

Implementation of Monitoring and Prediction of Humidity, Temperature, and Light Using a Support Vector Machine (SVM) for Orchid Greenhouses in Lembang

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Abstract— Orchid is one of the most admired ornamental plants among ornamental plant lovers. Greenhouses are needed to develop orchids so that they grow optimally and monitoring is needed for the development itself. It is preferable to utilize the Support Vector Machine (SVM) method for monitoring and predicting humidity, temperature, and light in greenhouses since it has excellent accuracy and performs well in high-dimensional spaces and for data processing, the mean biased error (MBE) and the coefficient of determination are used. a comparison of the MBE and the coefficient of determination, where the coefficient of determination for training and test data is near to zero, showing that the measurement results employ the humidity coefficient of determination Orchids are one of the most admired decorative plants among lovers of ornamental plants; admirers of this plant come from all over the world; as a result, orchids are one of the items exported. Based on the temperature data, it is shown that the highest temperature at 27.6 °C and the lowest temperature read by the DHT22 sensor is 14.9 °C. and for the highest frequency at 27.6 °C as many as 1008 data frequencies appear. Measurements using the coefficient of determination on temperature data show that 85% of the test data managed to predict very well and for the train data it showed that 83% managed to predict well.

Keywords - *Support Vector Machine, greenhouse, orchid, iot*