Smart Ceiling Fan and Light Combination

By
Yang Xiao
Mike Roberts
ME 3484
Introduction

- Energy Crisis
- Energy Efficient Smart Appliances
  - Saves energy
  - Safer
  - Automated Control, No user intervention needed
Our Product

Smart Ceiling Fan/Light Combination
- Adjusts light intensity based on lighting condition
- Adjusts fan speeds based on atmospheric temperature
- Alarming Features
  - Alerts under intense heat (fire)
- Occupancy Sensing Capability
- Multiple user input choices
The traditional Casa Vieja fan is nicely finished in white with 5 white blades. It features a 52" blade span, 14° blade pitch, 3-speed pull chain, and a lifetime motor warranty. Light kit (75527) takes a 10 watt energy saving fluorescent and is optional and extra. Comes standard with 3" downrod.

LAMPS PLUS Price $176.98
Main Components

- Embedded Microcontroller (Basic Stamp 2)
- Temperature Sensor (DC 1620)
- Light Sensor (Photo Resistor)
- Infrared Sensor (Infrared LED)/ Receivers
- Power MOSFET
- BJT and JFET
- Digital Potentiometer
- 555 Timer (PWM)
- Reed Relay
Schematics
Estimated Cost (Prototype)

- Basic Stamp with Board of Education kit ($100)
- DC Fan ($20)
- Light ($1)
- DS1804, Digital Potentiometer ($2 X 2)
- 555 Timer ($2)
- DC1620 Temperature Sensor ($2)
- Power MOSFET ($2)
- Reed Relay ($1)
- Infrared LED ($2)
- Infrared Phototransistor ($1 X 2)
- Photoresistor ($1)
- BJT and JFET ($2)
- Other Components ($5)

Total Cost ($144)
Possible Future Upgrades

- Electrocution Protection
- Statistical Data
  - Temperature
  - Traffic Flow
- Better User Interface