ABSTRACT

The Faculty of Industrial Engineering, Telkom University since 2021 has moved the building to the Telkom University TULT Building on floors 4, 8, and 18. Based on data from the Telkom Education Foundation as the assignor to the construction management consultant PT CIRIAJASACM and PT PP as the contractor implementing the total number of coolants rooms on Floors 4, 8, and 18 reach 65 air conditioning units. The number of 65 air conditioning units must be controlled and supervised by air conditioning because it is based on data taken from the Center for Energy Conversion Technology in 2020, air conditioners are the largest energy consumers in buildings with an average of 64.3% of the energy of a building. design of an air conditioning control system that can control and supervise the use of air conditioning. To carry out the control, a control system for the use of air conditioning is designed using the ESP8266 NodeMCU microcontroller which is controlled through the IoT-based Blynk application. The system is designed using the v-model method as a frame of reference starting from determining the system requirements to be designed after successfully determining the system requirements, the next process is determining the software and hardware design, then determining the module design, namely the steps in implementing, implementing, then carrying out system integration testing, and conducting acceptance testing, namely system validation. The implementation of the control design has been successfully carried out, it can be seen from the validation of the system that all system components can be integrated, indicating that the system is working. With the design of an IoT-based air conditioning control system, it provides convenience in controlling and observing the air conditioning system because the user does not need to directly observe the condition of the air conditioner on or off the user can turn off or turn on the air conditioner in real-time without having to observe directly. because direct observation will cause excessive human resource needs and the risk of human error will be very risky.

Keywords **- control, IoT, v-model**