HAND SANITIZER WITH UV LIGHT PROTECTION

AIM:

Design and Development of Hand sanitizer with UV light protection.

PURPOSE:

Over the last few months world suffering with covid-19. This 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. Along with sanitizer dispensing, here we read number of visitors used sanitizer. 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 along with UV Light protection. Here project title is Hand sanitizer with UV light protection.

DESCRIPTION:

This project includes IR sensor and UV LED which are 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. While Sanitizer dispensing UV LED will be ON and it can protect from so many virus. Virus got killed with UV rays. Here we can set dispensing amount of sanitizer by 10K potentiometer. Analog values will vary when 10k potentiometer varied. These values will display on 16x2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
LCD	:	16X2 LCD Display
Crystal	:	16 MHz
Solenoid Valve	:	12V DC Electromagnetic Type
UV LED	:	365nm - 395nm
IR Sensor	:	DC 5V
Relay	:	12V DC Electromagnetic
Buzzer	:	DC 5V
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

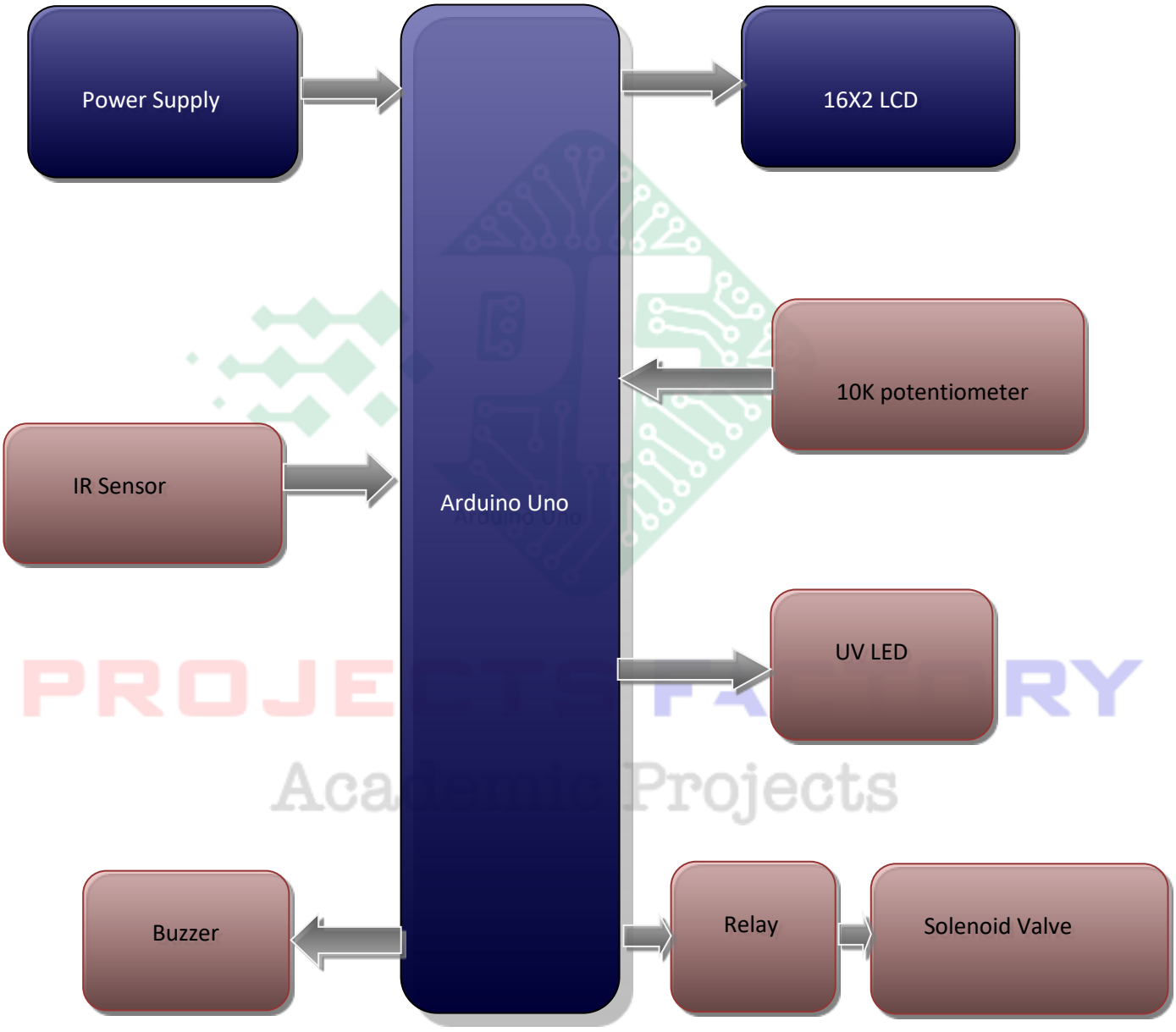
Arduino IDE

Proteus based circuit diagram

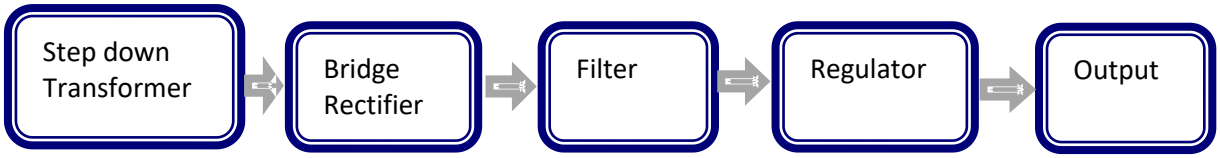
APPLICATIONS:

- Hand sanitizer Applications
- Disinfection Applications
- Liquid dispensing Applications

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- IR sensor, UV LED and Solenoid valve interface