AUTOMATIC HAND SANITIZER DISPENSER USING ARDUINO

AIM:

Design and Development of Automatic hand sanitizer dispenser using Arduino.

PURPOSE:

Over the last few months world suffering with covid-19. Which spreads through contact of humans each other, Especially this contact through hands. To eliminate this we have to use sanitizer on hands to protect from covid-19 virus. There are so many kinds of sanitizer process, but all those are again contact based and chance of getting virus from that. Here we suggest contactless sanitizer dispenser. Here project title is automatic hand sanitizer dispenser using Arduino.

DESCRIPTION:

This project includes IR sensor which is connected to Arduino digital pin. Solenoid controlled by relay which is connected to Arduino digital pin. 10K potentiometer interface with Arduino analog pin

WORKING:

In this project IR sensor can detect user hand while placing bottom of dispenser unit. Here dispenser unit is a plastic tub which is placed according to alignment. When IR sensor detects hand, then it sends signal to Arduino. Then Arduino sends ON signal to relay and solenoid valve will open. Here we can set dispensing amount of sanitizer by 10K potentiometer. Analog values will vary when 10k potentiometer varied. These values will displaying on 16x2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller   :   Arduino Uno

LCD   :   16X2 LCD Display

Crystal   :   16 MHz

Solenoid Valve   :   12V DC Electromagnetic Type

IR Sensor   :   DC 5V

Relay   :   12V DC Electromagnetic
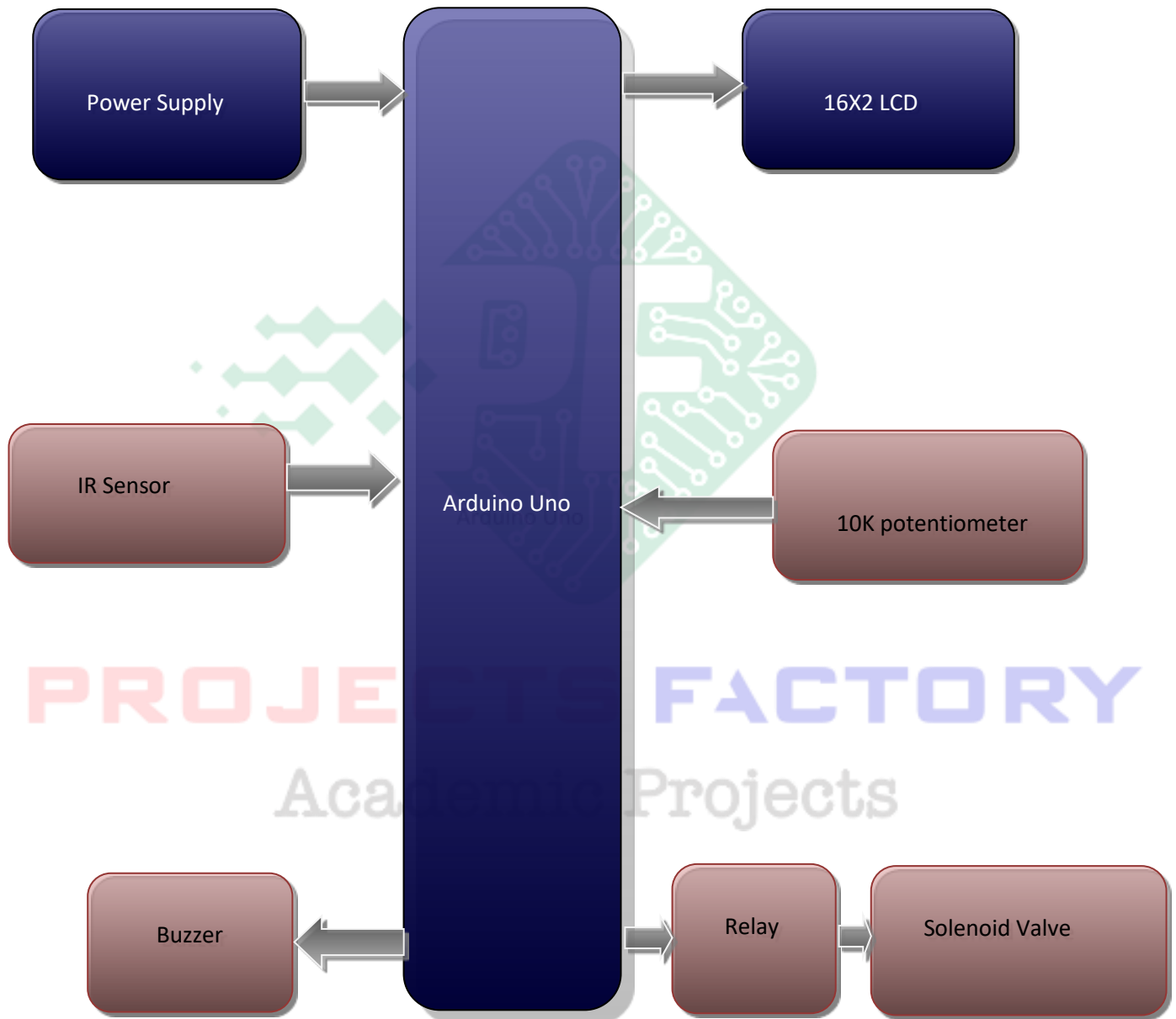
Buzzer   :   DC 5V

Power Source   :   12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

Proteus based circuit diagram

APPLICATIONS:

- ➢ Hand sanitizer Applications
- ➢ Liquid dispensing Applications

BLOCK DIAGRAM:

```
  Power Supply  ──▶  ┌──────────┐  ──▶   16X2 LCD
                     │          │
  IR Sensor     ──▶  │ Arduino  │  ◀──  10K potentiometer
                     │   Uno    │
  Buzzer        ◀──  │          │  ──▶  Relay  ──▶  Solenoid Valve
                     └──────────┘
```

POWER SUPPLY BLOCKDIAGRAM:

| Step down Transformer | → | Bridge Rectifier | → | Filter | → | Regulator | → | Output |

INTERFACES COVERD:

- IR sensor and Solenoid valve interface