

Peltier & Solar Based Portable Room Air Cooler System.

About This Project:

This project uses a Peltier Module as a cooling mechanism and some cooling fans for blowing air. This is just like the everyday air conditioner that we use. The only moving parts here are the PC fans.

We have used solar panels to power supply of our enter project. Solar is generating voltage by sun. We charge a battery through a charge controller and the battery is supplying power our project.

Air conditioning involves dehumidification and cooling of air. The process starts with dehumidification. Air at ambient conditions enters the dehumidifier where the humidity is extracted and collected in a tank. The air after passing through the dehumidifier is heated up which requires cooling. The heated air then is passed through cross flow heat exchanger. Water is stored in a sump equipped with a thermoelectric module to maintain the coolant temperature. Water is circulated through the heat exchanger where it absorbs heat from the air and flows back into the tank. Thus after rejecting heat to the water air is cooled and passed into the room.

Block Diagram:

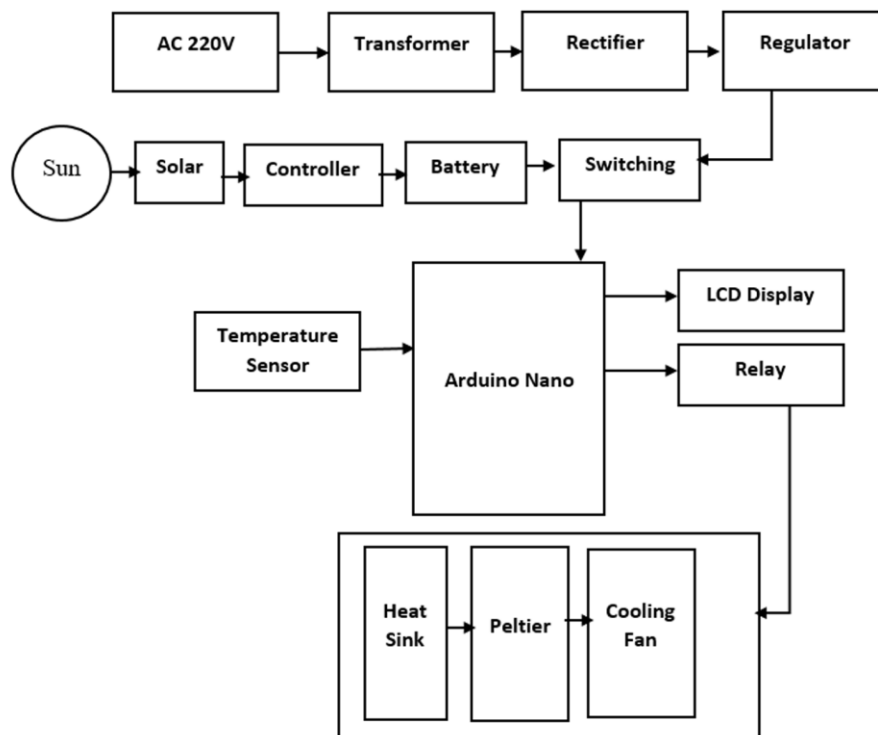


Figure: Block Diagram of Peltier & Solar Based Portable Room Air Cooler System.

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Required Instrument:

- Arduino Nano
- Battery
- Solar
- Peltier
- Water Block Heat Sink
- CPU Heatsink
- Temperature Sensor
- Relay
- LCD Display

Advantages:

- Relatively low investment required.
- Tool and maintenance costs are low.
- Renewable Energy.
- Environmentally Friendly.
- High Reliability.
- Renewable Energy.

Applications:

The project has a major application in the

- Relatively low investment required.
- This System Can be used as like Portable Room air cooler system.
- This System can be widely used in any industrial machine cooling system.

N.B: *Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.*

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