Detection of Live Covid-19 Affected People Number Using Arduino

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Abstract—**Nowadays, covid-19 has emerged as pandemic in whole worldwide. Internet of things (IoT) also can help this world rom this pandemic situation. We made detection of affected people number using arduinonano. We can see how many people are affected by covid-19 and we can share the data with people. So, people can be aware and safe from covid-19. Using ESP32 WIFI module and logic converter we can know how many people are affected. Then, there havea display which shows number of affected people. Using IoT, we also can save the world from pandemic situation.**

Index Terms—**Arduinonano, ESP32 Wi-Fi module, IoT.**

I. INTRODUCTION

Nowadays, whole worldwide is facing global pandemic covid-19 or novel coronavirus. First case found of coronavirus in china. Then it is spread whole over the world. Over 220+ countries are affected by this virus. As per the report 529 million peoples are affected and 62 million peoples are dead by novel corona virus. The internet of things (IOT) has power to save from this crisis. World health organization (WHO) is always tries to create awareness among peoples. To spread the awareness we made live corona updates on the p10 DMD led matrix display using Arduino and ESP32. It can see update of how many people is affected by corona and be aware.
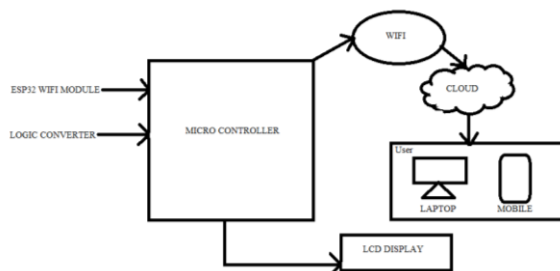
II. BLOCKDIAGRAM

Figure1. Block diagram of COVID-19 affected people number using Arduino

The above figure shows the system design for the live covid-19 data tracker system. Using ESP32 Wi-Fi module and logic converter, it sends data of covid-19. Communication can be done by Microcontroller for sending data on the internet without any wire. Finally, we can see how many people are affected by covid-19 in Led display.

III. EQUIPMENTS

1. ESP32 Wi-Fi Module, 2. Arduino Nano, 3. Logic converter (5 to 3.3V), 4. 32*16 P10 DMD Matrix display, 5.16 Pin FRC connector-1, 6.5V DC, 3 AMP SMPS, 7.Connectors

1. ESP32 Wi-Fi Module: In embedded system, ESP32 is a module which provides Wi-Fi dual mode Bluetooth connectivity to devices. ESP32 is a chip which was developed by Espressif systems. ESP32 can interface with other systems to provide Wi-Fi and Bluetooth functionality through SPI or I2C interfaces.

Figure 2: ESP32 Wi-Fi Module

2. Arduino Nano: Arduino Nano is a Microcontroller Board designed by Arduino.cc. Microcontroller used in Arduino Nano is ATmega328p.Arduino Nano has 12 digital pins starting from D2 to D13.It also has 8 analog pins starting from A0 to A7.It has more or less the same functionality of the ArduinoDuemilanove,

but in a different package. It lacks only a DC power jack, and works with a Mini-B USB cable instead of a standard one.
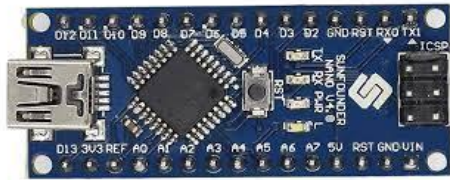

Figure 3: Arduino Nano

3. Logic converter (5 to 3.3V): To get over this obstacle you need a device that can shift 3.3V up to 5V or 5V down to 3.3V. This is called logic level shifting. Level shifting is a dilemma so common we designed a simple PCB assembly to make interfacing devices a little easier: the Bi-Directional Logic Level Converter.

Figure 4: Logic converter (5 to 3.3V)

4. 32*16 P10 DMD Matrix display:P10 is a 32*16 LED Matrix module which is popular for displaying big advertisements. P10 LED modules can be multiplexed to build a bigger size display. There are two ports in a P10 module- input and output port. An input port is used for the incoming data from the Arduino side and the output port is used to connect the module to another LED P10 module.

Figure 5:32*16 P10 DMD Matrix display

5. 16 Pin FRC connector-1: FRC (Flat Ribon Cable) are the most widely used type in electronics for interconnections for power and signals from 6 to 64 pins.16 pin FRC cable with female connector on both ends. You can choose the length of the cable in the

options sections above. The pitch is 2.54mm for the cable as well as the connector. This type of cable is used in all kind of HUB12, HUB8 and HUB75 based LED display modules.

Figure 6:   16 Pin FRC connector-1

6. 5V DC, 3 AMP SMPS:These Plug in type or wall mount type adapters have a wide application like set-top boxes, modems, Wi-Fi routers, DVRs, biometric machines & much more electronic equipment. Many of our models have multiple usages, so we have designed them keeping compatibility with all equipment in mind. Plugin adapters come with many types of output dc pin interfaces, which you need to keep in mind.

Figure 7: 5V DC, 3 AMP SMPS

7. Connectors: Connectors are used where wires lines need to be connected and disconnected and therefore using a connector provides a huge amount of flexibility. Electronic circuit boards, i.e. printed circuit boards can be assembled and tested. When they are complete they can be quickly connected into the final unit or system. Electronic equipment can connected to other items of equipment to make a system.

Figure 8: Connectors
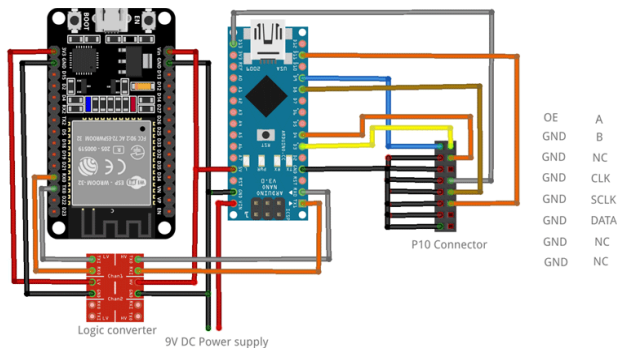
IV. CIRCUIT DIAGRAM:

Figure 9: Circuit Diagram

V. CONCLUSION

.Arduino UNO and P10 display module are connected for Corona Live data tracker as per the table below:

P10 display module	Arduino UNO
GND	GND
A	D3
B	D4
DATA	D11
SCLK	D8
CLK	D13
ENABLE	D9

VI. FUTURE WORK

In this paper, we have found the importance and benefits of IoT in health monitoring system. Using sensor in IoT make huge impact in our life. IoT helps us to fight against Covid-19. We can see affected people number easily from home. So it spread awareness among us. This project makes a great important to spread awareness among normal people. Using Wi-Fi module it collect data of affected people show it in led display. We also can improve this project future also. We can display the number of affected people in mobile phone, laptop etc. IoT create a great in medical system.

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