Automatic Sustainable Low Cost Climate Control for Small Rural Buildings

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Panama has a tropical climate with high 28°C temperatures and 65% humidity which lead to deadly health crises in low-income, hot, rural homes such as dehydration, coma, and heat strokes. We have created a low-cost engineering solution with the WiFi-enabled Raspberry Pi 3, a fan, solar panel, charge controller, battery, DHT-11 sensor, and relay. This solution is, in essence, a solar panel powered climate monitoring system. Our prototype successfully reduces air temperature in enclosed and semi-enclosed environments exposed to Panama’s climate.

Awards Won: