# ABSTRACT

***Design and Development of Stepper Motor Control***

***Using PLC and HMI IoT***

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*This final project discusses the design and development of a stepper motor control trainer based on Mitsubishi FX3U PLC and B7H IoT HMI. The background of this research is the need for a practical learning media that allows students to understand stepper motor control precisely and integrate digital interfaces. The objective of this study is to design a control system capable of regulating the speed, rotation direction (CW/CCW), and rotation angle of the stepper motor, while providing an interactive practical platform for students. The research methods include the design of hardware and software systems, creation of block and 3D diagrams, performance testing of the stepper motor, and analysis of accuracy, stability, and system response. The test results show that the system can control the stepper motor according to the parameters set via the HMI IoT with high precision, stability, and real-time performance. In conclusion, this trainer is effective as a learning media and can serve as a reference for further research in industrial automation.*

***Keywords**: Stepper Motor, Mitsubishi FX3U PLC, HMI IoT, Motor Control, Automation Trainer*