TEMPERATURE CONTROLLED LED

Required Components:-

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| SERIAL NO:- | COMPONENTS | QUANTITY |
| 1. | 9V Battery | 1 |
| 2. | 7805 | 1 |
| 3. | LM35 | 1 |
| 4. | LM358 | 1 |
| 5. | 10K 0hm | 3 |
| 6. | 1K Ohm | 3 |
| 7. | Variable Resistor 10K | 1 |
| 8. | LED | 2 |
| 9. | BC547 | 2 |

Description:-

First we see in below circuit diagram. There some IC is used like LM35 and LM358.

LM35 IC is also called temperature sensor. This sensor provides variable voltage at the output based on the temperature.

LM35 provides output in degree Celsius and can sense up to 150 degree Celsius temperature.

We have also used LM358 IC; it is an op-amp.

LM35 provides reference voltage for op-amp at pin 2 (which is also called reference voltage pin).

LM358 it is also voltage comparators, it compare two voltage and give output.

9v general purpose battery is used to power up the whole circuit and IC7805 is used to provide the regulated 5v supply to the circuit.

When temperature is below 50 degree Celsius then led 2 remain ON and led 1 is OFF.

When temperature is below 50 degree then output of LM358 remains LOW and q1 remains in OFF state and transistor q2 is ON state.

When temperature is beyond 50 degree Celsius, output voltage of LM35 at pin 2 also goes higher than 0.5volt. Output of LM35 is connected to pin 3 of op-amp LM358. Output of opamp LM358 (pin1) becomes high. Output is connected to base of transistor q1 also become ON and led 1 becomes ON.

