

Iot Based Labour Work Monitoring System

Dipali Sanjay Babar¹, Shreya Suresh Kamble², Payal Vijay Patil³, Samiksha Sidgonda Patil⁴,

S.P.Phadtare⁵

Professor¹, Students^{2,3,4,5}

Department of Information

Sharad Institute of Technology Polytechnic, Yadrav, Maharashtra, India

Corresponding Author's email id: payalpatil2602004@gmail.com³

Abstract

In this world credit goes to ever growing technology and in past few years automation has reached to new revolution there for designing of system that will monitor different operations in industry by sitting in front of single monitor is very profitable and time saving .This paper describes the system that will record the operation time of the machine and also details of worker operating it. All the system is designed on basis of web server web module and microcontroller.

Keywords: Wi-Fi module, RFID reader, IR sensor, aurdino, web server

INTRODUCTION

Industries have become the largest employment generating sector. Increasing growth and demand industries are faces many problems and the solution of those problems have use of automation. Automation is nothing but application of technology, processes, programs or robotics which is achieves outcomes with minimal human output. Automation is major key of improvement and maintains labours working hours. Our project is IOT

based internet of things is greate combination of software and hardware. IOT's physical objects are connected to the internet through the network devices. Our project is Labourwork monitoring system.

This monitor or control work of the labour it shows performance of all workers on a single machine. Industries like media, retail and financial services have redefined

business to consumer B2C industries in past 15 years.

In the next 10 years, the Internet of Things revolution will dramatically alter manufacturing, energy, agriculture, transportation and other industrial sectors of the economy which, together, account for nearly two-thirds of the global gross Domestic product (GDP). It will also fundamentally transform how people will work through new interaction between humans and machine.

METHODOLOGY

The System is designed to ensure the safety of labours reduce the project cost and prevents the wastage of working time. It is an embedded system, where we are using the RFID tag to monitor the workers and to prevent labour. Location tracking is done using RFID, which helps in easy communication.

These systems also focus on reducing the project cost by calculating the idle time of the labour.

A significant economic objective of this project is to ensure lower costs and save time. The proposed system provides a convenient way of providing the supervisor and labour safety. This system

maintains the labour details and it will be used during intimation. It provides an easy way to verify the safety of the labour. It gives an efficient result for the project owner by calculating idle time. These reports provide clear details about the activities of the labour. The data we are storing in a database will also be used for data analytics that gives the frequent intimation.

At first, the supervisor will send an intimation to communicate with labour and also if the labour tries to turn off the machine the intimation will be sent to the supervisor with the details of the labour.

a) WIFI Module:-

ESP8266 is an impressive, low cost WIFI module suitable for adding WIFI functionality to an existing microcontroller project via a UART serial connection. The module can even be reprogrammed to act as a standalone WIFI connected device just add power.

b) RFID Reader:-

An RFID (Radio frequency Identification and detection) reader is a device which is used to communicate with RFID tags by receiving and transmitting signals. These signals use radio waves for wireless communication. RFID tag is applied to

products, individuals or animals to identify and track them. The identification is done through a unique serial number.

c) LCD:-

It is very important to keep a track of ting machhe working of almost all the automated devices, be it a washing machine, an autonomous robot or anything else. This is achieved by displaying their status on a small display module. LCD screen is such a display module and a 16x2 LCD module is very commonly used. These modules are replacing seven segments and other multi segment for this purpose.

d) Arduino UNO:-

Arduino uno is the main ic for 16 mg2 cristlock setup .there are to capacitor used to reduce the noice and the cristal are to provide frequency in short machine.

e) Relay:-

A relay is an electrical switch that uses an electromagnet to move the switch from the off to on position instead of a person moving the switch. It takes a relatively small amount of power to turn on a relay but the relay can control something that draws much more power.

PROBLEM FORMULATION

The Labour's are not turning on/off the machines regularly within proper time. So, there will be loss of the company. If the worker turn on/off the machine if it recorded then the company owner can recognize the actual turn on/off time machines. So, it check the production of that machine

SYSTEM DESIGN

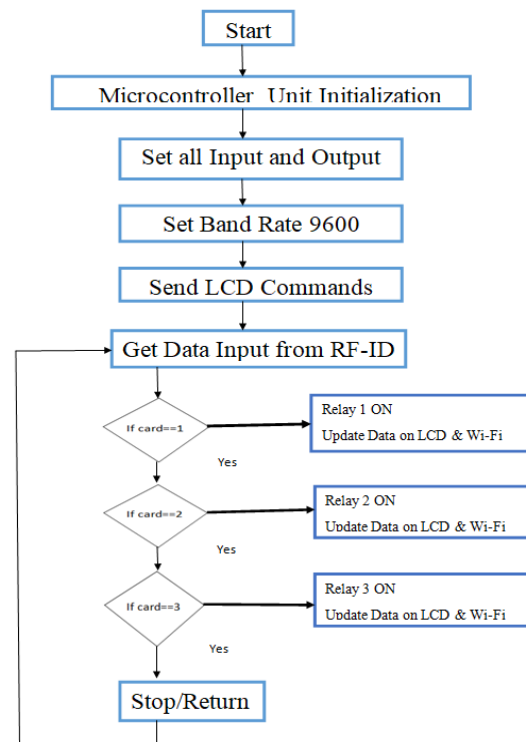


Figure 1: Flowchart

Step 1:- Labour will Swipe the card.

Step 2:- It will updated the entry.

Step 3:- Card will be recognized by microcontroller.

Step 4:- Then the machine will be turn off

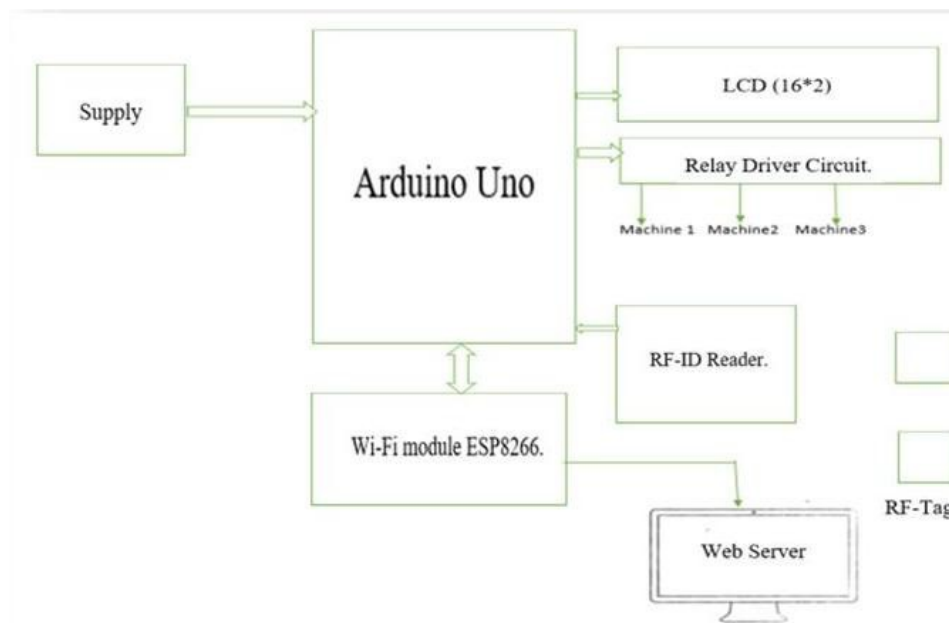


Figure 2: Block Diagram

The above block diagram contains the Arduino Uno, LED, RFID reader, Relay driver circuit, Wi-Fi module, and power supply. The RFID reader will detect the card when it is swiped by particular labour. This input will be shown by the LED. The Arduino Uno is a microcontroller board based on the datasheet. The relay driver circuit protects the sensitive electronic part and the Wi-Fi module is used for sending input information to the system.

When the particular labour will turn ON or OFF the machine using the RFID tag, due to this system will save the ON time and OFF time of the machine using this two times we can monitor the labour work.

Due to our system is IOT based the owner can monitor the work of labour any and anywhere.

ADVANTAGES

- It provides better control over working process of labours.
- It gives better control over production monitoring.
- With the help of this system owner of industry can monitor work from any place.
- Reduced energy and power consumption.
- It is time saving.

LIMITATION

- Annual Maintenance.
- Power Supply continuous for 24 hours.



Ms. Payal Vijay Patil

She is studying in Sharad institute of technology polytechnic in department of information technology in third year diploma.



Ms. Samiksha Sidgonda Patil

She is studying in Sharad institute of technology polytechnic in department of information technology in third year diploma.



Ms.S.P.Phadtare

She is completed B.E in Computer Engineering. she is work as Lecturer in Sharad Institute of Technology Polytechnic in Department of Information Technology