The Classroom Automation System is an innovative solution that automates various aspects of a classroom, including devices such as fans, lights, and projectors, while also monitoring student performance and promoting sustainability by saving electricity. The system includes an IoT device connected to existing devices in the classroom and an android app that provides control and monitoring of automation to administrators, including teachers and class representatives. The system is accessible with an internet connection and can be controlled and monitored from anywhere in the world.

Teachers can use the student performance monitoring system to track their students' progress. The system generates reports that help identify areas where students are struggling and provides personalized support. The system is scalable and customizable to meet the needs of different classrooms and schools, and it is designed with security in mind using secure communication protocols like HTTPS or MQTT.

The Classroom Automation System saves time and reduces administrative workloads by automating routine tasks, allowing teachers to focus on providing students with a more engaging learning experience. The system saves electricity by automatically turning off devices when not in use, reducing energy consumption and costs. It provides real-time insights into student behaviour and progress, allowing teachers to intervene and provide support when needed. The system tracks attendance patterns, identifies students who are at risk of falling behind, and generates notifications when a student misses a class or falls behind on assignments.

Moreover, the Classroom Automation System can be integrated with other educational technologies such as learning management systems and educational apps, enabling teachers to create and manage online learning environments and provide students with access to digital resources. By automating routine tasks, providing valuable insights into student performance, and promoting collaboration and communication between teachers, students, and parents, the system creates a more connected and engaged learning community that works together to achieve better educational outcomes. The Classroom Automation System is a comprehensive approach to modernizing the classroom, ground-breaking in nature, and revolutionizing the classroom experience.

This project is being developed by using several sensors, microcontrollers like NodeMCU and integrating these things with an Android Application built using Java language and Connected to the system using Google Firebase.