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# IOT BASED ALARM SYSTEM

**[1]Prof. Pawar V.D, [2]Miss. Narune A.G, [3]Miss. Kanagi S.S**
Department of Computer Engineering, SVSMD'S KKI Polytechnic, Akkalkot
vdpawarco@gmail.com

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## ABSTRACT

Now a day college bells are operated manually. It replaces the manual switching of the Bell in the College. This project is to implement IOT Based Automatic Alarm system takes over the task of ringing the bell at predetermined time. It saves manpower, time and ultimately money and also gives highest accuracy. The main components of this system are WIFI module, servo motor, and bell.

When this time equals to the Bell Ringing time, then the Relay for the Bell is switched on. The Bell Ringing time can be edited at any Time, so that it can be used at Normal Class Timings as well as Exam Times. Required power supply is given through power supply unit. Adriano keeps control on function of system. The main aim of this project is to implement IOT Based Automatic Alarm system using Adriano UNO. The main task of this system is to ring the bell at predetermined time with accuracy and without any human intervention.

## I. INTRODUCTION

In any college, the classes are organized in periods and beginning of a period or break is alerted to the students and teachers by ringing the college bell. Conventionally, the school bell is ringed by a peon or multi-tasking assistant. What if there would be a microcontroller based automatic college bell which rings itself according to a fed timetable. This project is the implementation of same functionality.

The project is IOT based automatic bell system which can be configured for every class of the school. It is assumed that the school has six periods organized in a day for different subjects and has one break in between. The break occurs after the third periods.

After the sixth period, the college is over. The project allows setting duration for each period and assigning subject from a list of subjects to each period. The user can set the time-table for six days of the week from Monday to Saturday.

IOT based bell is a project where automatic bell will be played as per the time table given on server. We can change the time table at any moment. In this project we are using Arduino, WIFI module, servo motor to play the bell. We will add the time table to server continuous thread checks the time table and sends the play command to arduino. Arduino will sends command to servo motor which will become ON and plays bell then again becomes OFF this will repeat for some time and again it will become OFF for the next Schedule

## .LITERATURE SURVEY

A Survey was carried on various existing automated bell systems to compare with the proposed model and their choice of components. Many automated bell systems were built using 80C51 and AT89S52 microcontroller with DS1307 RTC [8, 9, and 10]. 80C51 microcontroller is of CISC architecture, hence lot of effort in programming

is needed even to execute basic tasks. Also it does not provide flexibility in incorporating peripherals. All the commercially available models have a 3 button input method. Meaning, every time a person wants to set the number '9', they will have to press the increment or decrement button 9 times at least.

In our project we are used ESP8266 Wi-Fi module. This module as the arduino IDE now supports the ESP8266.This is much easier to use than programming with another IDE's. In this arduino function are complete usable including Wi-Fi, web server, the GPIO pins, timers using tricker, wire library, servo, real time clock and etc Also, the existing models make use of DS1307 RTC which is less accurate in terms of time keeping as it is not temperature compensated .

Thus the components chosen for the following project helped us to overcome flaws and limitations of the existing system.

## III. IMPLEMENTATION

**nodemcu development kit with PC connection steps**

- First connect nodemcu Development Kit with PC, After setting up Arduino IDE for nodemcu, open Arduino IDE and write simple sketch of serial print
- .Get start the download the arduino IDE.
- First Download Adriano IDE Now on Preference window, Enter below link in Additional Boards Manager URLS.
- Now close Preference window and go to Tools -> Board -> Boards Manager in Boards Manager window
- Type esp in the search box, esp8266 will be listed there below. Now select latest version of board and click on install.
- After installation of the board is complete, open Tools->Board->and select nodemcu 1.0(esp-12E module).
- First connect nodemcu Development Kit with PC
- After setting up Arduino IDE for NodeMCU, open Arduino IDE and write simple sketch of serial print
- Ensure that you have selected the correct board and Also make sure that you have selected the appropriate COM port.
- Now compile & upload the written sketch directly to the NodeMCUDev Kit by clicking on upload button.
- Now Click on Serial Monitor (upper right corner) option to check output on serial monitor window of Arduino IDE.

**nodemcu with servo motor connection steps**

- The next job is to connect your servo motor.
- If your servo has Yellow- Red - Black wires, then connect it as follows
- Yellow wire connects to Digital pin D1.
- Brown wire connects to GND pin
- Red wire connects to 3V3 pin
- To get started we need to download the Arduino IDE (Integrated Development Environment) and some necessary drivers.
- After downloading the Arduino IDE navigate to
- Click OK and then navigate to
- Now you have setup the Arduino IDE to work along with the NodeMCU.
- The next step is to write some code to control the Servo.

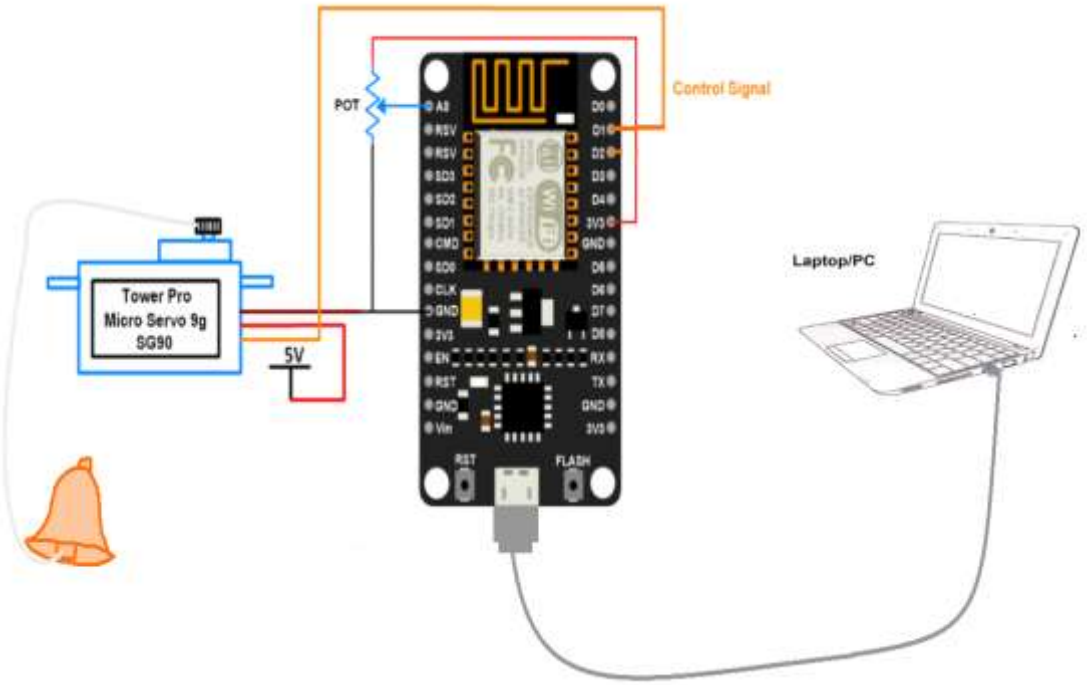
- Download the "Servo.ino" file and open it up in the Arduino IDE. Then Create a new sketch and paste the code below in the arduino IDE and hit Upload.

**Application**

- School
- Church
- Market
- Washing Machine
- Microwave ovens

## IV. HELPFULHINTS

### *A. Figures*




## CONCLUSION

IOT Based Automatic Alarm System can be successfully designed and can be applicable in school and colleges as per to save manpower and also to save time it's a cost effective project which can be built using easily available equipment and can be used in real time in the school and in the colleges this can be included in every educational institution as per the timing which can be easily reprogrammed by a common laymen and can also vary timing for some classes as per the schedule of the school. To overcome this, we have decided to prepare the circuit which will be operated automatically and the ringing of bell will start by its given time.

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