

ABSTRACT

Along with the development of the internet, technology in the industrial world is also developing rapidly and rapidly. Programmable Logic Controller (PLC) is a relay replacement digital controller consisting of a Central Processing Unit (CPU), Programming Memory (PM), Programming Device (PD), input-output module, and power supply unit. PLCs are often chosen as digital controllers in the industry. However, device monitoring in the industry is still manual and can only be done in industrial areas. For that, device monitoring and the remote control requires a user interface device or what is called a user interface.

In this final project, a user interface will be designed in remote device monitoring using the Raspberry Pi as a PLC memory data reader media and sending Raspberry Pi data to the ANTARES internet cloud as a server and for control can be done on the Raspberry Pi. The communication protocol used is the MODBUS RTU protocol, as a medium for sending and communicating data from the PLC to the Raspberry Pi.

The results of this final project are the success in communicating the Raspberry Pi B 3+ with the SIEMENS S7-200 PLC using the MODBUS RTU protocol as a communication medium. For testing the baud rate of 9600 bps, 19200 bps, 38400 bps, 57600 bps, and 115200 bps, the highest average time was 0.0009336 second during the device search process, the lowest average time was 0.025 second in the process of reading memory data and input/output. and the highest average time for the process of writing data on the Raspberry Pi is 2.16475 seconds. For the test results, a lot of memory data and input/output read by the Raspberry Pi produced the highest average of 0.02653 seconds in the process of reading memory data and input/output and in the process of sending data to ANTARES the highest average was 0.5221 seconds And testing the whole system there were no errors in the data transmission process, the data was 100% readable by the Raspberry Pi.

Keywords: Cloud Internet ANTARES, PLC, Raspberry Pi, MODBUS RTU Protocol.