

WEATHER FORECASTER via DATA LOGGING

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ABSTRACT

Weather is hard to be predicted as they are unforeseeable, able to change all of a sudden. It could be sunny or windy in the morning, but in the afternoon, a thunderstorm could be looming over the skies. Knowing what the weather could be in advance is useful for humans. Therefore, research has been done on how to predict the weather as accurately as possible.

The aim of this project is to construct a prototype of weather forecaster that can detect wind speed and its direction, humidity of air, sunlight density, and rain volume. With this information, it is possible to predict the weather of near future for the assistance for farmer, fisherman and agriculture related industry personnel. This system will retrieve the information detect from circuits build to detect the needed information, and send to the 16F877A/874A PIC for analysis. Then, the data will be sending via wired transmission to the GUI system in PC for display. The wind speed is analyzed through the use of IR sensor with a counter and timer. While the wind direction is detected using magnetic switch located at 8 different poles. As for sunlight density, a LDR sensor is used to detect the presence of light. For rain volume circuit, water level sensor is used where each sensor is placed at different level. Lastly, the humidity is studied theoretically due to there is not much change in output for tropical country like Malaysia. The overall design is met and proven by the results obtained in testing and troubleshooting.

Keywords: Weather Forecaster, microcontroller, wired transmission, GUI, IR sensor, magnetic switch, LDR, water level sensor.