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Microcontroller controlled automatic college bell and display using RF

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Abstract:

The advantage of this design is that the bell ring automatically without any man power to a great degree of accuracy and hence takes over the manual task of switching on/off the college bell with respect to time. It saves the man power. The ***PIC*** *microcontroller 16F877A is used to control all the functions. It gets the time through the keypad and stores it in its memory. when this programmed time equals the real time then the bell is switched on for a predetermined time. The user can modify the changes and reuse the program for the different time period. Here the automation is used to ring the bell automatically not only for the 7 hour lecture schedule. It also used for exam mode as well as timer mode. For this a microcontroller has to be programmed using the C language or assembly language for controlling the circuits.*

Key words:

Automation, PIC micro controller, time selecting unit, keypad.

Introduction:

In today's life automation is very important in real time for saving the time and its accuracy. Each and every second's is precious for everyone in the competitive world. "Time is the most valuable thing a man can spend, Nothing can stop automation" so here automation is used to give the accuracy and save the man power. In now a day's school/college bells are operated manually. Hence there is a big question of accuracy also there is a necessity of man power and money. Hence here we have presented a system which saves our man power and give accuracy .A bell is an instrument used in schools/colleges that indicates the students when it is time to go to the class in the morning and when it is time to change classes during the day. No other instrument can be such a work. So it is an important instrument in both Primary and Secondary schools and even in the real time. When the equals in the real time. When this time equals to the bell ringing time, then relay for the bell is switched on. The Real time clock is displayed on LCD the

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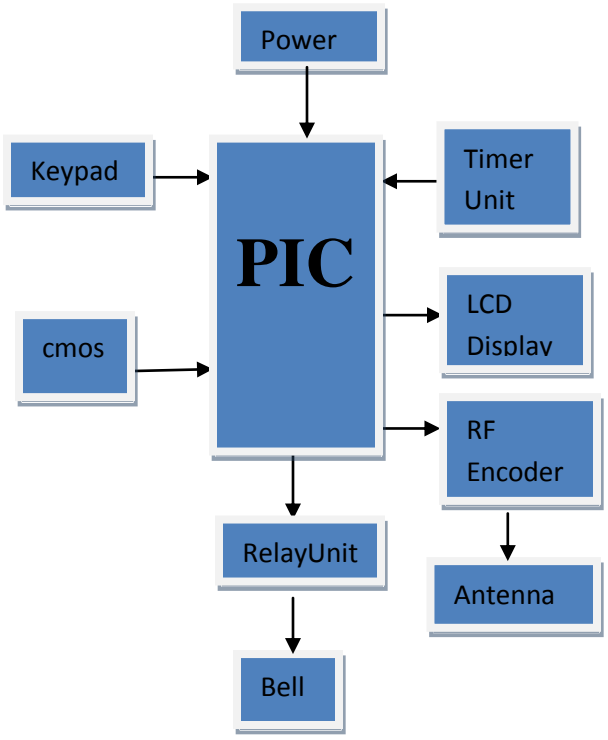
industries and other business where the bell times plays a critical role throughout the day and also to literacy awareness the number of colleges, schools and institutions are rapidly increasing. At present bells for periods in schools are operated manually. After every classes, once employee is engaged into operating the bell automatic use bell helps us to avoid this. [6] discussed about a project, in this project an automatic meter reading system is designed using GSM Technology. The embedded micro controller is interfaced with the GSM Module. This setup is fitted in home.

TRANSMITTER BLOCK:



POWER SUPPLY:

On the power supply of the circuit the circuit is used to convert AC supply into DC supply. The supply is basically used for LCD display, microcontroller and also to all the functions of the circuit.

PIC MICROCONTROLLER:

PIC stand for peripheral interface controller it is very convenient choice to get start with microcontroller project.PIC is a smallest microcontroller and programmed to carry out a huge range of tasks. These are found in many electronic device such as computer controlled and embedded system.

LCD DISPLAY:

It is used to current time and various messages. LCD (Liquid crystal display) screen is an electronic display model and find a wide range of applications. A 16X2 LCD display is very basic module and is very commonly used in various devices and circuits.

RELAY:

A relay is an electrically operated switch. It is used to controlled a circuit by a separate low power signals.

RELAY DRIVER:

A relay driver is a electromagnetic switch. It is used to switch high current on and off signals.

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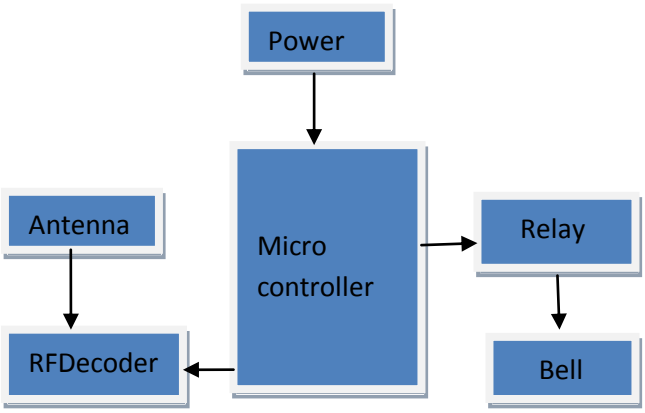
REAL TIME CLOCK:

A real time clock is refers to the device in personal computer severs and embedded systems. RTC is present almost any electronic device which need to keep accurate time.

BELL CONTROLLER:

It gives the bell sound according to the given time. It is used to hear the bell sound after particular time period programmed in the circuit. We can also reuse the program again and again for the different time period.

RECEIVER BLOCK:



RADIO FREQUENCY:

RF is a small electronic device to transmit and receive radio signals between two devices. In embedded system it is often desirable to communicate with another device wirelessly.

HARDWARE TOOLS:

- LCD Display
- PIC Micro controller
- Power supply
- Keypad
- Relay unit
- Bell
- Timer switch unit
- RF
  - Encoder
  - decoder
- Micro controller (Atmel)

SOFTWARE TOOLS:

Keil Version

C Programming

CONCLUSION:

Present day's we are living in the world of automated system where everything is controlled automatically using the intelligent system like microcontroller and embedded system is very important in the real time for ringing the bell it saves the man power. **A** conclusion is simply a place where we get tired of thinking but the automation will not get tired it give accuracy without any man power.

We have constructively combine the college bell with LED/LCD to display the notices. The display of project also increases it effectiveness. Time being a major factor in all of our lives has to be utilized properly and it is a very efficient device for the time management.

The circuit is simple to prepare and easy to install. We can say that it will be much useful for colleges or schools or other educational institutions.

FUTURE DEVELOPMENT:

A future development can be done with the GSM. A lot more advancement can be done in this design. The advantage of that the timings can be edited according to an individual's requirement. Hence it can be reused infinite number of times. Another advantage is that it provides security since it uses a password. It can also be made by using gsm. Through gsm the RTC can be controlled and so the timings can be edited.

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