

## ABSTRACT

Orchid plants are commodity plants that are favored by many ornamental plant enthusiasts. Orchid plants have diverse and beautiful flowers that make orchid plants a plant of high aesthetic value and have an important role in the flower trade and industry at the national and international levels. The use of a greenhouse or green house as a plant protection construction building facilitates the control of environmental factors that greatly affect plant growth such as light, air temperature and air humidity. The use of this green house can be modified according to what is needed by the plant, the green house system will work properly if the system is equipped with an automatic system that works without the need for human labor. This is very supportive in an effort to increase the productivity of a product or plant produced in order to be maximized. Along with technological developments, various prediction models have also progressed quite rapidly.

Generalized Additive Model can be used for forecasting because it has the ability to examine and recognize historical data patterns. The application of the Generalized Additive Model in the field of forecasting and prediction is in almost all scientific studies from recent years because it has better accuracy than statistical and mathematical models, besides the Generalized Additive Model has flexibility, both in design and use. This is a positive value for monitoring and predicting humidity, temperature and light on orchid plants in the green house. The method used Generalized Additive Model (GAM) was first developed by Hastie and Tibshirani in 1986 (Hastie and Tibshirani). GAM is an extension of the generalized additive model by modeling Y as an additive combination of univariate functions of the explanatory variables. This method accommodates the nonlinear influence of predictor variables without having to know the form of influence explicitly. The nonlinear influence can be corrected by smoothing the structure of the relationship between the response variable and the predictor variables. The purpose of this GAM method is to get the best results for monitoring the prediction of light, humidity and temperature in orchid plants in greenhouses.

Keyword : Internet of Things, Orchid