

# College Bus Application

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**Abstract:** *In the modern era of digitalization, smart transportation solutions are crucial for improving efficiency and safety in college bus services. The College Bus Tracking System is an Android-based application designed to enhance the commuting experience for students by integrating real-time bus tracking and automated attendance management. The live bus tracking feature allows students to monitor the exact location of their assigned bus using GPS technology, reducing waiting time and ensuring a hassle-free travel experience. Additionally, the system incorporates daily attendance management, enabling automated student check-ins using QR codes, RFID, or GPS-based validation. This eliminates manual errors and provides accurate attendance records for administrators. The application utilizes Firebase integration for secure data storage and seamless communication between students, drivers, and college authorities. Furthermore, an emergency alert system is embedded to enhance student safety in unforeseen situations. By leveraging advanced tracking and automated attendance, this system ensures efficiency, security, and transparency in college transportation management.*

**Keywords:** Live Bus Tracking, GPS-Based System, Student Attendance, Smart Transportation, Firebase Integration