



Solar Powered Temperature Sensor Travelling Fan

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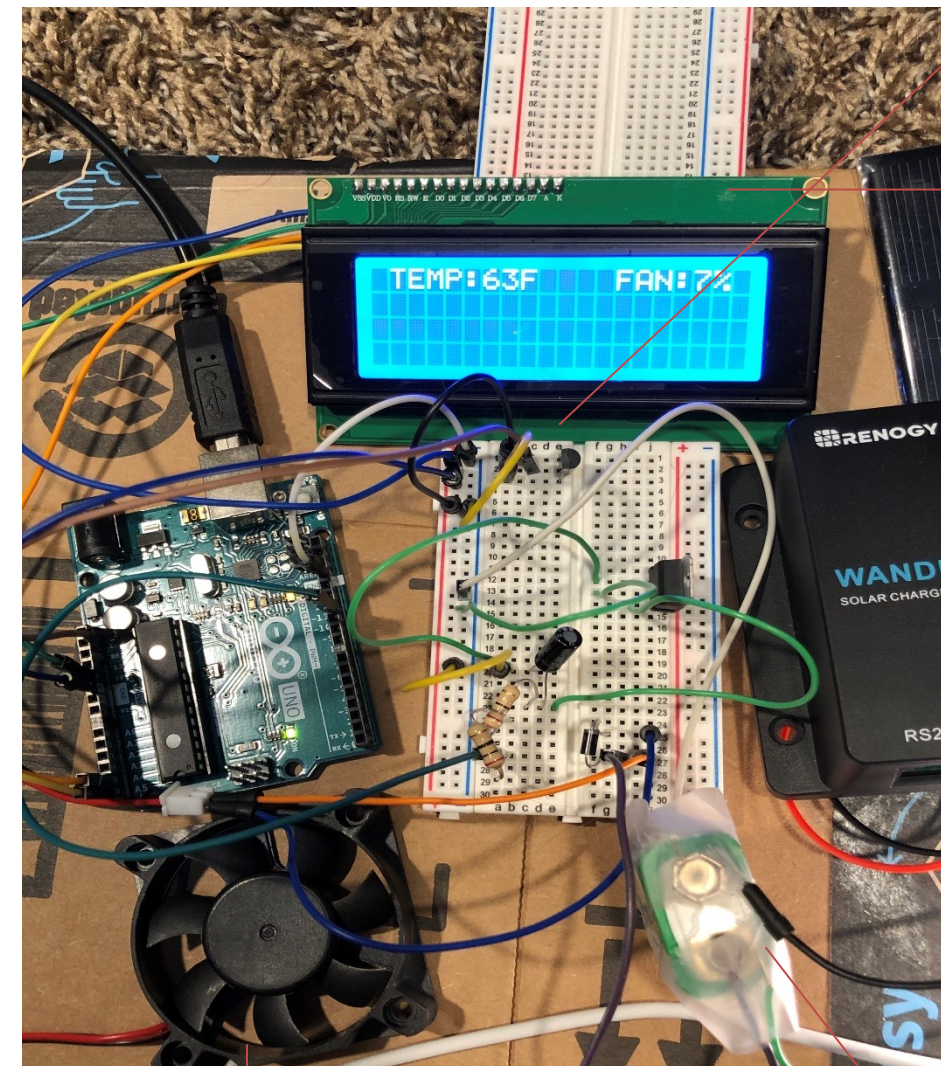


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BACKGROUND

There are a lot of automated fans that are already out there at this moment of time. But we are building a solar powered temperature sensor fan., specifically designe for tourists, archeologists, geologists, differently abled people and for normal people. overall fan is run fully on solar and it turns on and off based on the threshold temperature of the surrounding. Along with the fan are built in USB charger and a LED bulb.

Figure 1



Fan

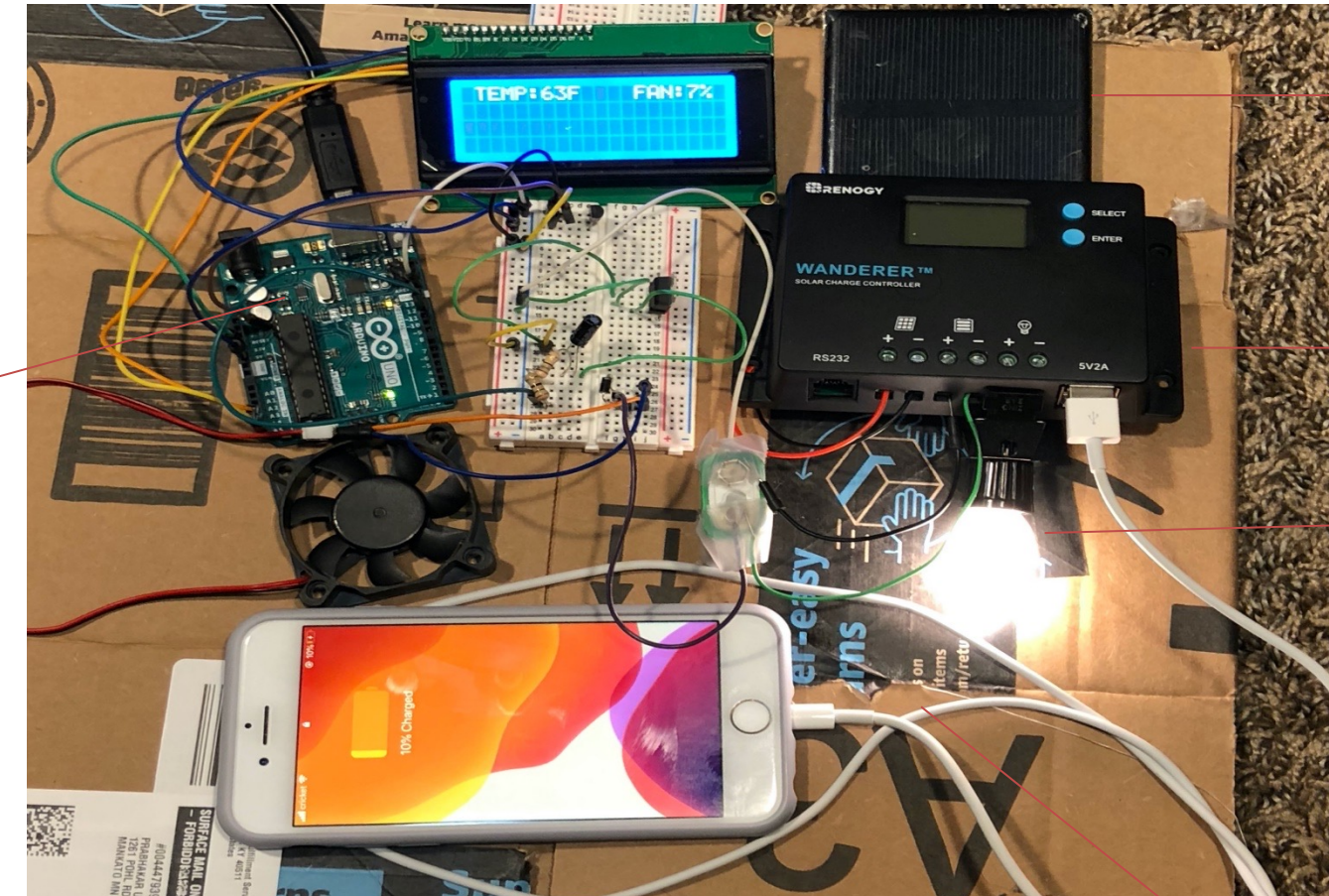
LM35 temperature sensor

Arduino LCD display

The **Arduino Uno** is a microcontroller board based on the ATmega328. It has 20 digital input/output pins, a 16 MHz resonator, a USB connection, a power jack, an in-circuit system programming (ICSP) header, and a reset button.



SYSTEM DESIGN



Solar Panel(12V/45mA):

This device is used to receive solar energy and is connected to the charge regulator

LED Light Bulb

Solar charge controller regulator

This device is used for recharging Li battery from solar power. It converts solar energy into electrical energy. It also detects 24V DC and 10A charging capacity. It has an inbuilt 5V 2A USB port for charging and lightning port as load.

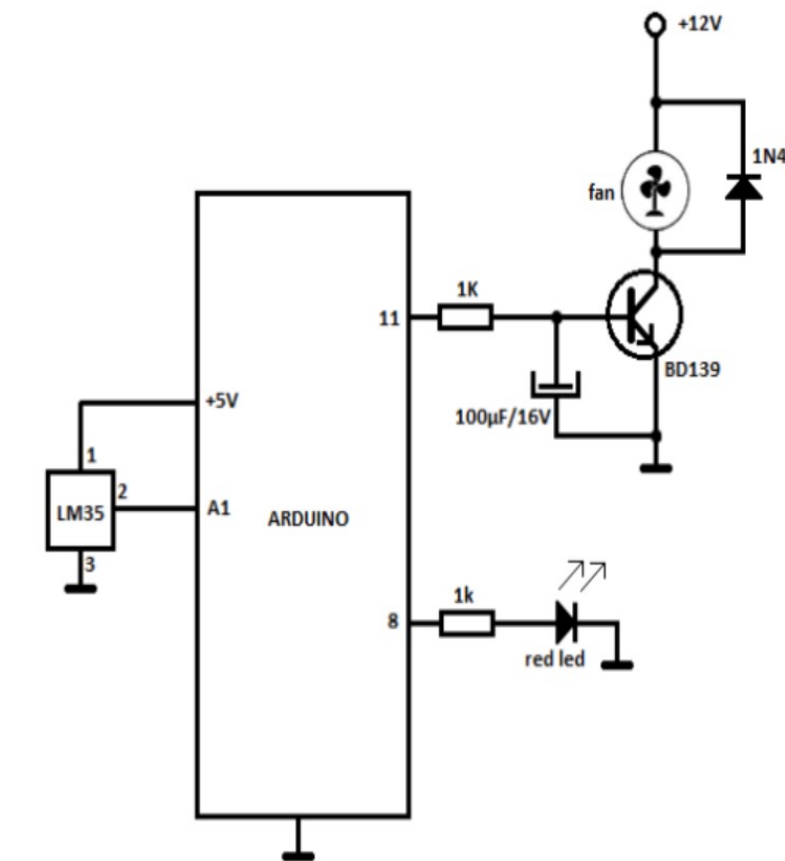
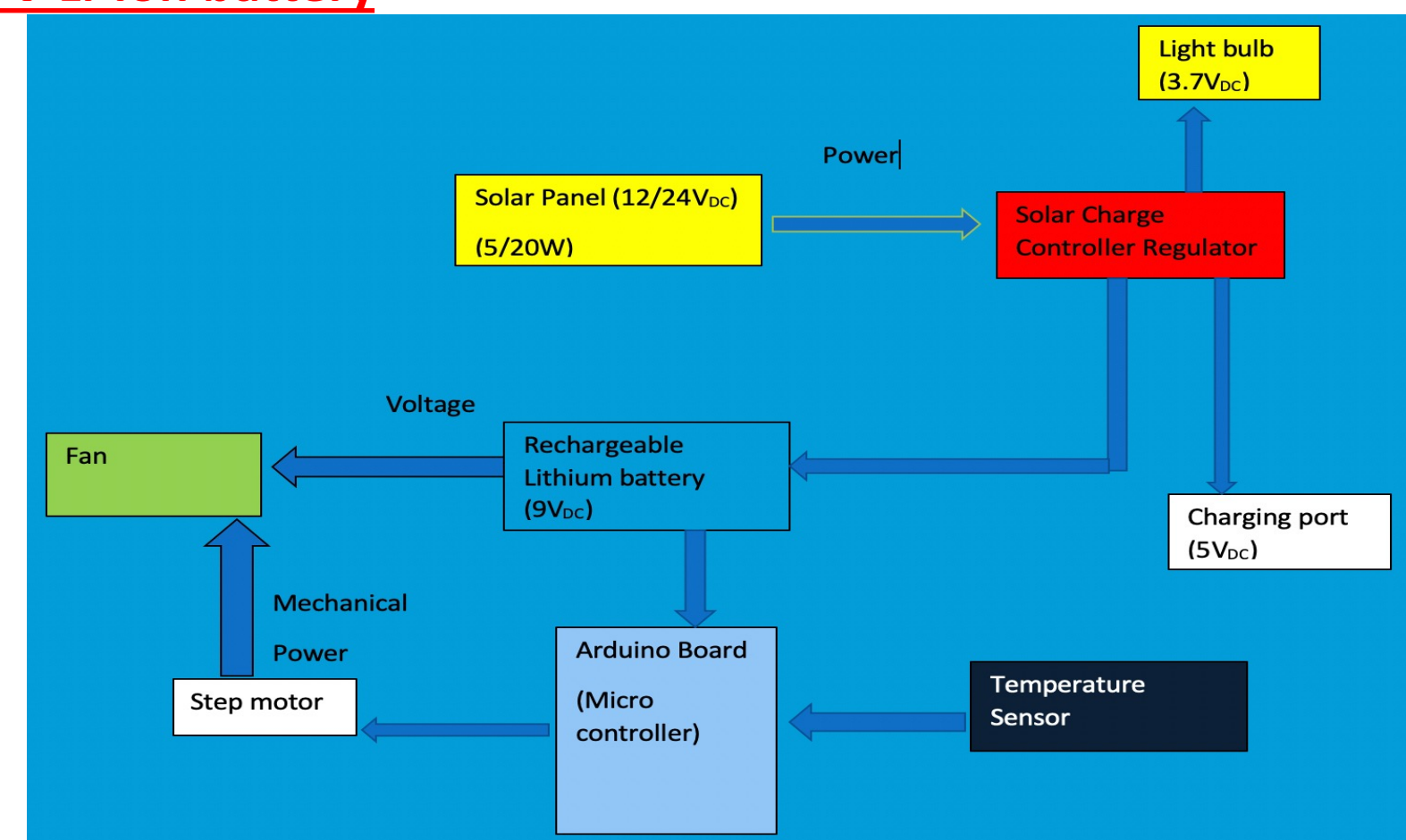


USB Charger

PROPOSED SOLUTION

The temperature sensor in our project is connected with Arduino board which is then connected to the fan via a stepper motor that will help convert electrical energy into mechanical energy. With the help of the solar panel in our design, we were able to power up the battery which will ultimately supply voltage to both the fan and the Arduino board. Medium scale solar power and a high voltage battery was used for our fan to run efficiently. Another reason of using more powerful solar and battery is that, we also have a USB Charging port built in on our circuit along with a light bulb attached to it. Since we did not want any complications, for instance, whenever we are charging the phone, there might not be enough power for the fan to turn on or the light bulb to glow. Hence in order to avoid such discrepancies, we used more powerful battery.

9V Li-Ion battery



FUTURE DIRECTION

- If GPS system can be added, it would be more handy for travelers.
- More sensitive sensors could be used for greater efficiency of the fan.
- Cell phone type batteries could be used to make our product weigh less thus making it more portable and efficient.
- Mass production of this prototype can be used in agricultural industries for cooling and temperature controlling purposes

REFERENCES

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CONTACT INFORMATION

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