Bio-Measurements Report: Team 13.

Task 1: Application for temperature Measurement sensors.

Baby warmer System.

A) INTRODUCTION & HYPOTHESIS

Application: Baby warmer system

The goal of the baby warmer system is to provide a warm environment for newborn babies while they're being examined, imaged, or otherwise. The system monitors the baby's temperature and tries to keep it within a certain threshold (in case of the prototype it's ±0.1℃ of the optimal temperature (37.8℃)

The thermistor is placed in the ideal placement[1] for measuring temperature in newborn babies (the abdomen skin) in order to increase the accuracy of the system.

Used Components:

- A thermistor
- A 100W bulb (to act as a heat source)
- A 5v relay module to act as a switch for the lightbulb.
- Some wires and an Ohmic resistance (10K)
- Arduino Uno Board

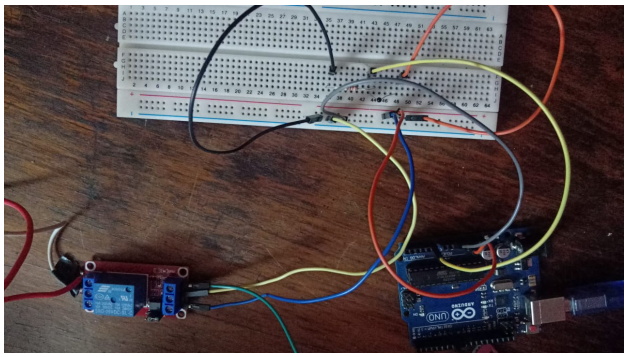
[1] https://pubmed.ncbi.nlm.nih.gov/28092317/

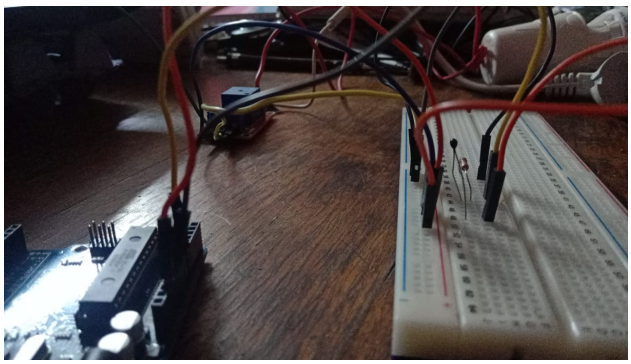
B) Why Thermistor?

1. Accuracy 0.1 °C
2. Sensor range is suitable for use.
3. Time response from 1 to 5 Sec
4. Cheap

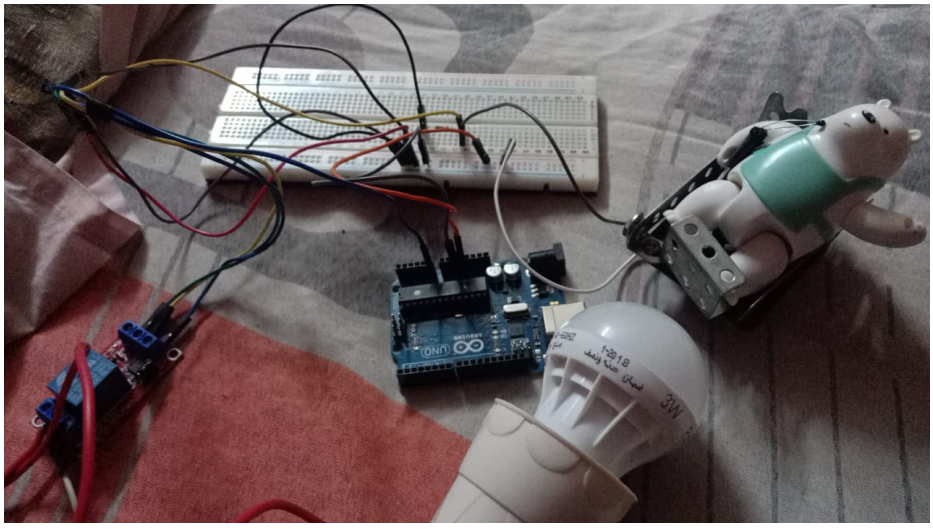
C) Implementation, prototype and simulation

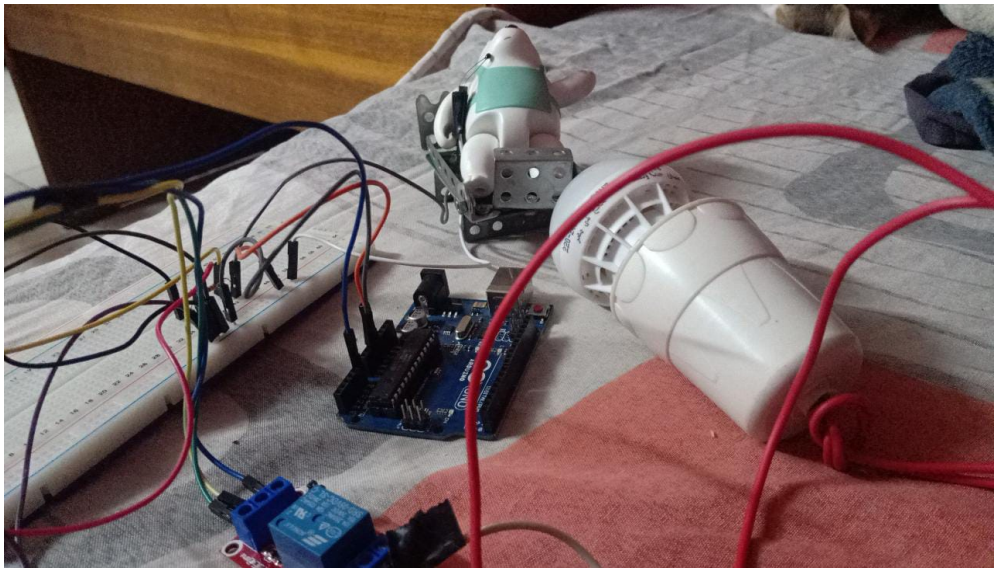
Implementation :





Prototype:





D) SCHEMATIC DIAGRAM