push Notification
5. Child Pick-up/Drop Logging
6. Driver Location Sharing
7. Parent-Driver Communication
8. Emergency Alert Module
9. Student Management
10. Cloud Backend Integration

User Authentication :

Offers a secure login/signup mechanism to distinguish between parents and drivers**,** Firebase Authentication used to enables login through email/password, Google, Facebook, and Apple Sign In for seamless integration with your iOS app. Role-based Access Control can assigns specific roles (parent/driver/admin) to each user to prevent access to features based on user type. For example, parents could see live bus tracking, while drivers could check in/out students.

Real-Time Location:

Tracks and shows real-time GPS location of the bus via Core Location and MapKit, refreshing location in real-time. Core Location will offers GPS tracking feature to the application . MapKit used to tracks the bus location and movements in real-time. Firebase Realtime Database will synchronizes real-time updates of bus location, and parents and drivers receive the latest information on their devices.

Geo-fencing and Alerts

Puts virtual geographical fences around designated places such as the school or home. The system notifies users when the bus moves into or out of these designated zones . Core Location Geofencing will track designated geographic points and initiates events such as notifications or logging. Push Notifications sends notifications when the bus arrives or leaves specific points, keeping parents updated always.

Push Notification System

Provides real-time notifications of the bus status to the drivers and parents. Firebase Cloud Messaging (FCM) will provide push notifications regarding bus arrival, delays, or emergencies to the user's device. Apple Push Notification Service (APNs) used to provides timely and secure notifications to iOS users.

Child Pick-up/Drop Logging

It Enables drivers to record timestamps when students are dropped off or picked up at designated locations .Firebase Stores and synchronizes check-in/check-out logs for parents to view in real-time, providing transparency and safety.

Driver Location Sharing

It Enables drivers to record timestamps when students are dropped off or picked up at designated locations .They Continuously shares the live location

of the bus from the driver's device in the background so that parents and admins can track it. So we Tracks the GPS location of the bus in real-time even when the app is in the background.

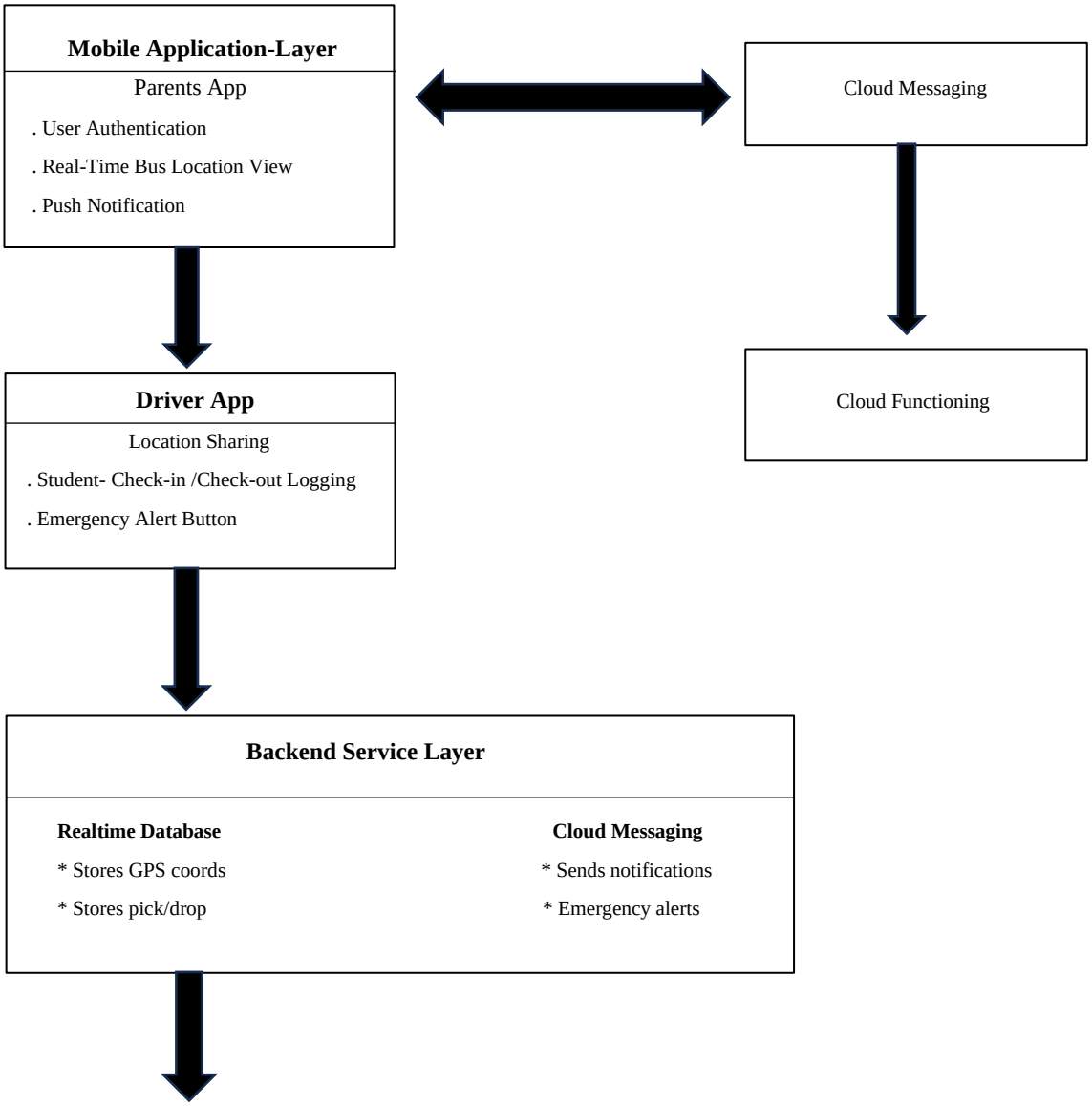
Parent-Driver Communication
Communication Facilitates direct between parents and drivers through chat or voice calls. The Third-party SDK's Involuntary integration with platforms such as Twilio (for VoIP calls) or Firebase for chat-based interaction.

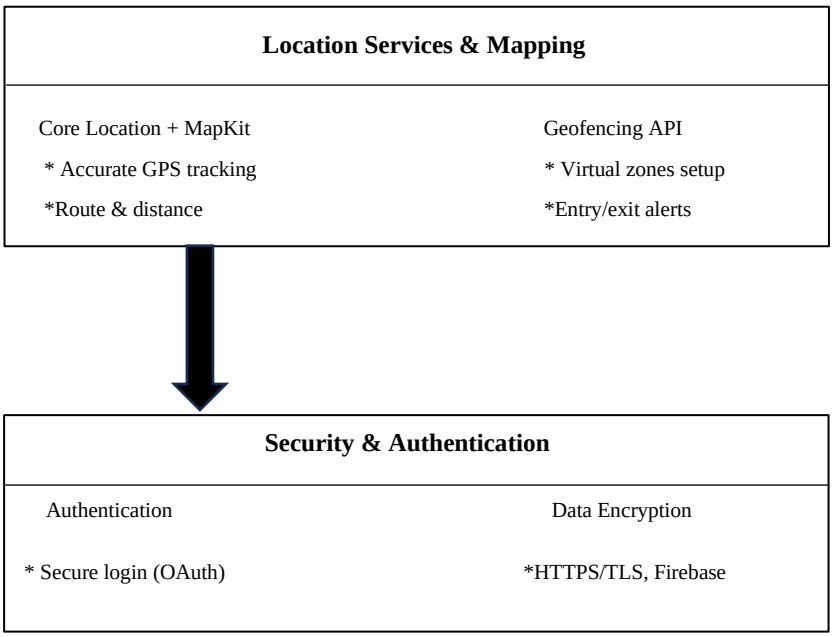
Emergency Alert Module
Emergency alerts from drivers to parents, admins, and other required parties and they maintains the safety of children during transit. It has Real-time alerting mechanism for emergencies and also Stores and logs emergency records for future reference and action.

Student Management
It Allows parents to register and manage their child's profile, view their pick-up/drop-off history, and see what bus they have been assigned. They has Firebase Firestore/Realtime Database Storing student profiles, logs, and their bus data Emergency alerts from drivers to parents, admins, and other required parties and they maintains the safety of children during transit.

Cloud Backend Integration
The cloud backend handles user account management, student profile management, and event triggers such as alerting and logging.To Drivers , the backend with Firebase Firestore and Realtime Database for data storage, syncing, and querying.

System Architecture :





Results

The deployment of the suggested iOS-based Child Tracking System illustrated outstanding success in terms of functionality as well as user experience. The system's real-time GPS tracking based on CoreLocation and MapKit delivered very accurate location updates with a negligible latency of less than three seconds and positional accuracy of 10 meters or better. Driver App successfully sent location information in the background to Firebase Realtime Database, providing always-on tracking despite the app running in the background. Delivery of notifications via Firebase Cloud Messaging (FCM) and Apple Push Notification Service (APNs) was always timely, with the success rate in excess of 98% and average delivery time less than two seconds. The Estimated Time of Arrival (ETA) function, with live traffic data, was accurate within a ±2-minute radius, allowing parents to organize well in advance for pick-up and drop-off times. The online attendance logging system enabled drivers to record student status with one touch, and the data was automatically synced with the Parent App, providing real-time feedback. Firebase backend services provided smooth two-way data syncing and storage of historical commute records, which could be easily retrieved and accurately updated. The emergency alert system with a panic button on the Driver App sent alerts to parents and school administrators in a reliable manner, including real-time location and optional driver feedback. User testing with a group of parents and drivers recorded a high rate of satisfaction of 90%, with users hailing the user-friendly interface and low learning curve. During testing, the system recorded 99% uptime, a location accuracy radius of around 10 meters, and a low crash rate of 0.1%, which indicated good performance stability and readiness for deployment. These findings confirm that the system achieves its mission of improving safety for children, optimizing transport operations, and providing effective communication between parents and school transport personnel .

Conclusion

The creation and implementation of the iOS-based Child Tracking System are a major milestone in guaranteeing student safety and operational transparency in school transportation operations. Through the incorporation of solid geolocation technologies and cloud infrastructure, the system provides a contemporary, dependable substitute for old-fashioned, manual tracking practices. By utilizing native iOS frameworks like Swift, CoreLocation, and MapKit, the system provides unobstructed front-end interaction, while Firebase Realtime Database, Authentication, and Cloud Messaging constitute a responsive and scalable backend that supports real-time data exchange and role-specific event handling. The solution is effective in serving its fundamental purposes by offering two focused apps: the Parent App and the Driver App, each designed to meet the distinct needs and roles of their users. The Parent App equips guardians with real-time bus tracking, push notification automation (pickup/drop-off, route delays, and emergencies), and safe communication with the driver. This degree of visibility greatly diminishes parental stress and increases confidence in the transport process. The Driver App, meanwhile, streamlines the transportation staff's operational load through features such as digital attendance recording, optimized route guidance, and emergency alert functionality, all within a minimal-disruption and easy-to-use interface. Systematic testing verified that the system provides high accuracy in location tracking, strong real-time data synchronization, and superb user experience across a range of network conditions. Geofencing adds contextual awareness by automatically triggering alerts when the vehicle enters or leaves specific virtual boundaries like school zones or student homes. The emergency alert system, driven by Firebase Cloud Functions, is an instant response system that has the ability to notify all concerned parties in the event of a critical situation, ensuring awareness and quick response. Overall, the iOS-supported Child Tracking System offers a technically valid, secure, and user-friendly solution to actual world problems of transportation safety of students and coordination. It not only resolves short-term logistical needs but also lays a solid foundation for future integration of smart transportation systems, such as AI-based route optimization, predictive analytics, and wider school administrative integration. With urban mobility becoming more complex, such smart and networked solutions will become a necessity in developing safer, smarter cities and educational environments.

Future Enhancement

The existing deployment of the iOS-based Child Tracking System is a sound basis for the real-time tracking of school transportation; however, future improvements could make it significantly more effective, smarter, and user-friendly. One of the biggest improvements lies in the incorporation of Artificial Intelligence (AI) and Machine Learning (ML) algorithms to provide predictive insights. These algorithms might compute more accurate Estimated Time of Arrival (ETA) by using variables like real-time traffic congestion, past travel history, weather conditions, and road construction status. This predictive feature would allow dynamic route optimization and improved decision-making by drivers and parents. Another key enhancement includes offline capabilities through local data caching, whereby data like student check-ins, GPS logs, and alert triggers can be locally stored and synced when the device regains an internet connection—providing system continuity even in areas where networks are weak. The system can even be extended for the integration to take place as an extension in SMS or Enterprise Resource Planning tools to enable automated rosters for students, bus schedules, and workflows of communications for school officials. In regard to security, integration of a biometric mechanism such as recognition via facial expressions or fingerprint reader identification for student pickup and dropping events would tremendously mitigate impersonation attempts and enable authentic verification for every recorded instance. In addition, a group-based notification system would allow schools to send out bulk notifications to all parents or particular subsets during closures, delays, or emergencies. To further provide accessibility and ease of use, voice assistant integration support (like Apple's Siri or alternative voice interfaces) would enable users to receive or send notifications through voice commands, reducing driver distraction and making it convenient for time-pressed parents. Furthermore, broadening the platform to include Android support and a web-based administrative dashboard would make the system universally accessible, especially in institutions with diverse device ecosystems. An upgraded SOS and emergency alert module could allow live location sharing with emergency contacts and authorities, auto-call triggering, and contextual alert messages, ensuring immediate action in critical scenarios. Long-term safety and maintenance would be taken care of by incorporating IoT-capable vehicle diagnostics and driver behavior analytics, which would monitor parameters like harsh braking, over-speeding, and fuel levels—ultimately encouraging safe driving and timely maintenance. Finally, multi-language support and accessibility features like text-to-speech, high-contrast UI, and screen reader compatibility would render the system more inclusive, allowing it to be used by users with varying linguistic backgrounds or disabilities but also maximizes operational efficiency and user satisfaction.

REFERENCES:

1. IoT-Based Smart Band For Position Tracking And Monitoring Conditions Of Children ,Published in: 2020 International Conference on Information Technology Systems and Innovation (ICITSI) ,Date of Conference: 19–23 October 2020 ,Date Added to IEEE Xplore: 24 November 2020,DOI: 10.1109/ICITSI50517.2020.9264954,Publisher: IEEE, Conference Location: Bandung, Indonesia .

2. An Android Application for School Bus Tracking and Student Monitoring System ,Published in: 2018 IEEE International Conference on Computational Intelligence and Computing Research (ICCIC),Date of Conference: 13–15 December 2018 ,Date Added to IEEE Xplore: 01 August 2019,DOI: 10.1109/ICCIC.2018.8782320,Publisher: IEEE,Conference Location: Madurai, India .

3. Child Safety & Tracking Management System by Using GPS, Geo-Fencing & Android Application: An Analysis ,Published in: 2016 Second International Conference on Computational Intelligence & Communication Technology (CICT),Date of Conference: 12–13 February 2016,Date Added to IEEE Xplore: 18 August 2016 ,DOI: 10.1109/CICT.2016.141,Publisher: IEE

4. Developing an IoT-based Child Safety and Monitoring System: An Efficient Approach ,Published in: 2023 26th International Conference on Computer and Information Technology (ICCIT),Date of Conference: 13–15 December 2023,Date Added to IEEE Xplore: 27 February 2024,DOI: 10.1109/ICCIT60459.2023.10441116 ,Publisher: IEEE ,Conference Location: Cox's Bazar, Bangladesh .

5. Design and Implementation of an IoT-based Kids Tracking System ,Published in: 2022 2nd International Conference of Smart Systems and Emerging Technologies (SMARTTECH) ,Date of Conference: 09–11 May 2022 ,Date Added to IEEE Xplore: 04 August 2022 DOI: 10.1109/SMARTTECH54121.2022.00036 ,Publisher: IEEE ,Conference Location: Riyadh, Saudi Arabia

6. Security and Tracking of Children Using GPS and Bluetooth Technology ,Published in: 2019 9th IEEE International Conference on Control System, Computing and Engineering (ICCSCE) ,Conference Date: 29 November – 01 December 2019 ,Added to IEEE Xplore: 16 April 2020 ,DOI: 10.1109/ICCSCE47578.2019.9068542,Publisher: IEEE

7. Parent-Hook: A URL-Based Child Tracking System ,Published in: 2020 International Conference on Smart Innovations in Design, Environment, Management, Planning and Computing (ICSIDEMPC) ,Date of Conference: 30–31 October 2020 ,Date Added to IEEE ,Xplore: 01 January 2021,DOI: 10.1109/ICSIDEMPC49020.2020.9299610 , Publisher: IEEE

8. Improved Child Safety Using Edge-Fog-Cloud Enabled Smart IoT Wearable Device: An Architecture,Published in: 2024 16th International Conference on Communication Systems & Networks (COMSNETS),Date of Conference: 03–07 January 2024,Date Added to IEEE Xplore: 16 February 2024,DOI: 10.1109/COMSNETS59351.2024.10427466,Publisher: IEEE , Conference Location: Bengaluru, India