FACE MASK DETECTION AND RFID ATTENDANCE SYSTEM

AIM:

Design and Development of Face Mask Detection and RFID Attendance system.

PURPOSE:

There is much kind of sensors available in market and each sensor for their specified applications. But every kind of sensors has their own limitations. Here image and video processing coming to picture and give solution without any major limitations. Based on machine learning algorithms, we can implement so many applications. Face mask is one of them and using RFID technology we can implement attendance system. Here proposed project is Face Mask detection and RFID attendance system using ESP32 CAM and Arduino.

DESCRIPTION:

ESP32 CAM and Arduino are connected to each other through UART port. ESP8266 (IOT module) and EM-18 (RFID module) are connected to Arduino serial ports. Two LEDs connected to Arduino digital pin.

WORKING:

ESP32 CAM has built in camera and it can process images and based on machine learning algorithm it acts. It can detect face mask status and send status commands to Arduino. While person entry into premises, he needs to swipe RFID card. Then ESP32 cam sends face mask status to Arduino. Face mask status and person name upload to IOT server through ESP8266 module.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontrollers	:	Esp32-Cam and Arduino uno
LCD	:	16x2 LCD display
IOT Module	:	ESP8266
RFID Module	:	EM-18
LED	:	DC 1.8V
Buzzer	:	DC 5V
Power Source	:	12v 1 amp Adaptor

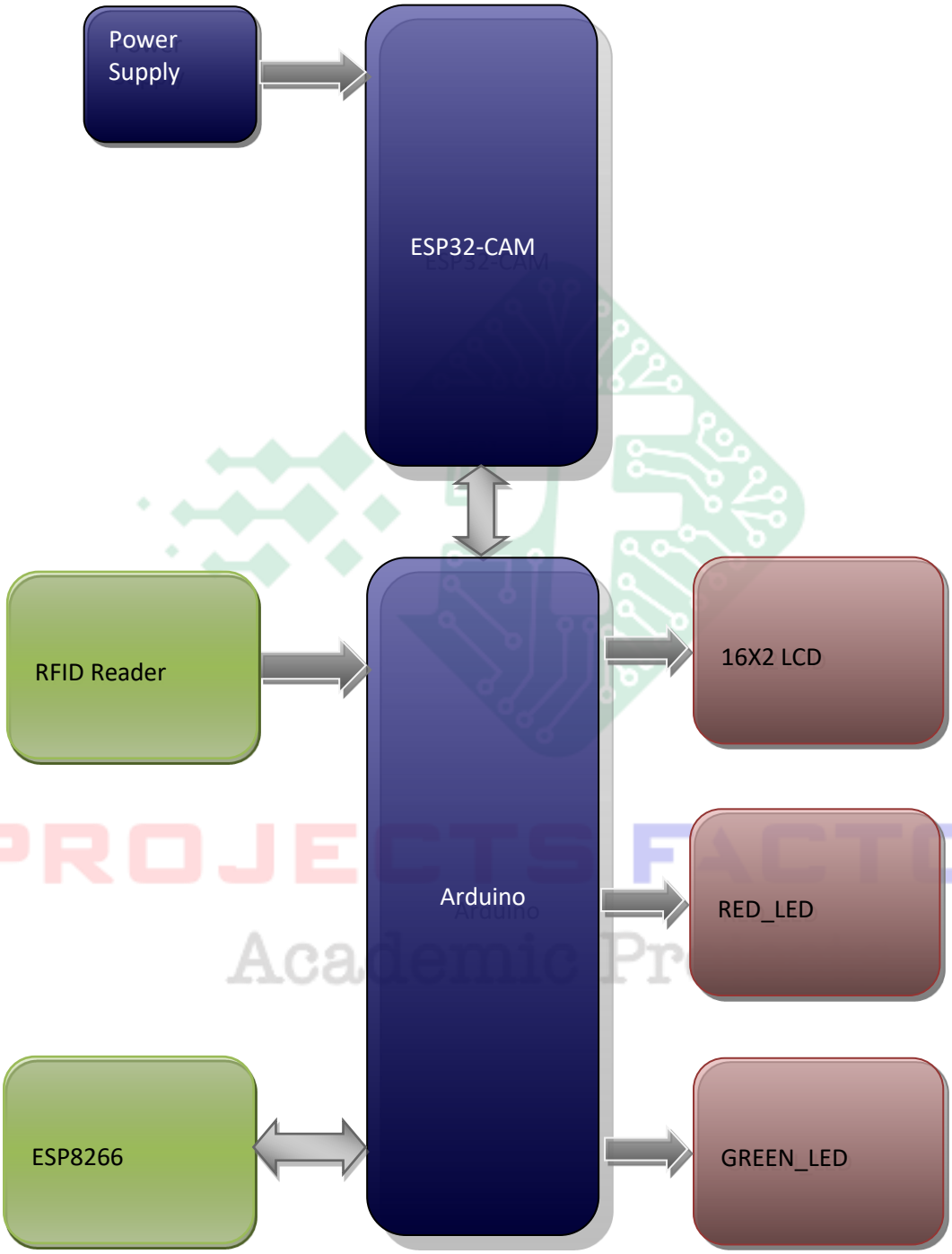
SOFTWARE:

Arduino IDE

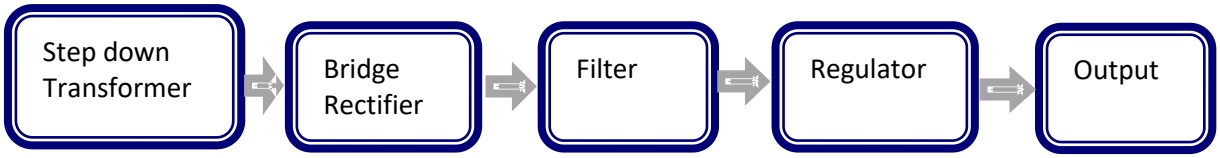
APPLICATIONS:

- RFID attendance application
- Face mask detection application
- Multilevel attendance systems
- Smart attendance system

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered Esp32-Cam and Arduino interface
- RFID reader (EM-18) and IOT module (ESP8266) interface