Smart Home Automation System

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Introduction

A Smart Home Automation System, redefining living spaces with cutting-edge technology. It control lighting and curtains with the LDR sensor, ensuring a personalized environment. The LM35 sensor optimizes climate control by adjusting fan opening based on room temperature. Elevate home security with the touch sensor, replacing traditional keys for modern and secure door access. Experience the future today – a smarter, connected, and energy-efficient living environment awaits!

Design

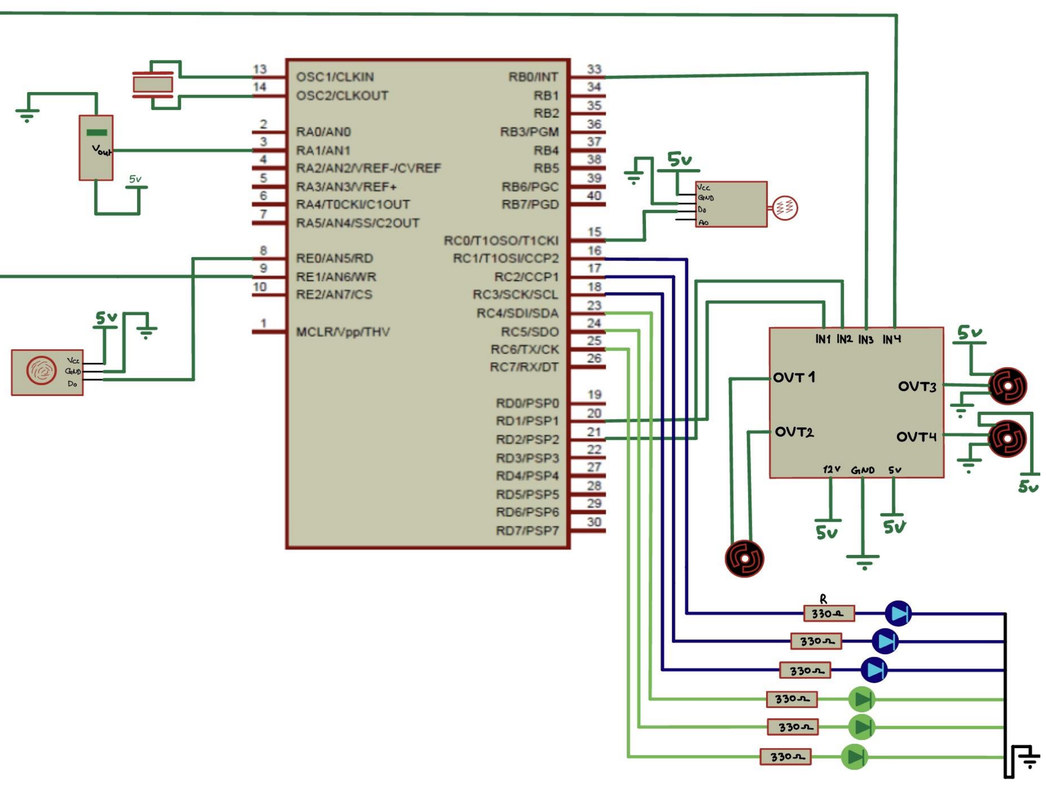


Figure 2 : Electric schematic design

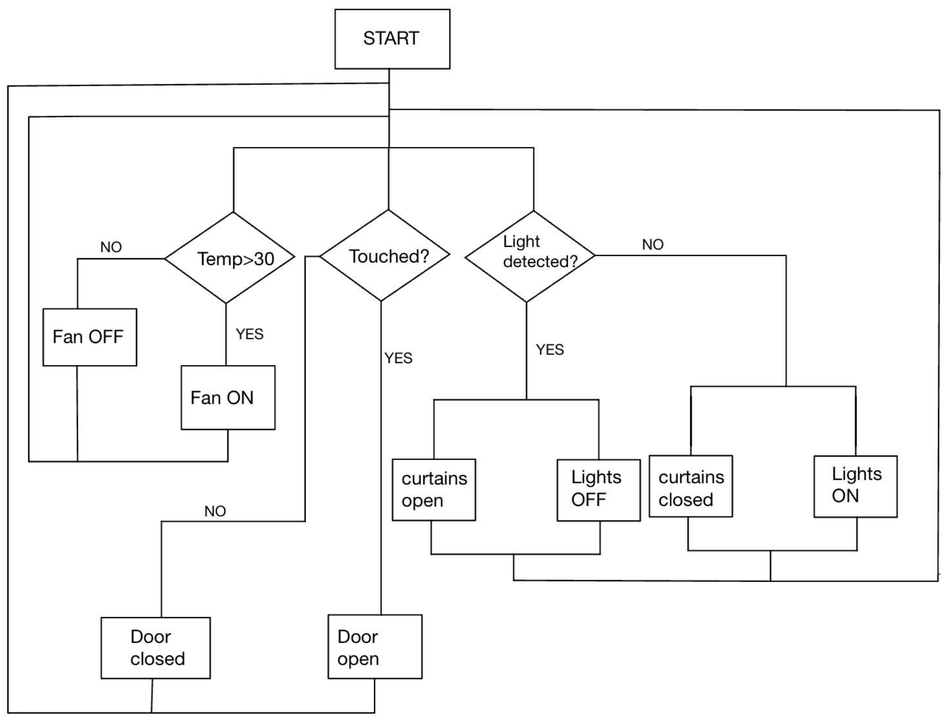
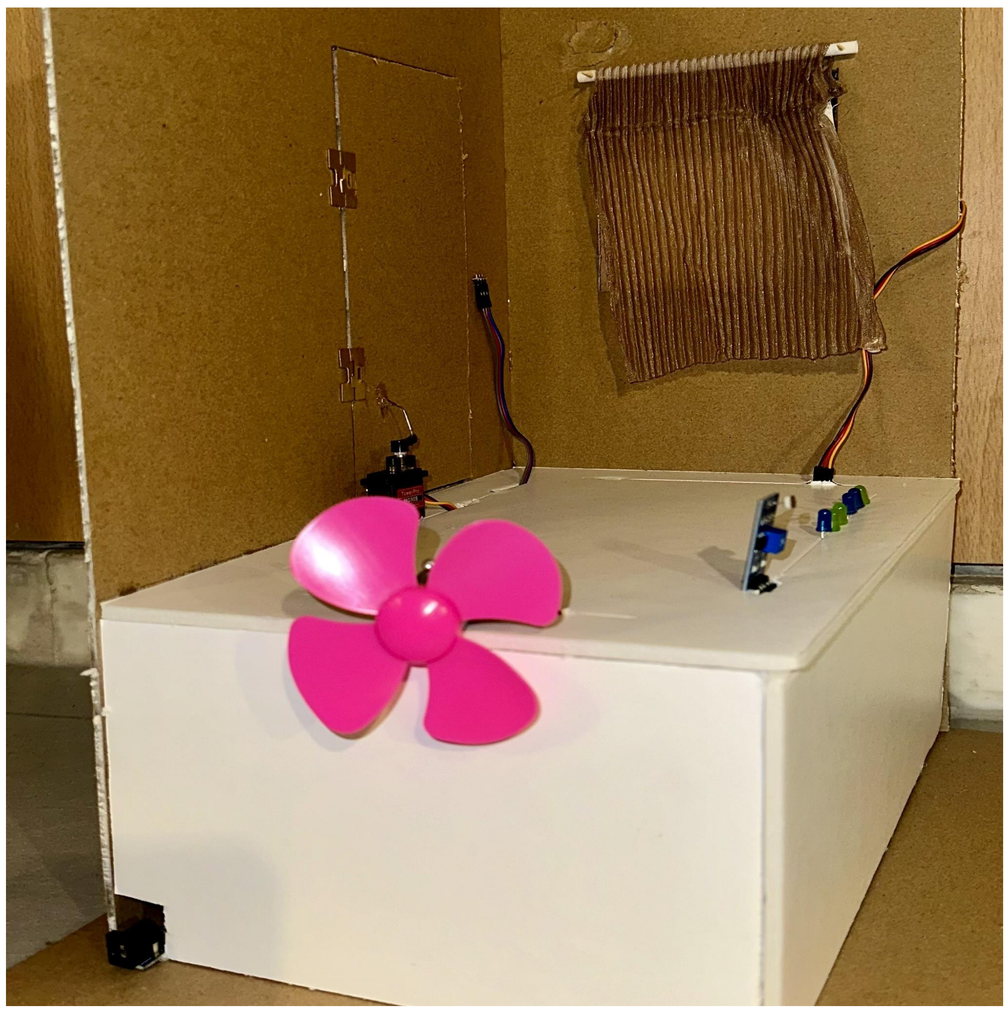
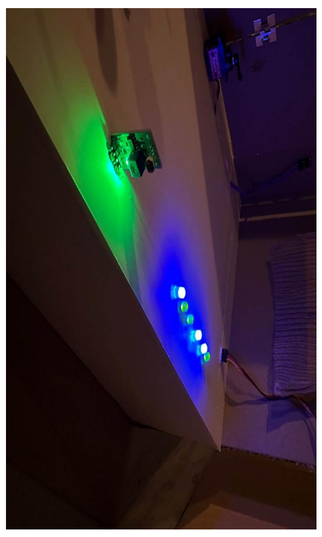
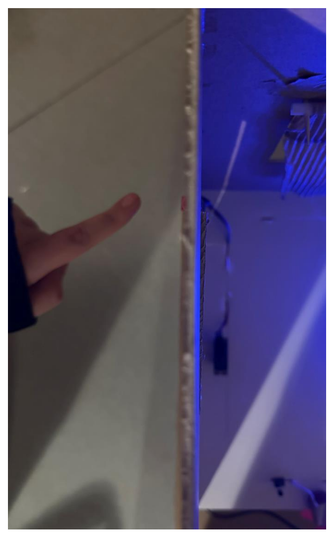


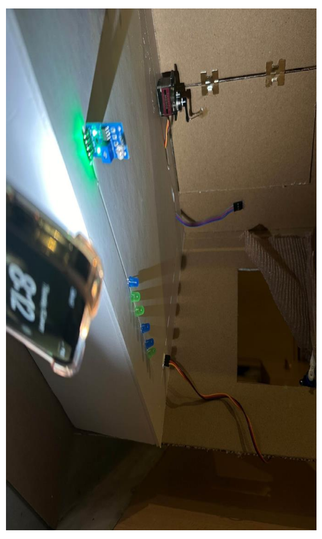
Figure 3: Software Flow Diagram

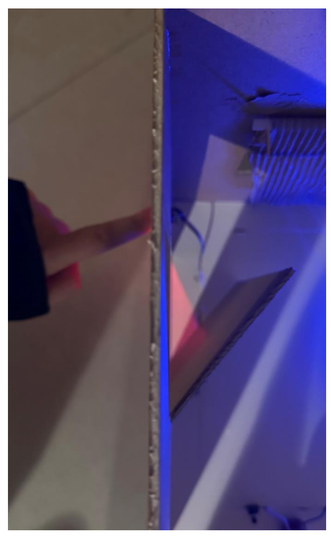
Results

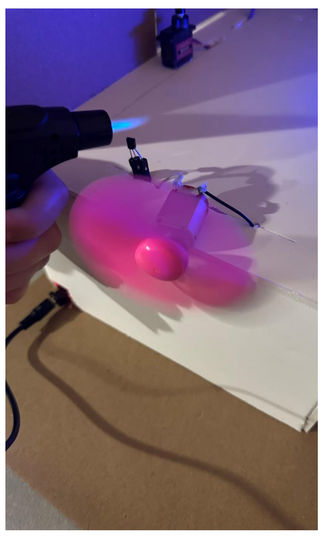












a) Light sensor b) Touch sensor c)Lm35

Here is the functionality for the three sensors:

a) If Ldr detects lights, the curtains will be opened and LEDs off
b) If touch detected, the door will be open, otherwise closed
c) If Lm35 detects temperature >30, Fan ON, otherwise OFF

Conclusion

Our smart home automation project, driven by a PIC 16F877A microcontroller, successfully implemented a sophisticated system for temperature regulation, curtain automation, and door management. The integration of sensors and actuators was seamless, emphasizing efficiency and sustainability. The user-friendly design and continuous refinement process position the project as a forward-looking solution, offering a glimpse into the potential of intelligent and adaptive living environments..