ABSTRACT

Abstract— In the fast-paced era of globalization, technological developments have yielded significant positive impacts across various sectors, including the application of the Internet of Things (IoT). Innovations in the field of IoT, such as the utilization of temperature measurement devices, have brought about significant changes in everyday life. In the context of maintaining occupant comfort, the ability to monitor and predict indoor temperatures becomes essential. This study aimed to forecast humidity and temperature in the Telkom University Landmark Tower (TULT) building at 1-minute intervals using the polynomial regression method. Data collection involved direct measurements using the DHT22 sensor, and the result presents the Root Mean Square Error (RMSE) and Mean Absolute Error (MAE) for the test and train sets. The MAE values for the test and train sets were 0.0482 and 0.0413, respectively, while the RMSE values were 0.0757 and 0.0678. Additionally, the result includes humidity measurements for both sets, with values of 0.3593 for the test set and 0.2907 for the train set. These results demonstrate the accuracy and capability of the polynomial regression algorithm in humidity and temperature on the TULT building.

Keywords— IoT, TULT, Humidity, Polynomial Regression