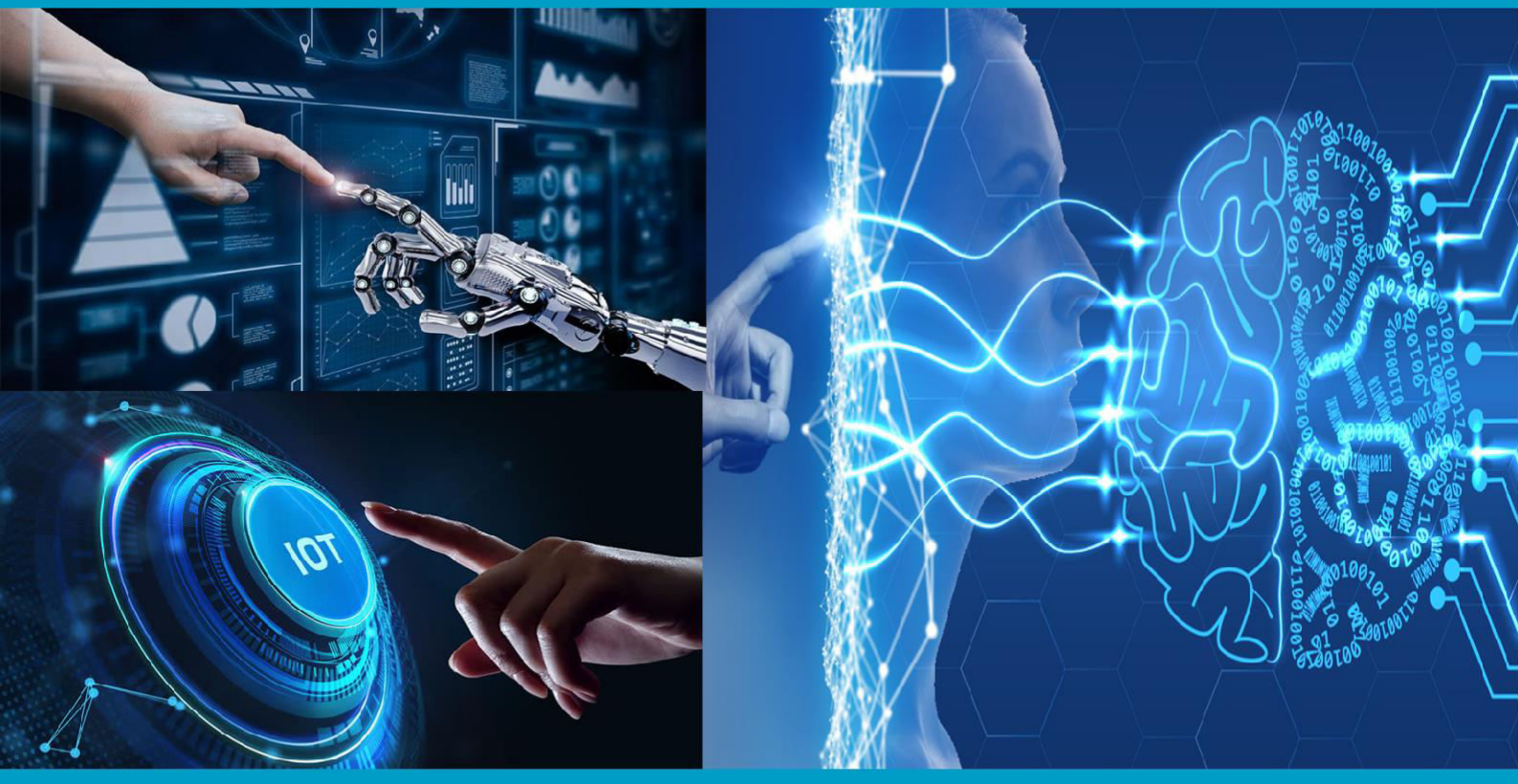
IJMRSETM

e-ISSN: 2395 - 7639



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING, TECHNOLOGY AND MANAGEMENT

Volume 9, Issue 7, July 2022

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 7.580

International Journal of Multidisciplinary Research in Science, Engineering, Technology & Management (IJMRSETM)

| ISSN: 2395-7639 | www.ijmrsetm.com | Impact Factor: 7.580|

| Volume 9, Issue 7, July 2022 |

| DOI: 10.15680/IJMRSETM.2022.0907008 |

Automatic College Bell System

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ABSTRACT: Time scheduling plays a key role in every institution and organizations. To maintain the schedule timings, college will assign an employee to ring the bell. It will be difficult and inaccurate if the employee is in leave. To overcome this problem "Automatic college bell based on IOT" is proposed. It isdesigned in such a way that the bell will be activated for every 50 minutes or as per the college schedule andit will ring for 10 seconds. The major advantage of the project is that the bell rings at the start of everyperiod without any manpower to a great degree of accuracy and hence succeeds the manual task ofswitching on/off the college bell on time.The components used in this project are Node MCU,Source (mobile app/Keypad), 16x2 LCD(Liquid Crystal Display)module to display the input timings to select,Relay, Electric Bell

KEYWORDS: LCD Module, Keypad, Electric Bell, Node MCU, Relay

I. INTRODUCTION

In modern life everyone knows that time is important and once it is wasted cannot be return back. now a days schools/colleges are using manual operated bells which causes more disturbance for faculty and students when it doesn't ring at the right time. Here comes the major problem of using time and its accuracy. Not only time when it comes to manual bells there is an extra task of man power is used. so by considering these problems as main task an automatic college bell is introduced as our project.

As we know now a days technology is placing a vital role to complete any task in an easier manner and with consumption of less time. From those IOT plays a major role in advance improvement of technology. So by keeping this as main aim, we are developing our project in the domain of IOT. As we know about the importance of time we are developing an automatic college bell based on IoT. Our project contain market running latest microcontroller i.e, Node MCU, Relay, 16x2 LCD Display and Buzzer as our components. This is an variable time changing bell which is different from manual bells were time can be changed as required Eg: college timings, exam timings. We are developing this bell in such a way that it rings for every fixed intervals of time and rings continuously for 10 seconds. The bell work when the input timings match with the RTC were timings are given as input they are stored in the cloud(inbuilt in node mcu). When the timings which are given matches with the RTC the relay would be switched ON. Relay works as a switch between Node MCU and bell. When the bell rings continuously for 10 seconds the Relay would be turned OFF.

In this project we used the RTC model of DS 3235 in order to be more efficient from other models in time matching at any temperature conditions. We are developing the bell in such a way that user can access the bell through the source(keypad/app) which is provided and can make changes or can edit the bell timings as he wish. By this automatic college bell usage of manpower and disturbances in class timings would be avoided.

II. LITERATURE SURVEY

Vaishnavi.D.R, Neha Khanum, Apoorva Singh , Sumaya Afreen, Automatic college bell system with wireless control uses RTC3231 module and HC-05 bluetooth module. This consists multiple time table setting feature and can set an event/exam timings also. The range of Bluetooth module is about 100 meters which is less to operate a bell.[1] **Sheenu Choudhary Shrikant and Priyanka Sharma**, Automatic college bell system system. This will get the information from the keypad and when the programed time matches the time in RTC module the bell gets activated and it will ring for certain period. Also the bell is password protected so that no one can operate the bell except the user/admin. [2] **Ms. Khedekar Kavita dilip, Ms. Rinku Chavan**, Arduino controller automatic college bell system main aim is to ring the bell automatically without any human interaction. LCD will display the time and date and RTC will take the real time. When the timings from RTC equals to programme the relay gets activated and bell will rings.

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There is no provision to change the timings and it is not password protected.[3] **Nalini, Naveen, Sharwanjana, Satish kumar and Vijay**, This paper main objective is to propose the automatic college bell ringing system where the bell activates after every 50mins and ring for 10 sec. An RTC module is used, which displays the real time. Here RTC module time will change due to environment conditions. [4] **R. K. Megalingam, V. K. Balasubramanian, M. M. Nair, V. S. V. Sarma and R. Srikumar**, Power aware automatic microcontroller bell is used to ring the bell without any human intervention. Here external RTC and battery backup is used which makes the system cost effective.[5] **D . Bilic and T. Uzunovic**, "embedded automatic sheduling system, Embedded automatic scheduling system is used to ring the bell without any human intervention. Here they have made an RF transceiver which is integrated in system and receiver which is connected with USB were here user can operate bell only by connecting USB with computer in a limited range.[6]

III. AUTOMATIC COLLEGE BELL SYSTEM

The proposed project of Automatic bell mainly focuses on avoiding the man power and the disturbances caused by manual operating bells. This project of automatic bell utilizes the importance of time and to use it in an efficient manner. Our bell is maid with the latest tech microcontroller Node MCU were it is been connected with power supply and further connections are given to 16x2 lcd screen, relay, keypad. It works as the user gives the required timings to ring the bell, those timings are saved in the cloud which is inbuilt in the node mcu. When the timings in the cloud matches the real time, microcontroller make the relay to switch ON and the relay makes the bell to ring. The relay will be automatically switches OFF when bell rings for the given period of time.

BLOCK DIAGRAM

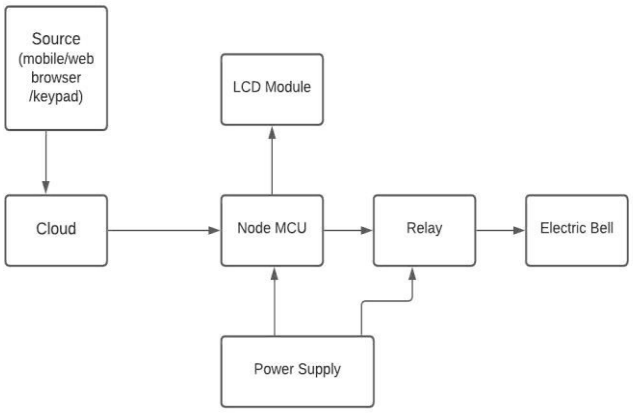

Fig 1: Block Diagram of Automatic college bell

- Node MCU
- 16x2 LCD display
- Source(keypad/mobile)
- Relay
- Electric bell

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FLOW CHART

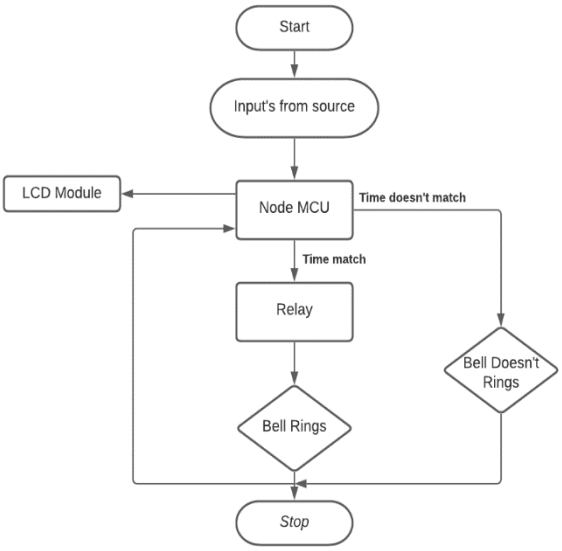

Fig 2: Flow Chartof Automatic college bell

The flowchart below gives a brief idea about work:
It starts the process by taking the input's from the user through the required source(as we have given source of different platforms as mobile app/keypad) and store the input data in its cloud. Node Mcu which acts as microcontroller will always monitor the real time to LCD module. The Node Mcu which always monitor the cloud data, when the input given by the user matches with the real time then the Node MCU sends the signal to relay. Where relay acts as a switch, it switches ON the bell to ring. When the continuous monitoring of Node MCU with real time does not matches with input, relay will be in ideal (switch OFF) state. Further the inputs in Node MCU will continuously monitor with real time in order to ring the bell if time is matched.

IV. CONCLUSION

In these days ringing of bell in any schools or colleges have became complicated as they are using manual bells, were it takes a man to be always alert and would become difficult if he is stated with an otherother task at the same time. So by the tremendous use of the latest technology we have created an automatic bell which works efficiently in the given timings. There is no man power used as it automatically rings with a great accuracy and the timings are edited by the user with a simple task.. We can state that it will be useful for all schools, colleges or institutions and can be further upgraded in future.

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Impact Factor: 7.580

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