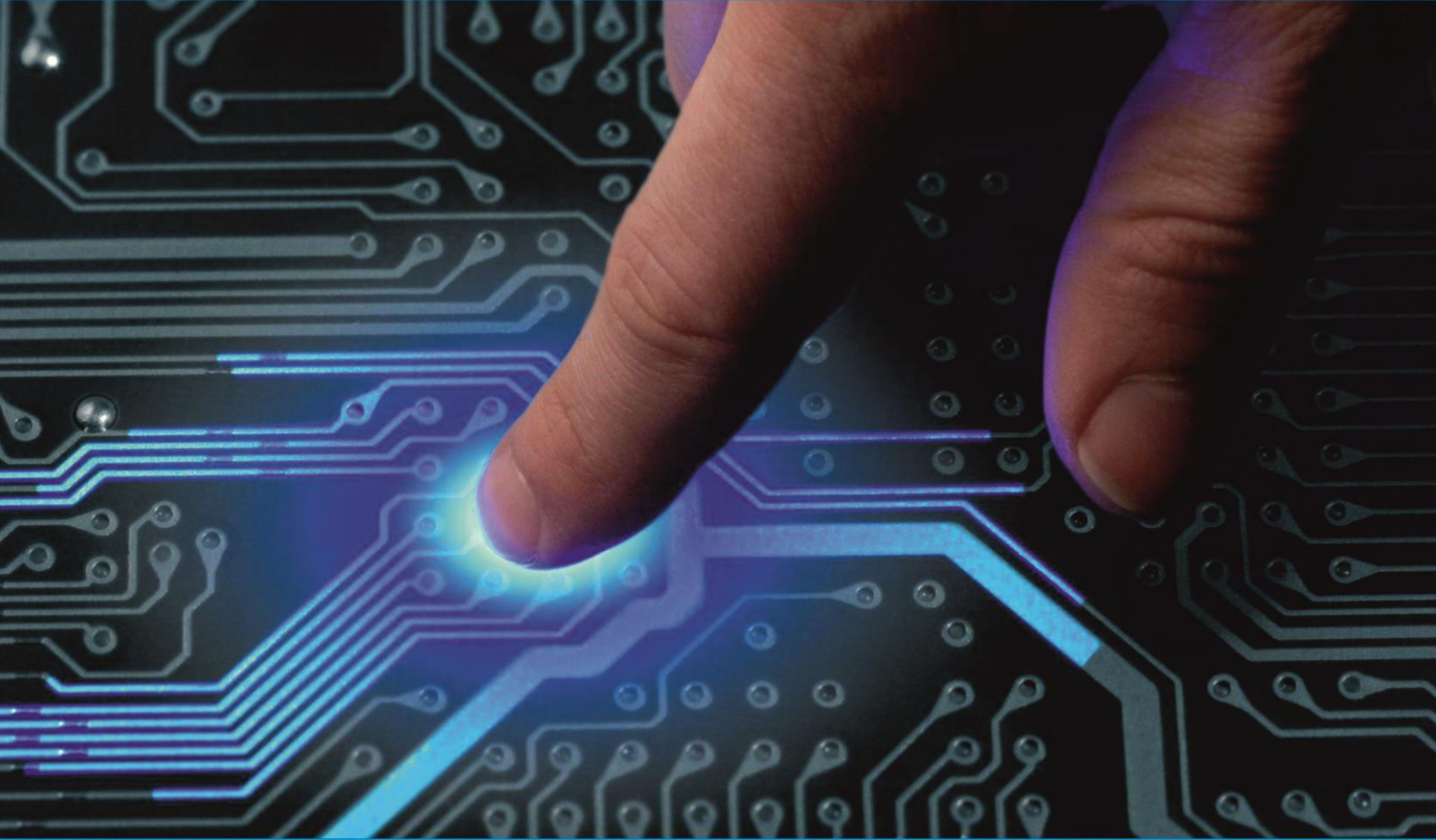




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# Smart Factory Using Industrial Internet of Things (IIOT)

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**ABSTRACT:** The industrial internet of things (IIoT) describes network of things or objects for connectivity used mainly for industrial purpose. IIoT refers to the extended branch of IoT that is specifically engaged with the industry[1]. The IIoT refers to industrial applications. The principle of IoT and IIoT they both work in the same way. They both connect the devices to the internet and make the smarter. All the technological companies have developed new innovative technologies which are extended. From this process the basic idea can be given by the name of our project. In this project, we are also handling same aspects which are related to controlling panels, developing modules with the help of industrial internet of things.

**KEYWORDS:** ESP32 BOARD, CABLES, MQTT SERVER (RASPBERRY PI BOARD), BULB, HLK-PM03.

## I. INTRODUCTION

In many company there are incoming transformers, they are in a corner of the company. There are some panels in company which is needed for different aspects like controlling panel. Those are in particular area or in different room, that room is called panel room. The distance from the panel room to the control room is around 700 - 1000 feet. Suppose, when the light of MSEB goes out, then the whole system goes into auto mode and system will start again. But always the worker has to go to the panel room and check if the diesel generator is on? Has the light of MSEB really gone? There are some panels in company which is needed for different aspects like controlling panel.

- **Need**

Mostly in many companies , every time employee Need to go to panel room for checking MSEB or DG indicator.For this purpose we are used the industrial Iot hardware Having WiFi module to solve this problem. so by using this module there is no long wires in factory and it improves it efficiency. So overall, it increased the visibility, analytics, and the connectedness afforded by IIoT means that this technologies are not just an immediate solution to present challenges.[4]

## II. METHODOLOGY

This is flowchart of our system. So firstly, we started the Iot module once it is started it will check that Wifi is connected or not. If it is connected to Wifi then it processes further. But if it is not connected Wifi then it follow the loop again and again still it connected to Wifi. When it is connected to Wifi it will detect the input i.e MSEB is on or DG is on? Once it get input then that input signal detect on board(Master/Slave).

- Flowchart

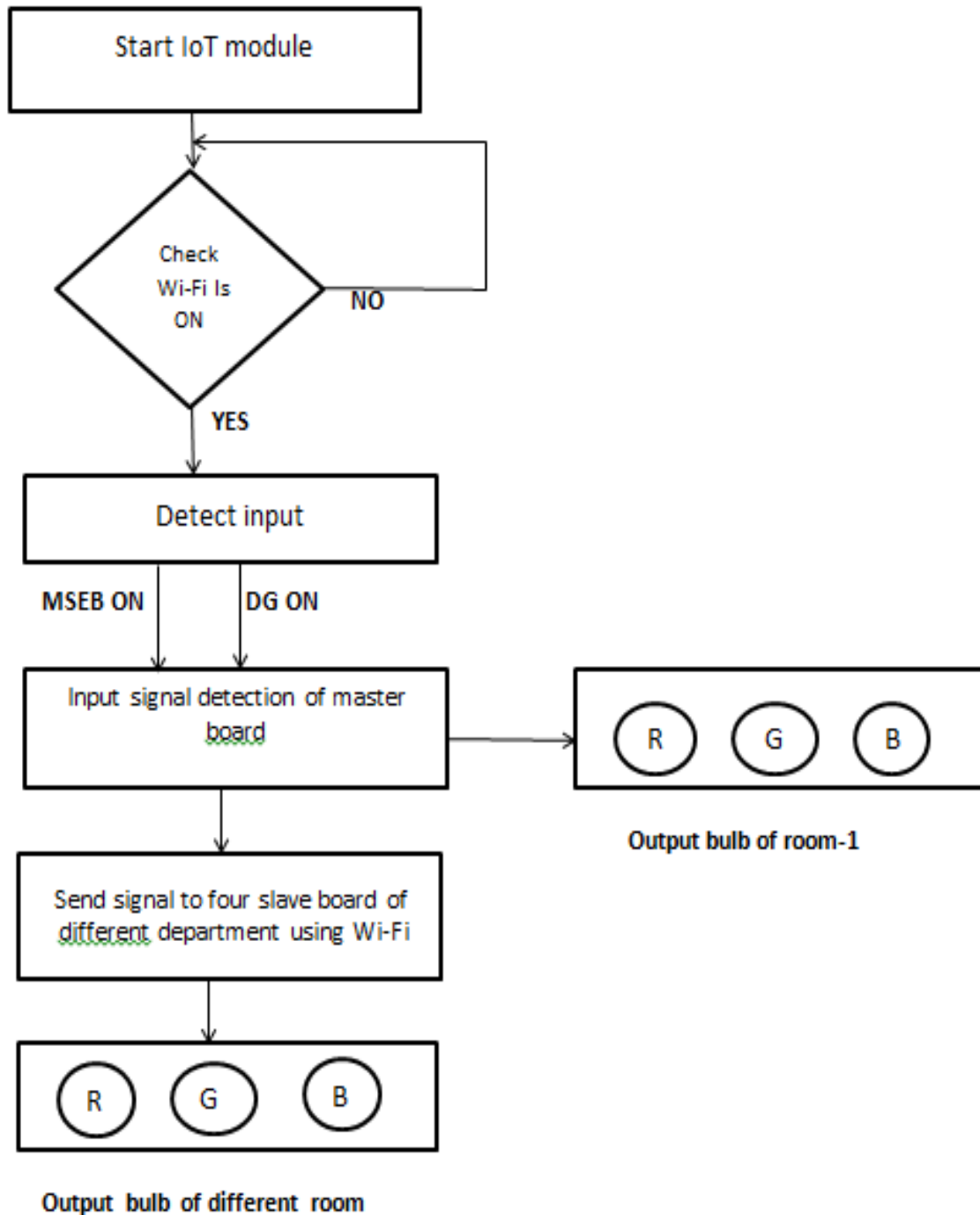
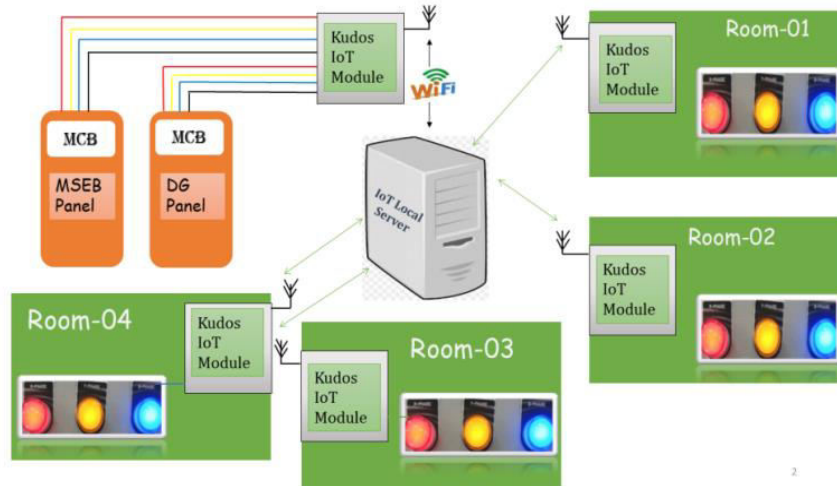


Fig-1.Flowchart of system

### III. MODELING AND ANALYSIS



**Fig-2. Block Diagram of Smart Factory Using Industrial IoT.**

The Existing system need to operate manual, old system not able to identify actual problem in of tripping the switch. Whenever DC switch ON and OFF need to check manual in existing system. ESP32 microcontroller, Relay module, MQTT server, and bulb as an indicator lamp. Due to this time and cost for industry are increasing. To overcome this we are designing new system which can give alert whenever DC switch is turning ON / OFF or electrical supply form MSCB is available or unavailable. To reduce wire problem then we are using wireless technology. It will reduce cost and time of company. So in this process we are using some controlling boards.

- **Hardware Requirement**

1. ESP32 Development Board with Wi-Fi
2. HLK-PM03
3. 5W bulb

- **Software Requirement**

1. MQTT
2. Node.js

**[1] ESP32 Development Board with Wi-Fi**

ESP 32 Development board is based on the ESP WROOM 32 WIFI+BLE Module. ESP 32 also supports the Wi-Fi Direct. Wi-Fi-Direct is good option for peer-to-peer connection without the need of a access point. The Wi-Fi- Direct is easier to set up and the data transfer speeds are much better than Bluetooth.

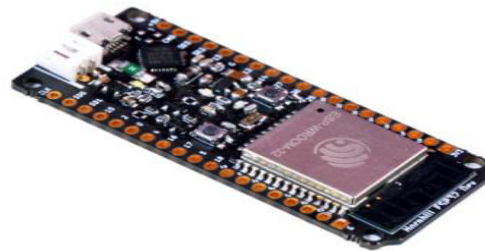


Fig- 3 .ESP32 Development Board with Wi-Fi

### [2] HLK-PM03

HLK-PM03 Hi-Link 3.3V AC to DC Power Supply Module is a plastic-enclosed PCB-mounted isolated switching down power supply module. This makes it perfect for small projects that need a 3.3V supply from mains. There are many advantages for these modules, such as low temperature rise, low power, high efficiency, high reliability, high-security isolationist.



Fig-4.HLK-PM03

### [3] MQTT server

MQTT stands for Message Queuing Telemetry Transport. It is an easy way for Internet of Things (IoT) devices to communicate with each other using a communication protocol based on a publish and subscribe system. MQTT Internet of Things (IoT) devices to communicate with each other using a communication protocol based on a publish and subscribe system.

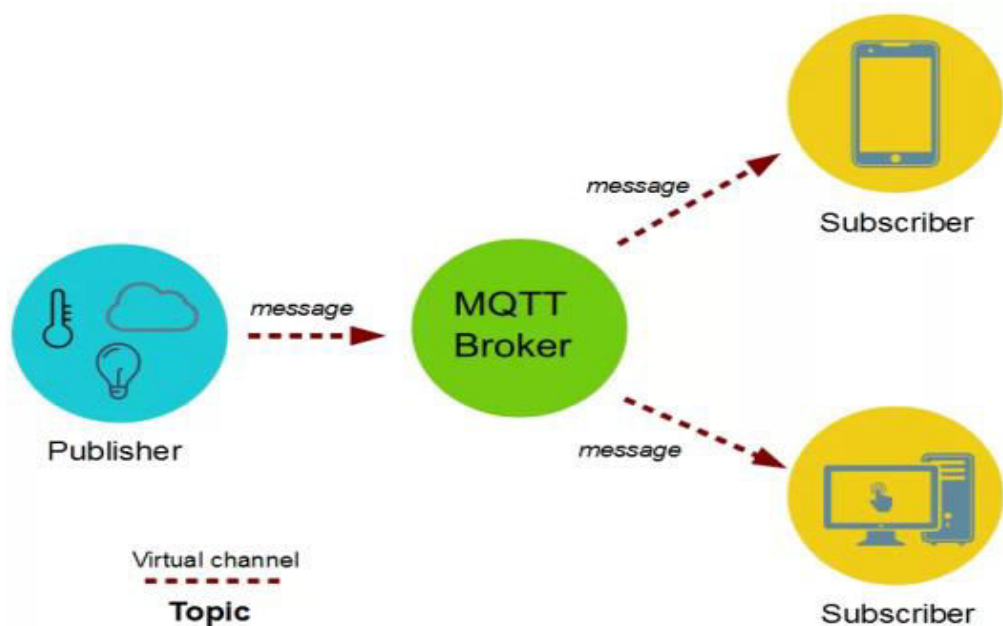


Fig-5. MQTT server

#### IV. CONCLUSION

Wireless communication is the main aim of this project to implement the smart factory using IIOT. There is no long wires in company. So it will improve the efficiency. Industrial internet of things includes several important capabilities for automation. It allows the users to identify and solve their problems.

#### V. RESULT AND DISCUSSION

In study we have implemented c programming while coding for arduino ,in the smart factory using industrial (IOT).The use of arduino provides automation to it. in this project we use wireless communication . It reduce the wire cost and improve the efficiency.

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