HOME AUTOMATION SYSTEM

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1. ABOUT

1.1 Abstract

Home automation is the ability to do tasks automatically and monitor remotely. Tasks include like tuning off lamp when nobody is present in the room, locking door, door opening automatically, monitoring temperature and etc. So, like this many tasks are done by home automation system. The main thing is that it gives a proper security. It saves time. It helps in avoiding wastage of electricity.

1.2 Features

1. It shall switch ON the light when someone is present in that particular place and switch OFF the lamp when no one is there in that place by using sensors.

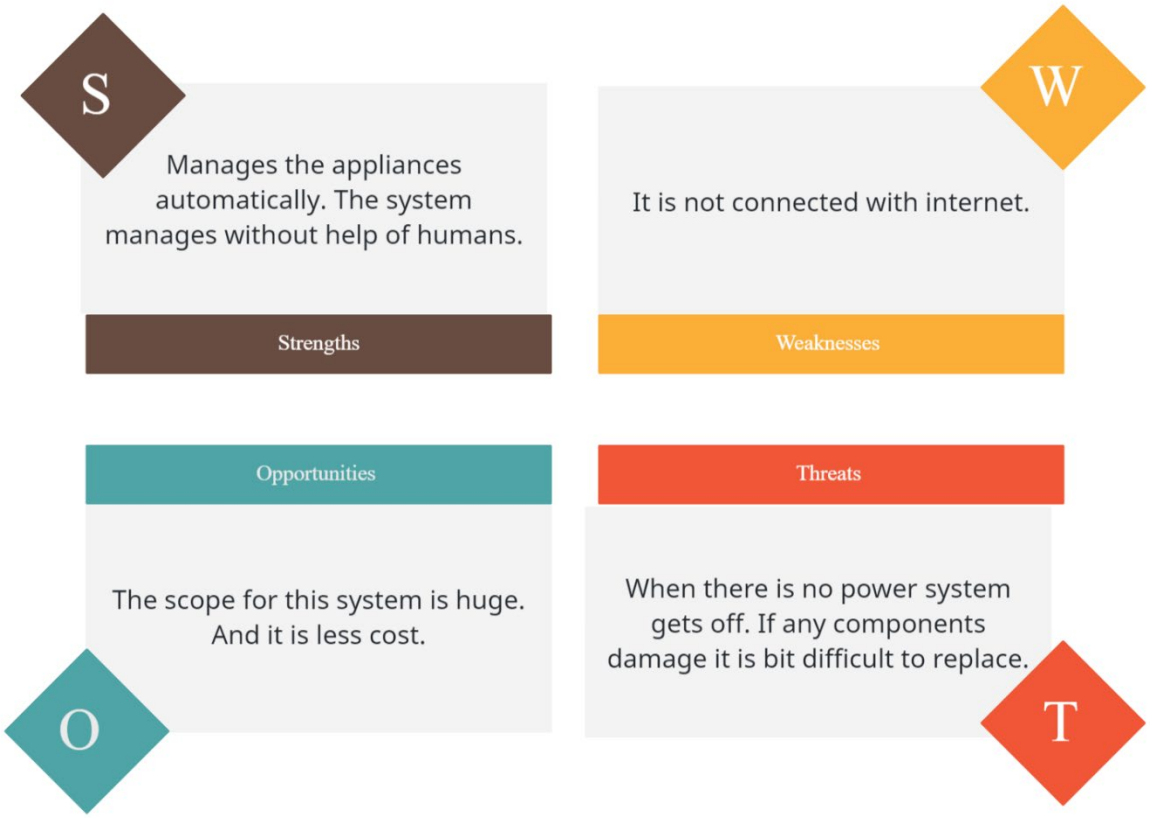
2. It shall switch ON the fan when someone is present in that particular place and switch OFF the fan when no one is there in that place by using sensors.

3. It shall indicate a signal when the temperature is not in normal level.

1.3 5W's & 1H

What	It is a home automation system.
Who	People who are in need of home monitoring system.
Why	It saves energy and automated one.
When	When we are at house and when we are not at the house. The system will automatically monitor the home appliances.
Where	Inside house
How	Through use of sensors, we achieve this.

1.4 Swot Analysis



2. REQUIREMENTS

2.1 High Level Requirement

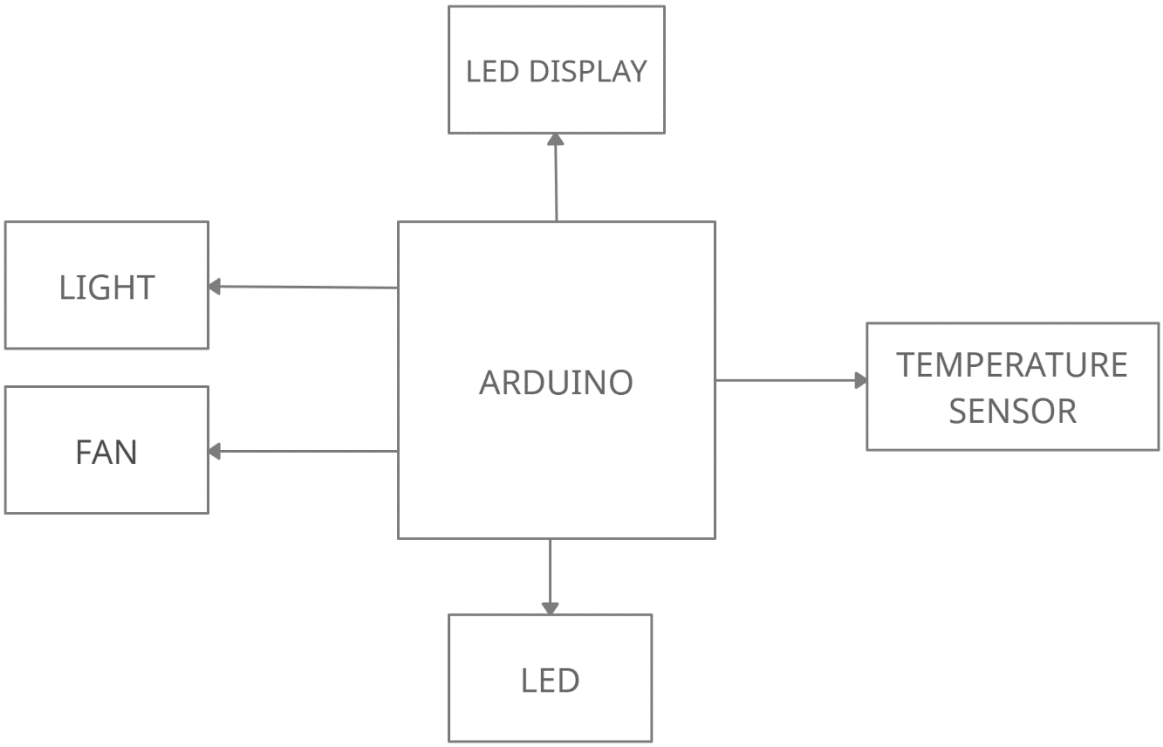
ID	Description
HLR1	User will be experiencing automatic turn on and off of lamp
HLR2	User will be experiencing automatic turn on and off of fan
HLR3	User will be able to experience the indication of increase or decrease in temperature
HLR4	User will be able to experience indication signal
HLR5	User will be able to monitor everything using a display

2.2 Low Level Requirement

HLR	LLR	Description
HLR1	LLR1	Usage of IR Sensor
HLR2	LLR2	By monitoring the temperature, the fan will be switched on automatically
HLR3	LLR3	By monitoring the temperature, the fan will be switched on automatically
HLR4	LLR4	LED will glow when there is decrease in temperature and when the lamp is on
HLR5	LLR5	LED display will display the lamp status and temperature status

3. BLOCK DIAGRAM AND COMPONENTS DESCRIPTION

3.1 Block Diagram



3.2 Components Description

Sensors:

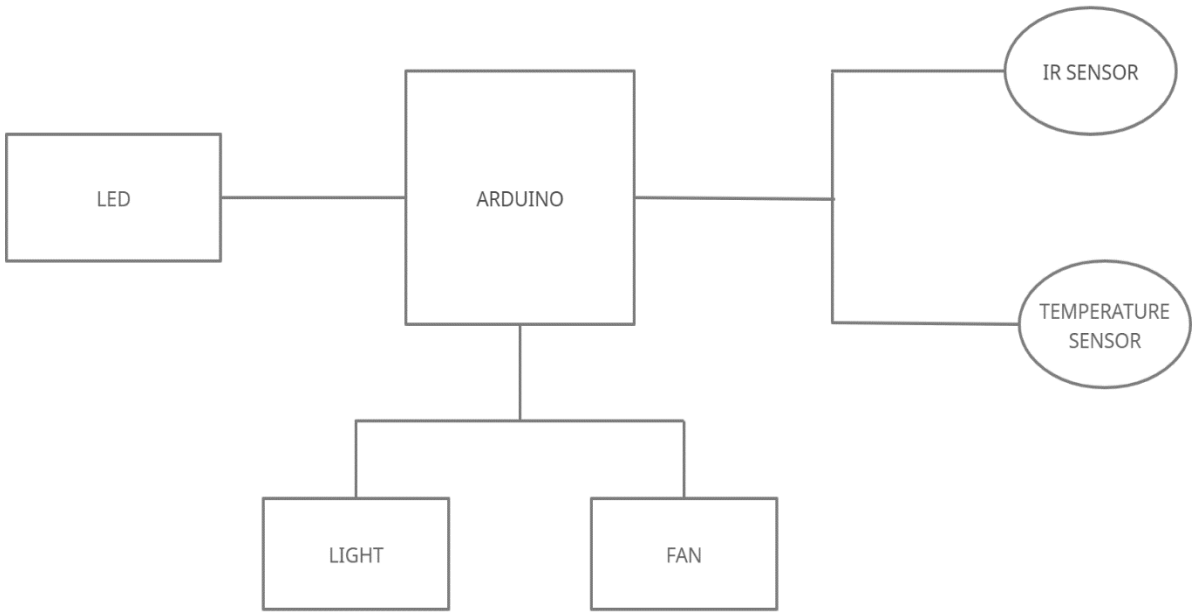
1. IR Sensor: It is responsible for switching on and off of lamp.
2. Temperature Sensor: It is responsible to monitor the temperature and warn when it is not normal.
3. Potentiometer: Basically, used to take input of temperature.

Actuators:

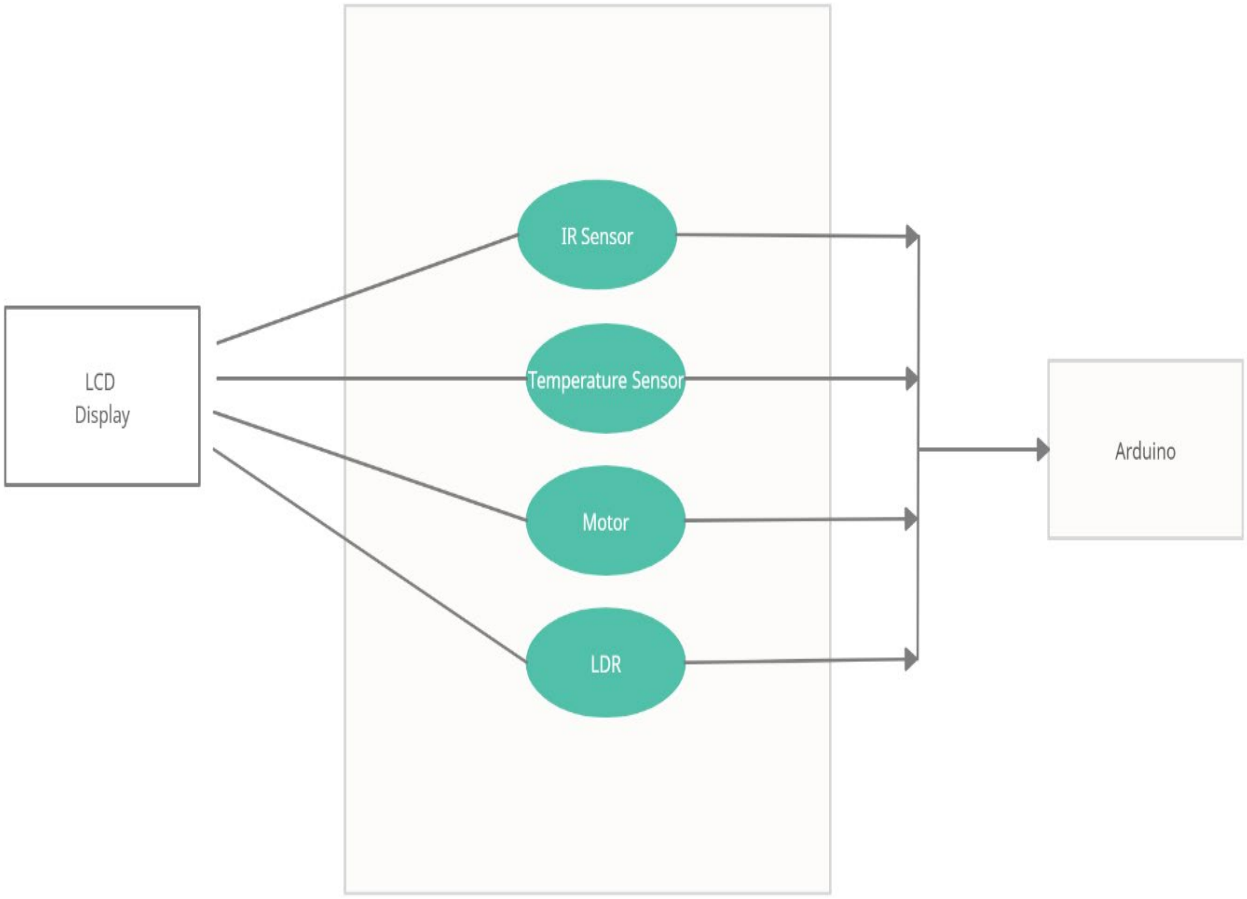
1. Fan: Its switching is depended on temperature rise.
2. Light: The lightening of the room is monitored by the lamp.
3. Display: It displays the temperature and lamp status.

4. ARCHITECTURE

4.1 Behaviour Diagram



4.2 Structural Diagram



5. TEST PLAN AND OUTPUT

5.1 Hight Level Test Plan

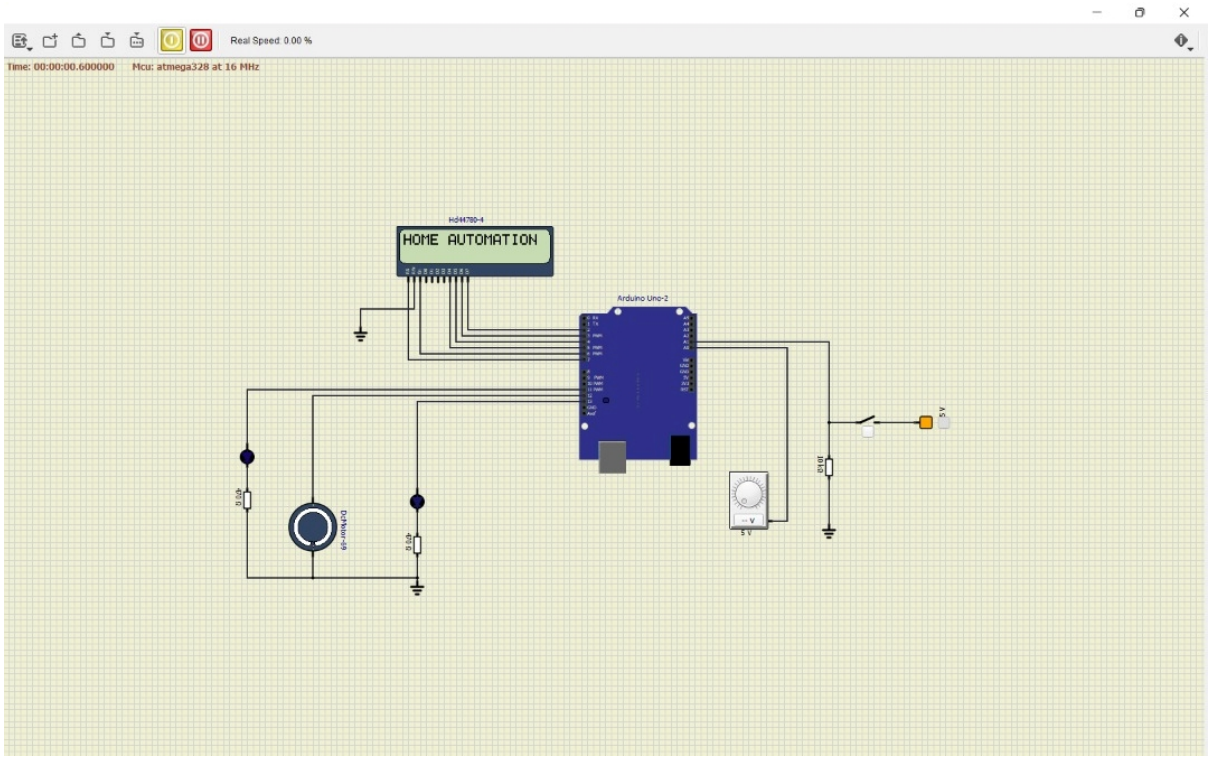
Test ID	Description	Expected Output	Actual Output	Pass/Fail
HLTP1	Lamp	100% LED	100% LED	PASS
HLTP2	Fan	Should be on when temperature is high	Should be on when temperature is high	PASS
HLTP3	LED	Should indicate when temperature is low	Should indicate when temperature is low	PASS
HLTP4	Temperature	When it is high fan will run and when it is low warning LED will glow	When it is high fan will run and when it is low warning LED will glow	PASS

5.2 Low Level Test Plan

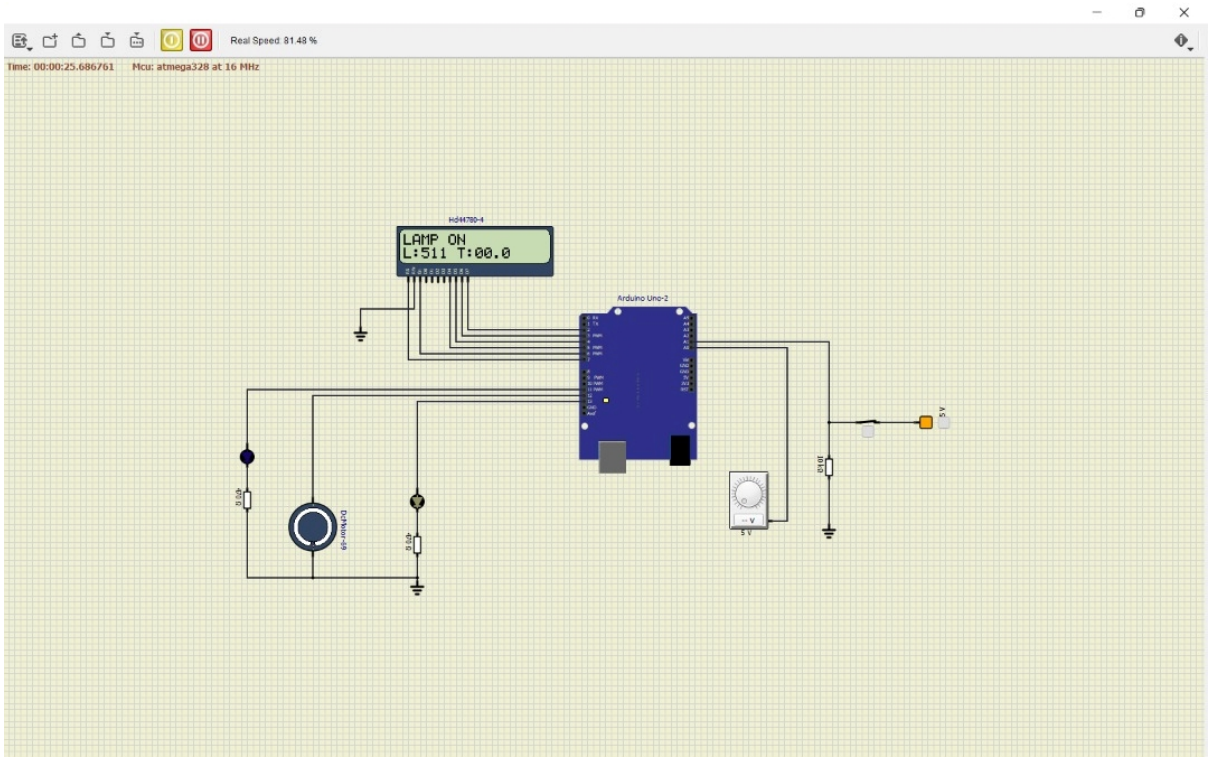
HLTP	LLTP	Description	Input	Expected Output	Actual Output	Pass/Fail
HLTP1	LLTP1	Lamp	200Lux(User) 0Lux(LDR)	LED should glow	LED should glow	Pass
HLTP2	LLTP2	Fan	When temperature is between 35°C - 50°C	Fan should be on	Fan should be on	Pass
HLTP3	LLTP3	LED	When temperature is between 1°C - 10°C	LED should glow for indication	LED should glow for indication	Pass
HLTP4	LLTP4	Temperature	1°C - 10°C	LED should glow for indication	LED should glow for indication	Pass
HLTP4	LLTP4	Temperature	35°C - 50°C	Fan should be on	Fan should be on	Pass

6. OUTPUT

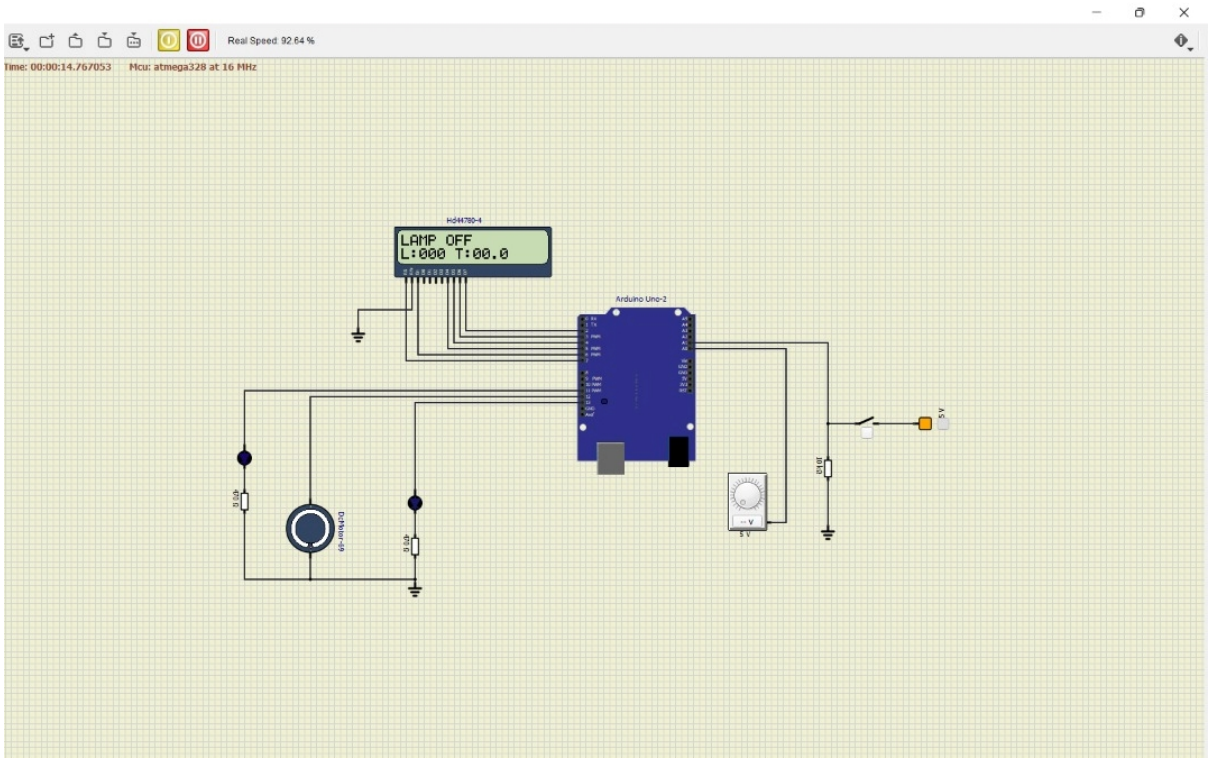
1. When system initially starts:



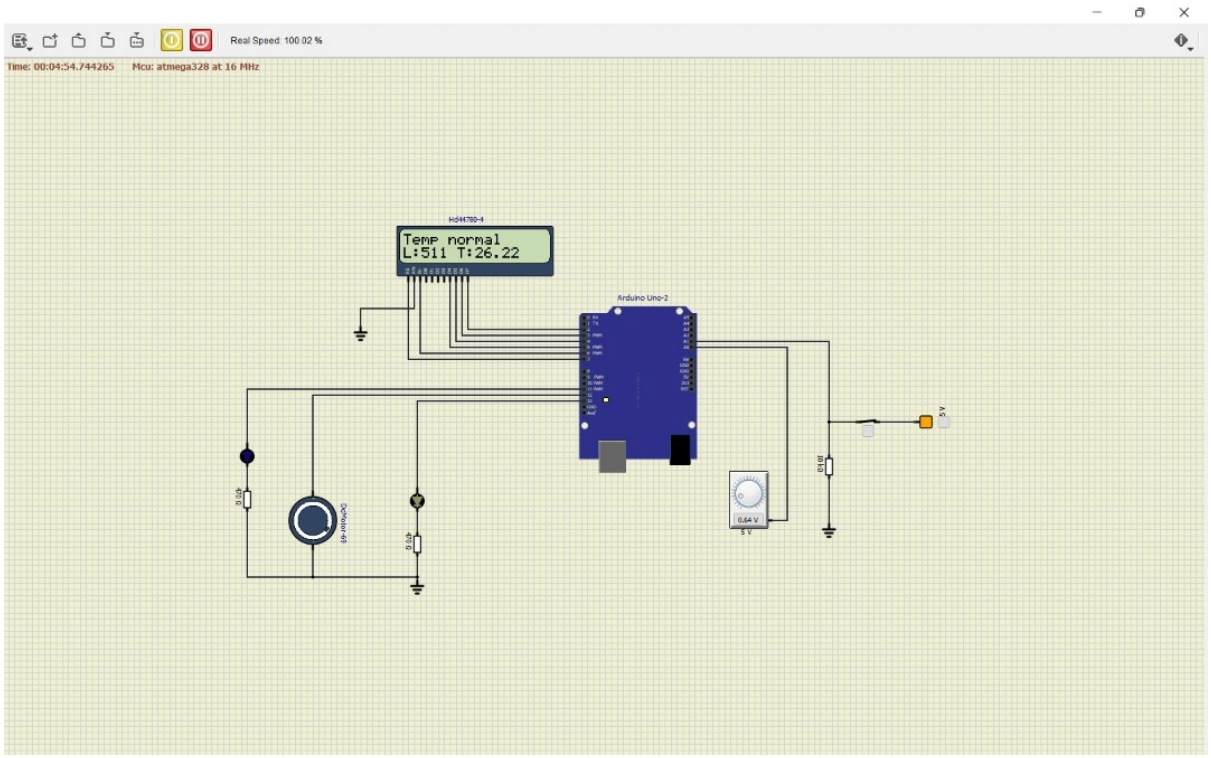
2. When lamp is ON:



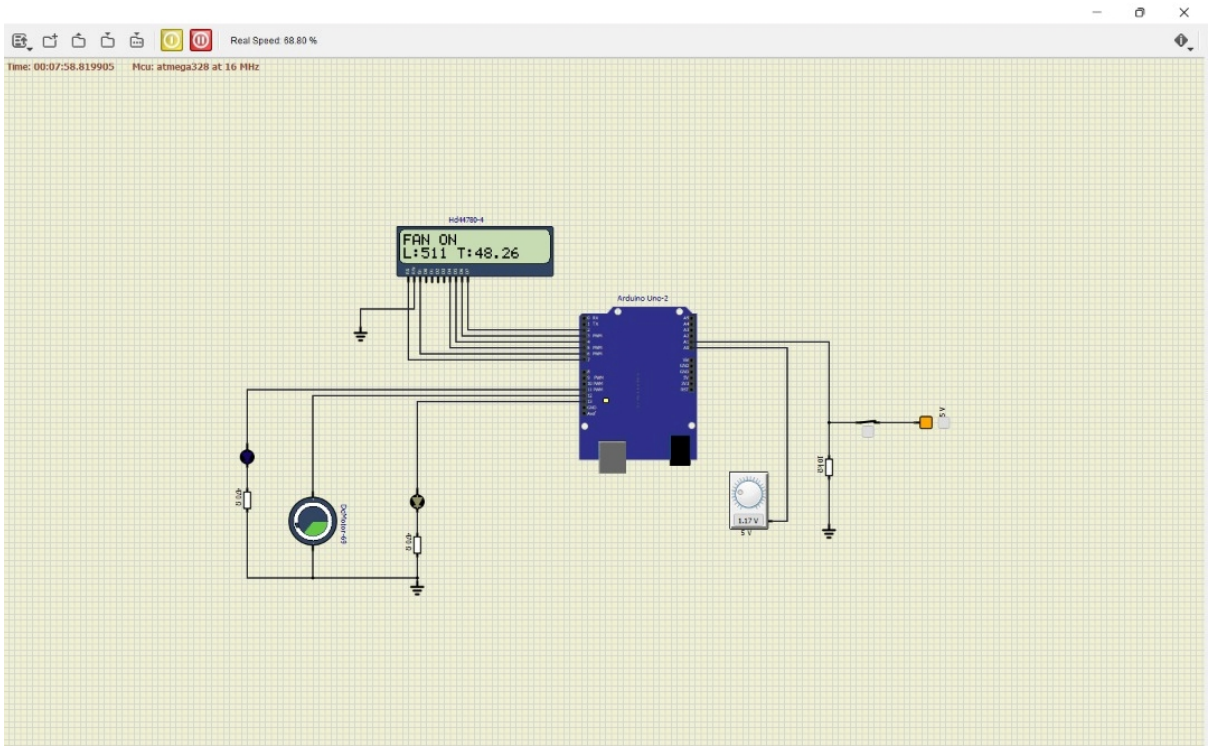
3. When lamp is OFF:



4. Normal temperature:



5. When fan is ON (due to rise in temperature):



7. APPLICATIONS

It can be used in educational institutions.

It can be used in offices.

It can be used in working places.

It can be used in all places.