ABSTRACT

Weather is a state of air in a place or area where there is often rain, cloudy or bright. Weather prediction is a major requirement for several types of buildings such as houses, buildings, and factories that require high sun exposure, but are very risky with rain. To solve this problem we need a smart roof that can close automatically when it is detecting a rain. Smart roofs can be implemented in homes, ball stadiums, casual houses (at seaside hotels) even in factories where there is a place to dry skin, fish.

Utilization of smart roof by using micro computer Raspberry Pi which added weather station where one of its function to improve accuracy and detection speed acquired data in the form of temperature value, humidity, wind speed, wind direction, rain intensity and light intensity so it can be used on smart roof. The data that has been obtained is sent to ubidots server to be accessed by fuzzy system which can determine rain prediction so that actuator can move according to prediction result. Rain detection system test results on the smart roof proves the system can predict and detect rain accurately with a light intensity value of less than 5000 lux, but when the rain occurs with a light intensity of more than 5000 lux detection sensors will detect the rain fall and immediately close the roof, detection sensors Rain prevents open roofs when it rains despite high light intensity

Keywords *: Smart Roof, Weather Station, Ubidots, Fuzzy, Raspberry Pi*