SMART SANITIZER WITH FACE RECOGNITION ATTENDANCE AND TEMPERATURE READING

AIM:

Design and Development of Smart Sanitizer with face recognition attendance and temperature reading.

PURPOSE:

Technology grows every day without any limitations. When applied into real time scenario we know the power of it. Especially, in Covid pandemic situation technology helps a lot in various ways like hospital equipment, medicine manufacturing, contactless temperature reading equipment, sanitizers and many more. By embed multiple sensors together brings lot of advanced applications. Here we want to design a smart sanitizer system with face recognition attendance and temperature reading. This system has multiple features like sanitizer dispensing, face recognition based attendance and information stored into SD card along with contactless temperature reading for body temperature monitoring.

DESCRIPTION:

Arduino and ESP32-CAM connected with each other through UART port. DS1307 and MLX90614 connected to Arduino i2c port. SD card adaptor connected to Arduino SPI port. ESP32-CAM have inbuilt WIFI, camera module and SD card mounting provision. DC pump controlled by h-bridge driver and connected to Arduino digital pins.

WORKING:

It will dispense sanitizer when IR sensor activated by hand. Also, by showing face in front of camera we can do attendance process and information stored in SD card along with temperature and date time details. All this information displaying on LCD.

TECHNICAL SPECIFICATIONS:

HARDWARE:

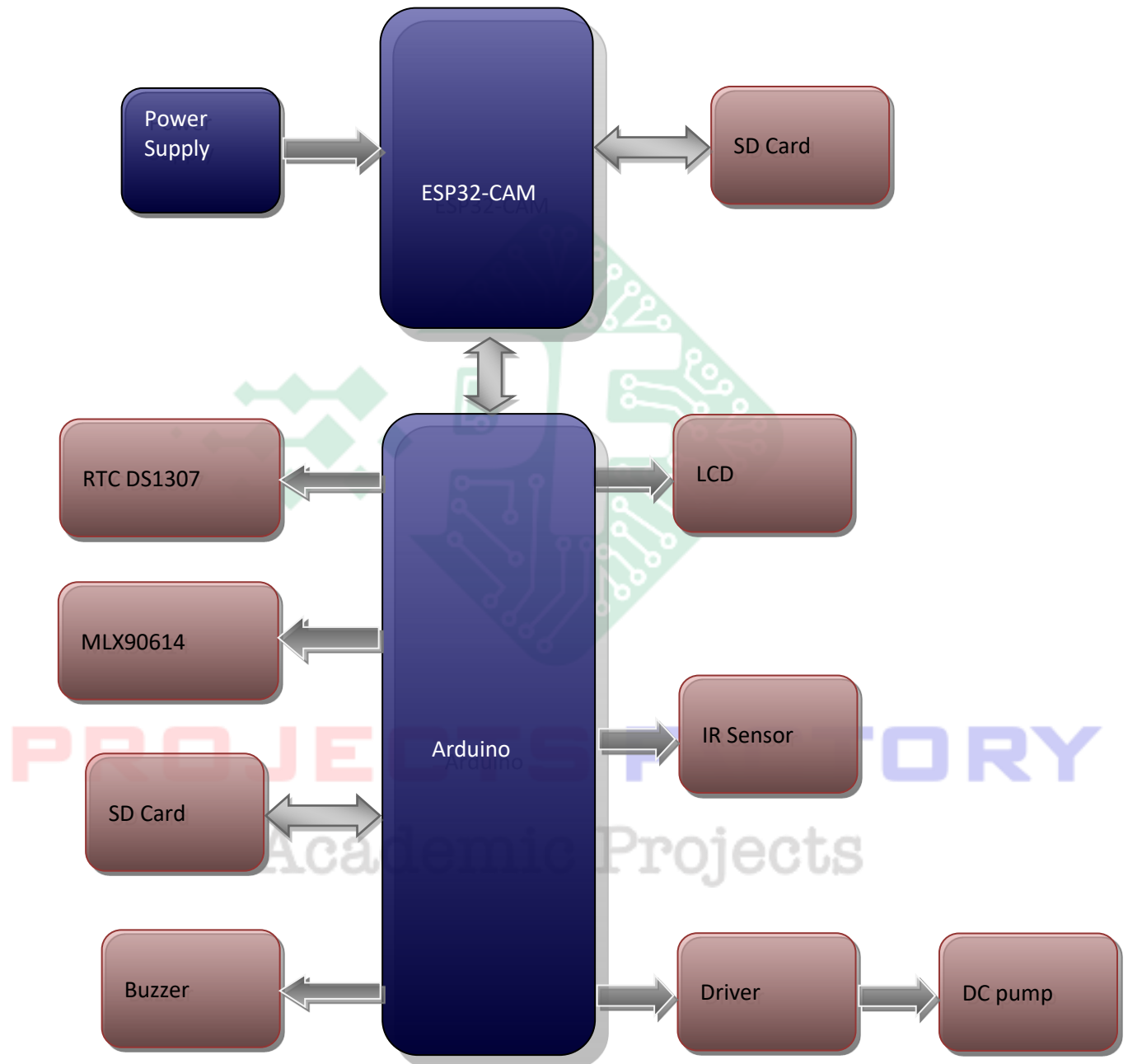|		
Microcontroller	:	Esp32-Cam and Arduino
LCD	:	16x2 LCD display
DC pump	:	5V DC
Buzzer	:	5V DC
Sensor	:	IR sensor
RTC module	:	DS1307 I2C module
Contactless temperature	:	MLX90614 I2C module
SD card	:	Micro SD card
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

Arduino IDE

APPLICATIONS:

➢ Smart Sanitizer
➢ Face recognize attendance
➢ Contactless temperature sensor

BLOCK DIAGRAM:

```
Power Supply  -->  ESP32-CAM  <-->  SD Card
                      |
                      v
RTC DS1307  <--   Arduino   -->  LCD
MLX90614    <--              -->  IR Sensor
SD Card     <-->            
Buzzer      <--             -->  Driver  -->  DC pump
```

POWER SUPPLY BLOCKDIAGRAM:

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

INTERFACES COVERD:

- We have covered Esp32-Cam and Arduino

- Buzzer and IR interface

- DS1307 and MLX90614 interface

- SPI based SD card interface