

IOT Based Smart Switch Board

**Ms. Vanita Borade, Ms. Sujata Salve, Ms. Siddhi Lachake,
Ms. Samiksha Savkar, Prof. Akshay Sonawane**

Department of Electrical Engineering
Guru Gobind Singh Polytechnic, Nashik, India

Abstract: *This paper explores the design and implementation of a Smart Home Automation System that integrates the Blynk IoT platform, an infrared (IR) remote control system, and an OLED display using the ESP32 microcontroller. The system aims to provide users with an intuitive, flexible, and efficient way to control home appliances such as lights and fans, both locally via an IR remote and remotely through the Blynk mobile app. By utilizing the ESP32's capabilities in Wi-Fi connectivity and PWM control, combined with real-time status updates on an OLED display, this system enhances the user experience. The system is designed for low cost, ease of use, and scalability in smart home applications.*

Keywords: Smart Home, Automation, IoT, Blynk, IR Remote, ESP32, OLED Display, Fan Control, LED Control, PWM.