

Design of Automatic Temperature Detection and Hand Sanitizer Using ARM STM-32

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Abstract :An Automatic hand sanitizer dispensing machine is basically used for automatic sanitization and temperature detection without contact. an automated contactless sanitization machine is very useful in covid 19 situation with temperature detection machine which is now a day's very useful in the hospital offices colleges and many more places. as we know that corona virus are very fast transferrable by touch and contact In this Automatics sanitizer machine we use contactless MLX90614 sensor and ultrasonic sensor and LCD Display .

IndexTerms - Temperature sensor MLX 90614, Ultrasonic Sensor, ARM STM-32.Solenoidal valve.

I. INTRODUCTION

The biggest prevention of coronavirus is that we should keep sanitizing our hands continuously, so keeping this in mind, we have designed an automatic sanitizer machine in which when any person brings his hand below the automatic sanitizer machine, he will After sensing the hands using Ultrasonic sensor, the sanitizer machine will be turned on and the sanitizer will come on his hands from the nozzle and sanitization will happen. Then after this the temperature of that person will also be seen by using Temperature sensor MLX 90614, if the temperature is in the normal range, then a OK message will come on the LCD. If that temperature is more than the normal day, then in that case an alert message will be displayed on the LCD. Then in that case an alert message will appear on the LCD

II. OBJECTIVE

The main objective of this project is that we have to stop the corona virus from growing, if we do proper sanitization, then the corona virus will not reach from one hand to the other.

III. LITERATURE SURVEY

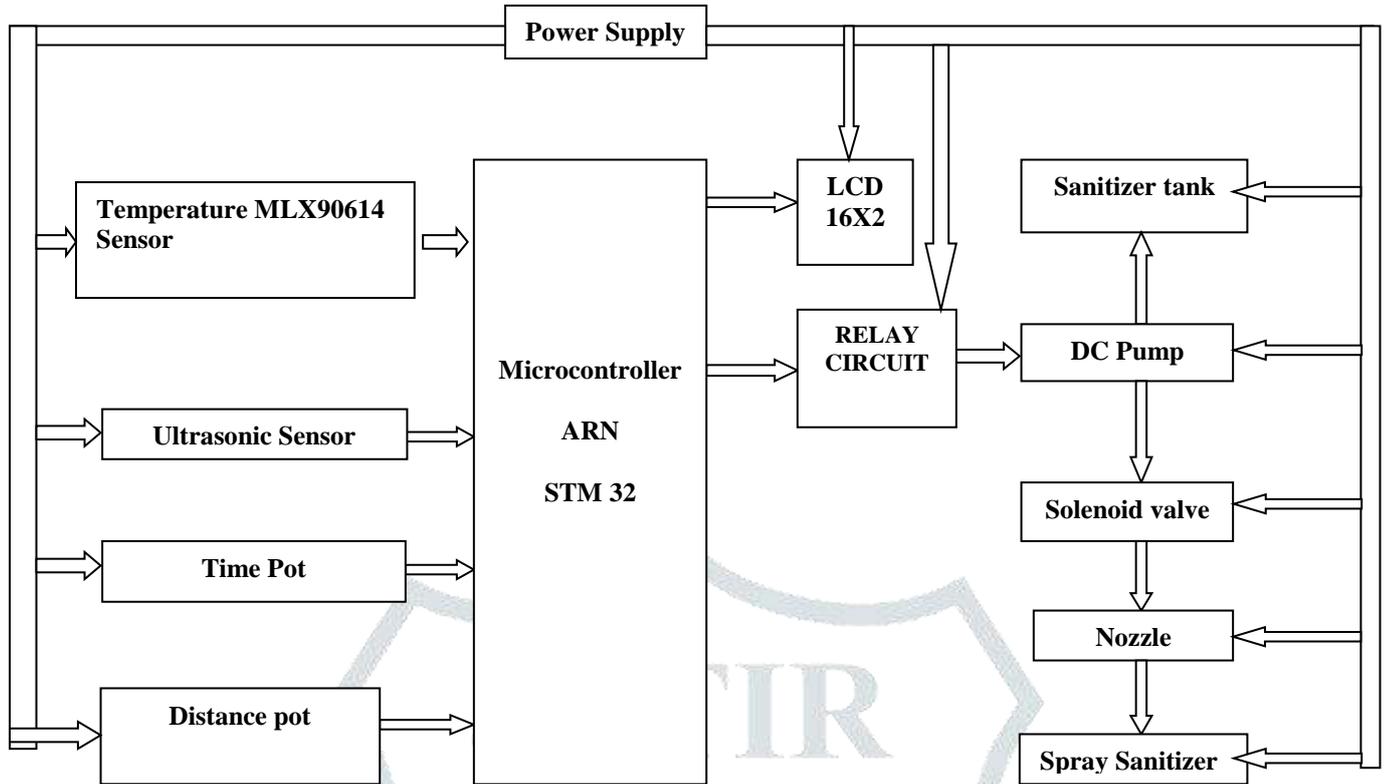
We studied a lot of research papers and after studying in it, we came to understand that in the research done in all these research papers, we got some new ideas, continuing the same; we changed the hand sanitizer machine to automatic hand sanitizer machine. After reading the research papers together, we got some ideas like that whenever we bring you down in the automatic hand sanitizer machine, how much should be kept more or less the range of ultrasonic sensor, together with another idea came that We can measure the temperature with the help of temperature sensor in the automatic sanitizer machine whether it is in the normal range or not, if it is not in the normal range, then we can give an alert on the display.

IV. SYSTEM DESCRIPTION

We have used micro controller ARM STM 32 in our project on which input is connected temperature sensor, ultrasonic sensor, time port is connected in distance output port of microcontroller connected to LCD 16 X 2 and relay connected to pump and pump is connected to tank and pump connected to solenoid valve



VII. BLOCK DIAGRAM

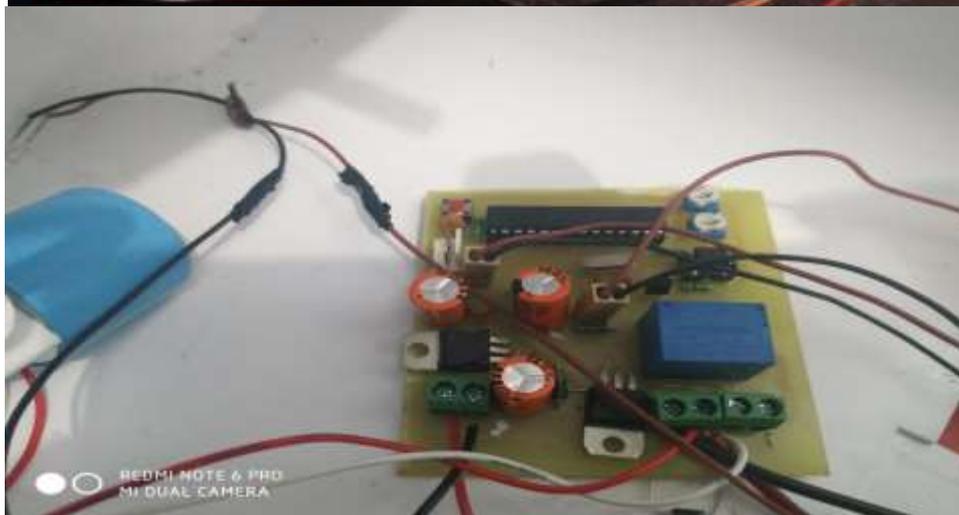


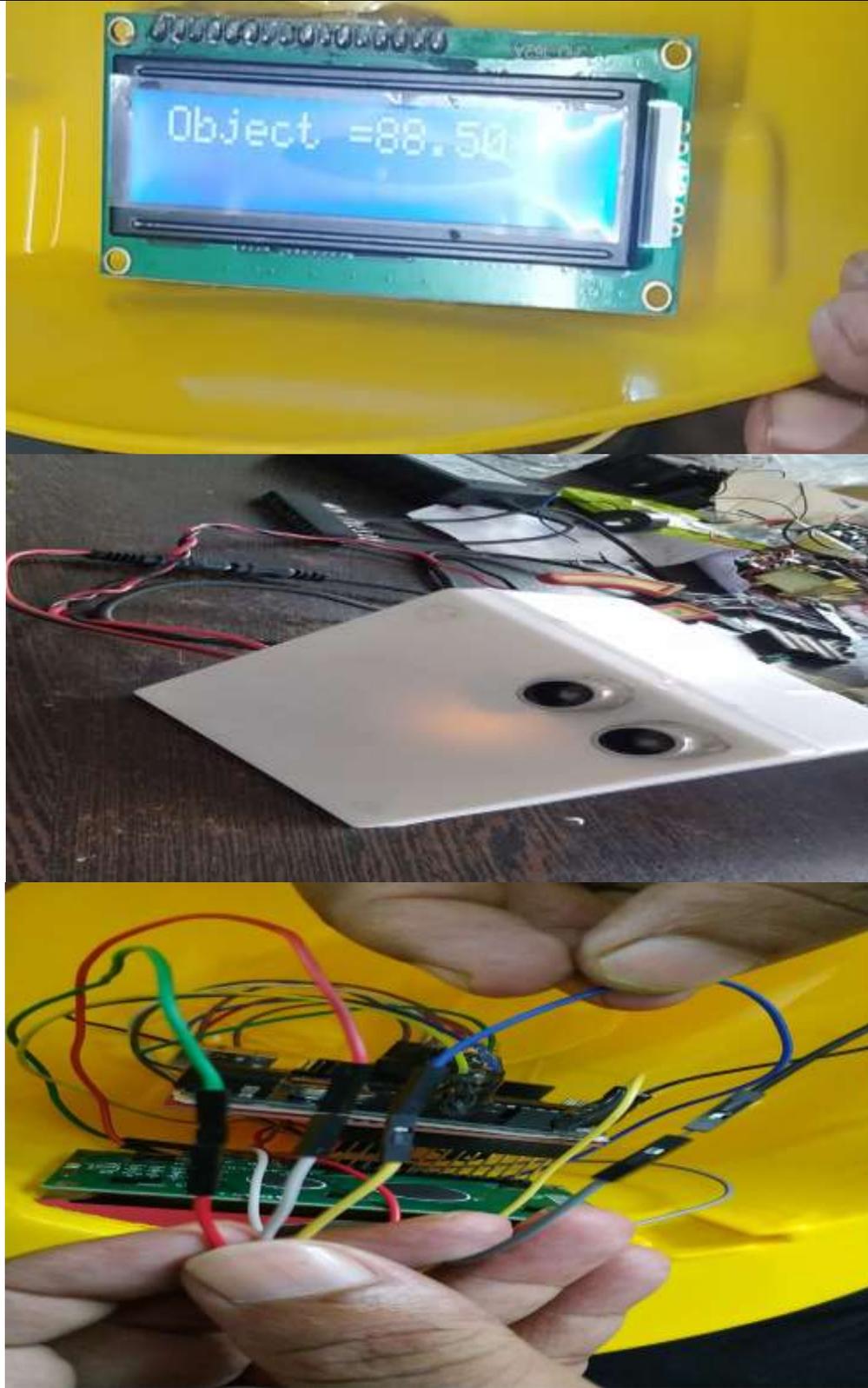
V. LIST OF COMPONENT

Name of Component	Model Number/Type
Microcontroller	ARM STM-32
Temperature Sensor	MLX90614
Ultrasonic Sensor	HC-SR-04
Time Pot	Pot-10k
Distance Pot	Pot-10k
LCD	16X2
Relay	Zf1 12
DC Pump	12V/amp
Tank	
Solenoid Valve	Hero-5521
Nozzle	Brash Nozzle
Spray	

VI. WORKING

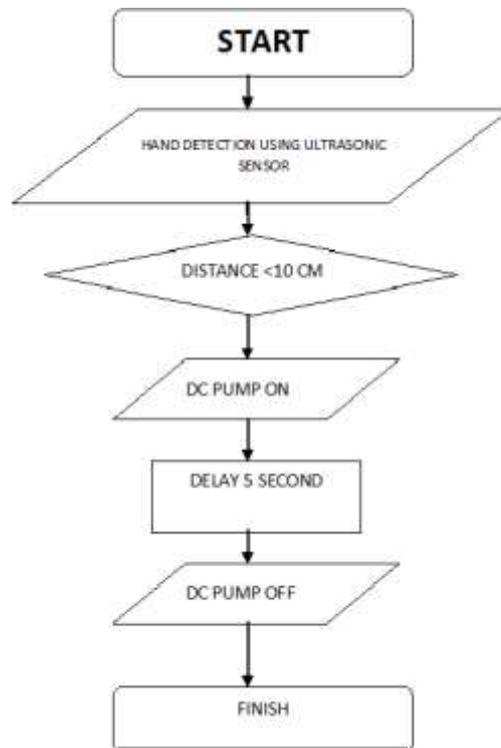
The most important part in working in Automatic Hand Sanitizer is that power We have provided power supply here from 12 volt 2 amp adapter. As soon as we connect the adapter, then 12 volt supply will be connected to the relay, pump, and solenoid and these three components Now we will activate after that convert 12 volt supply into 5 volt with the help of voltage regulator IC 7805, this 5 volt supply will be connected to a microcontroller, LCD, temperature IC, ultrasonic sensor, and all these will be activated. Now The power supply is connected in our circuit and the temperature sensor and ultrasonic sensor will work together as soon as a person comes in front of the temperature sensor, then the temperature will be measured in it and if the temperature is in the normal range then the OK message will be displayed on the LCD and If the temperature is not in the normal range, it will generate an alert message there and as soon as the hands come in the range of the ultrasonic sensor, after detecting the sensor, it will be sent to the microcontroller.and the sanitizer pump sanitization will start through the microcontroller And as long as there will be sanitization, as long as there will be objective detection







VIII. FLOW DIAGRAM



VII. CONCLUSION

Based on the testing result and discussion, it can be concluded that the results of the automatic hand sanitizer testing can run smoothly with a minimum detection error of transferring data. Using Ultrasonic Sensor Object Detect Perfectly And Hand Sanitizer Done Smoothly With Minimum Error And Temperature Sensor Is Also Work Perfectly And Measure Temperature Accurate

VIII. REFERENCES

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