Real Time Production Monitoring System (RTPMS)

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ABSTRACT

Production monitoring system is a system that is used in real time to record production line data. It is constructed using RFID tag and reader to collect data from production lines. The real time production monitoring system is designed to collect data automatically and display the data on display board for the workers to see. Data on production time, Non-production time, targets, rejection, planned stops and cycle times will be displayed as well as relayed to the management.

KEYWORDS:- *Production Monitoring, Real Time Information, Remote monitoring, shop floor visibilit ,RFID Detection .*

I. INTRODUCTION

Nowadays, in an open and competitive market, companies cannot afford the waste of time and resources to perform work that can be done in a better and faster way with advanced solutions. One of the advanced solutions can be the real time production monitoring system. It is a production tool that collects and distributes necessary data. To design a real time production monitoring system for use on these production lines. Such a monitoring system will be used to automatically gather production line data and distribute/send it to the industry management or anyone on the shop floor for instant action. The availability of these data can help the industry in improving their production yield and hence profit. Our project is about monitoring work allotment and progress about work like what is the target for today how much is achieved etc. Setting can be set with help of android app. We will design customized dedicated app. which will communicate with embedded Bluetooth and RFID reader interface with ARM7 based LPC2138 microcontroller. App will have same GUI like dashboard we are going to design; dashboard will consist of a series of 7 segments all these segments will interface to LPC2138.

II. OBJECTIVES

1. Display production line data in real time and numerate production target.
2. Enables to numerate extra or lack of production.
3. Enable for required manpower in manufacturing unit.

III. AIM

As we know the problems occurs in industry at production line, to solve such problems we design the real time production monitoring system.

IV. RELATED WORK

1. Production Monitoring System for Monitoring the Industrial Shop Floor Performance[1]

From this paper we Refer-

Efficiency and accuracy at the production line enables a better production and utilization of the available resources. An accurate data management and shop floor monitoring system (PMS) is equally important in improving production performance. The number of production floors are utilizing manual methods of data collection for producing reports. Manual data compilation leaves room for both inconsistencies and inaccuracies. When manual

data collection is practiced, there is usually a second step of manually compiling the data. This is most commonly accomplished by entering in the information into spreadsheets. When the data is collected without the help of a production monitoring system then the data can be inaccurate. Where there is human intervention on the recording or collection of data, the truthfulness of the collected data is no longer reliable. This paper present the benefits and usefulness of an automated data collection and display system for production lines. Once the data is displayed, it is the transferred into computerize spreadsheet in the remote office by authorized personnel for reporting purposes. The system will generate an automated report which stays in place and the management only needs to acts base on the results. This cost effective automatic data collection is the alternative to manual data collection. It significantly improves the accuracy of the valuable reports for the managements.

2. Production monitoring system development and modification[2]

From this paper we Refer-

   Main attention of this paper is paid to the development of a simple, but efficient concepts of a real time production monitoring system. The goal is to offers an effective concept, which will help to provide an accurate overview of the shop floor activities by diverse information appearance and improve asset management, machinery utilization and production process stability. The subtask considered includes description of the design of a visual module for the proposed PMS for a certain types of micro, small and medium sized enterprises.

3. Real time production monitoring system in SME[3]

From this paper we Refer-

   Real time production monitoring systems (PMSs) is an alternative to manual data collection and captures most of the required production data without human intervention.
The general objective of the current study is to analyses PMSs and to offer particular solutions for small and medium sized enterprises (SMEs). The subtasks to be solved in the case of each particular PMS include determining relevant parameters, designing PMS and developments of the data analysis and prognosis model for short term and long term planning.

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V. PROPOSED SYSTEM ARCHITECTURE

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Explanation-

The primary contributions of this paper are as follows:

- Microcontroller:
  We are using LPC2138 as ARM controller, which is heart of our project.

- Bluetooth Device:
  It is used for the wireless communication between the mobile application and controller.

- RFID Tag:
  Radio-frequency identification (*RFID*) uses electromagnetic fields to automatically identify and track tag attached to objects. The tags contain electronically stored information. RFID tag attached to objects during production can be used to track its progress through the assembly line.

- Display Board:
  Display board is used to show the production line data. Such as what is the target and how much is achieved.

- Mobile Application:

Mobile app is used to change the allocated production target day-to-day as per the requirement.

- Conveyor Assembly:
  Conveyor assembly is used to covey the object/product and pass through the detection process.

Block Diagram Discription:

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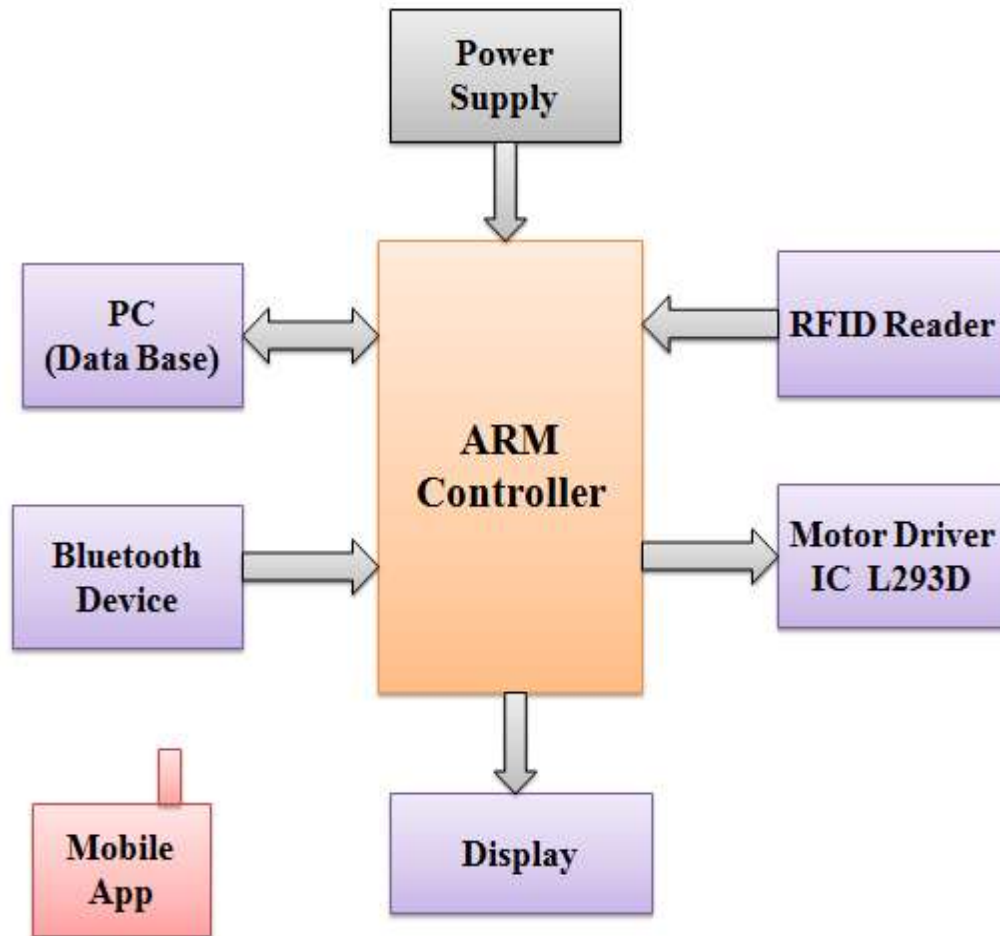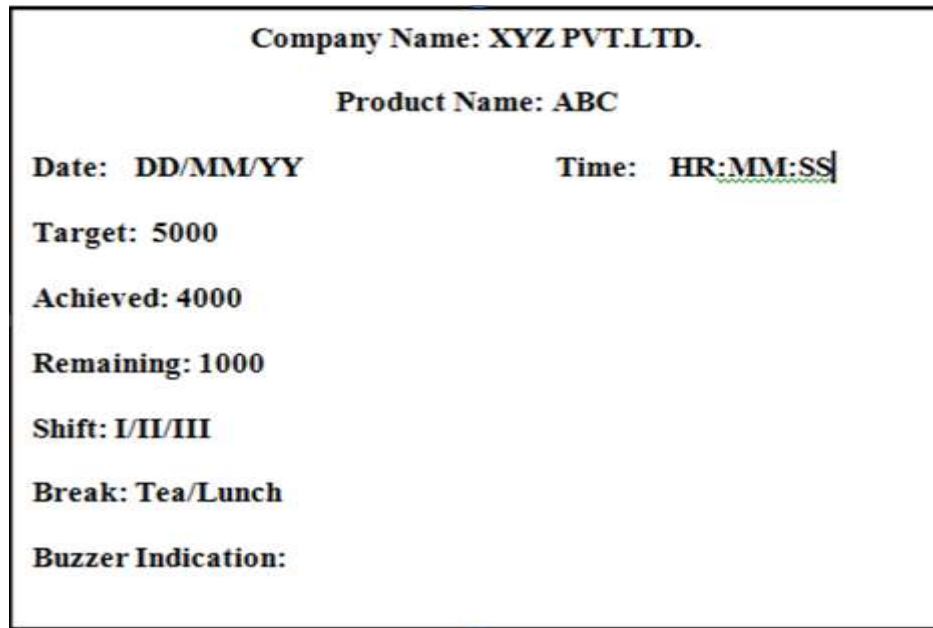

Fig.1 Block Diagram

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Company Name: XYZ PVT.LTD.

           Product Name: ABC

Date:  DD/MM/YY                 Time:   HR:MM:SS

Target:  5000

Achieved: 4000

Remaining: 1000

Shift: I/II/III

Break: Tea/Lunch

Buzzer Indication:
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Fig.2 Display Panel Diagram

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