REAL TIME FACE MASK DETECTION AND THERMAL SCREENING WITH AUDIO RESPONSE FOR COVID-19 WITH IOT

AIM:

Design and Development of Real Time Face Mask Detection and Thermal Screening with Audio Response for COVID-19.

PURPOSE:

The coronavirus creates health problems and spreading fast than any other virus. Manual involvement in each case will not bring complete solution and consumes lot of man power. Especially for monitoring of manual entries at doors and gates is difficult and announcement of instructions also tough. To solve this issue, we propose system that can monitor face mask detection and temperature reading and announce through audio. Here project title is real time face mask detection and thermal screening with audio response for covid-19 with IOT.

DESCRIPTION:

Arduino and ESP32-CAM are connected together through Serial interface. MLX90914 (contactless temperature sensor) connected to Arduino i2c port. APR module connected to Arduino digital pins. ESP8266 (IOT module) connected to Arduino UART port.

WORKING:

ESP32-CAM module has built-in WIFI and camera. It can connect to WIFI hotspot or WIFI router and established connection to local network. It will stream video on HTML web page through IP address. Also WIFI module (ESP8266/IOT) also connected to same network to post data to IOT serve.

In this project we have to show face in front of camera and press button then it will detect face mask status. After face mask detected then it scan temperature, if temperature below threshold then audio will

play as like “you can go”, otherwise alert audio will play like “Will not allow”. Also data will be posting to IOT server.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Esp32-Cam and Arduino
LCD	:	16X2 LCD display
WIFI module	:	ESP8266
Temperature Sensor	:	MLX90614
Voice Module	:	APR33a3
Buzzer	:	DC 5V
Power Source	:	12v 1 amp Adaptor

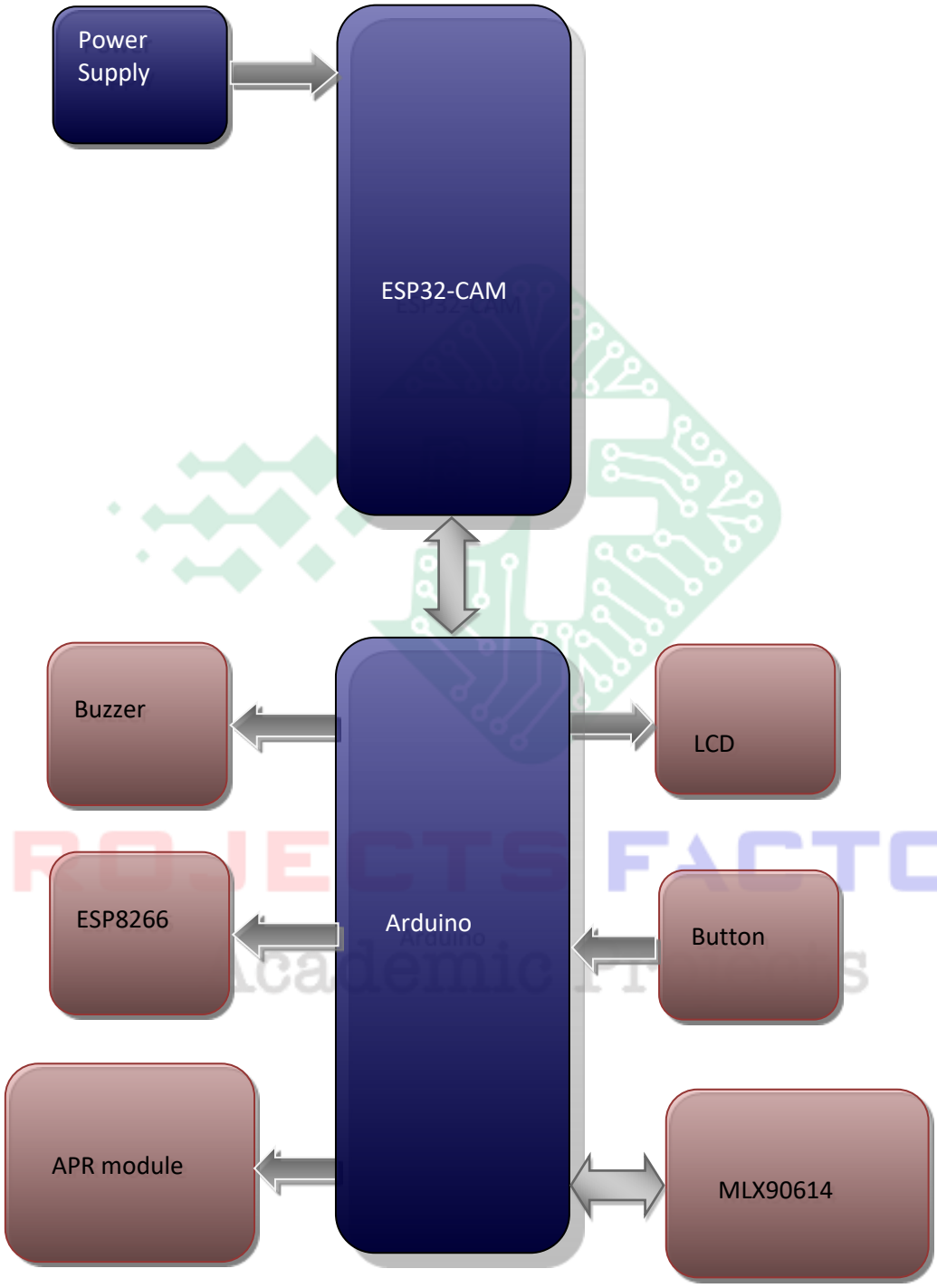
SOFTWARE:

Arduino IDE

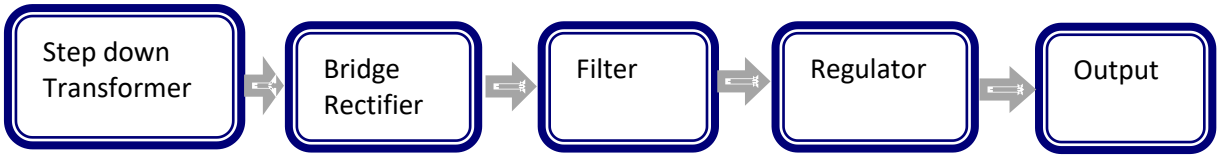
APPLICATIONS:

- Smart Face mask detection
- Body temperature scanner
- Covid-19 precaution systems

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered Esp32-Cam
- MLX90614 contactless temperature sensor
- APR module interface