# AUTOMATIC QUIZ BUZZER SYSTEM

## 21LF02 MINI PROJECT I
## REPORT

*Submitted by*

| | |
|---|---|
| **HARINI PRIYA S** | **(717821L214)** |
| **RATHINAVEL P** | **(717821L241)** |
| **SATHISH SHARMA J** | **(717821L246)** |
| **THAKSHITHA G** | **(717821L258)** |

*in partial fulfillment for the award of the degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

KARPAGAM
COLLEGE OF ENGINEERING
Rediscover | Refine | Redefine

Accredited by NAAC with 'A+' grade
Autonomous | Affiliated to Anna University
(An ISO 9001:2015 and ISO 14001:2015 Certified Institution)

**MAY 2023**

KARPAGAM
COLLEGE OF ENGINEERING
Rediscover | Refine | Redefine

Accredited by NAAC with 'A+' grade
Autonomous | Affiliated to Anna University
(An ISO 9001:2015 and ISO 14001:2015 Certified Institution)

# AUTOMATIC QUIZ BUZZER SYSTEM

*Bonafide record of work done by*

| | |
|---|---|
| **HARINI PRIYA S** | **(717821L214)** |
| **RATHINAVEL P** | **(717821L241)** |
| **SATHISH SHARMA J** | **(717821L246)** |
| **THAKSHITHA G** | **(717821L258)** |

*Dissertation submitted in partial fulfilment of the requirements for the degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**MAY 2023**

| | |
|---|---|
| **……………………..** | **...…………………..** |
| **Dr. C.Priya M.E.,Ph.D.,** | **Dr. S.Deepa M.E.,Ph.D.,** |
| Faculty guide | Head of the Department |

Certified that the candidate was examined in the viva-voce examination held on ………………….

………………..
(Internal Examiner)

# ACKNOWLEDGEMENT

We would like to show our gratitude to the management of Karpagam College of Engineering **Dr. R. Vasanthakumar, BE., (Hons), D.Sc.**Chairman and Managing Trustee, Karpagam Educational Institutions for providing us with all sorts of supports in completion of this project.

We express our sincere and profound gratitude to our Principal **Dr.P.Karthigaikumar M.E., Ph.D** for his guidance and sustained encouragement for the successful completion of this project.

We feel immense pleasure in expressing our humble note of gratitude to our Head of the Department **Dr.S.DEEPA, M.E., Ph.D,** Associate Professor for his remarkable guidance and besides his positive approach he has offered incessant help in all possible way from the beginning.

We are grateful to our Mini Project Coordinator **Dr.C.Priya M.E., Ph.D.,** Associate Professor, Department of Electronics and Communication Engineering for her valuable suggestions and guidance throughput the course of this Miniproject.

We are thankful to our Miniproject guide **Dr.C.Priya M.E., Ph.D.,** Associate Professor, Department of Electronics and Communication Engineering for her valuable suggestions and guidance throughout the arise in the course of the Miniproject.

We also extend our thanks to other faculty members, parents and friends for providing their moral support in successfully completing thisMini project.

# INDEX

| CHAPTERNO | TITLE | PAGENO |
|---|---|---|
| | ABSTRACT | i |
| | LIST OF FIGURES | ii |
| | LIST OF TABLES | iii |
| 1 | INTRODUCTION | 1 |
| | 1.1 Introduction to the Project | 1 |
| | 1.2 MicroController | 2 |
| | 1.2.1 Pin Description | 3 |
| | 1.2.2 Uses of 8051 | 7 |
| 2 | PROJECT MODULES | 9 |
| | 2.1 Circuit Diagram of the Project | 9 |
| | 2.2 Components Required | 10 |
| | 2.2.1 Components Description | 11 |
| | 2.3 Circuit Connection | 15 |
| | 2.4 Operation | 15 |
| | 2.5 Input Specification | 16 |
| | 2.6 Result | 17 |
| 3 | CONCLUSION | 19 |
| | REFERENCE | 20 |
| | APPENDIX | 21 |

# ABSTRACT

This project show you the design and working of an 8 Channel Quiz BuzzerCircuit using Microcontroller (8051), which tells us which team has pressed the button first in a quiz or game show.Quiz buzzers are used often at places like educational institutions and gameshows, where it is required for the organizers to know who pressed the button first. Conventional systems require human intervention to decide which team haspressed the button and this system can be erroneous and even biased.Another problem arises when two members pressed the button at a negligible interval and it is difficult to guess who has pressed the buzzer first. This project is an Automatic Quiz Buzzer System in which, when more than one team presses the buzzer, the delay between the two button presses is accurately taken into account and the corresponding number is displayed.

# LIST OF FIGURES

| FIGURE NO | LIST OF FIGURES | PAGE NO |
|---|---|---|
| 1.1 | Pin diagram of 8051 | 2 |
| 2.1 | Automatic quiz buzzer system | 8 |
| 2.2 | Seven Segment Display | 11 |
| 2.3 | SPST Push Buttons | 12 |
| 2.4 | 9V Buzzer | 13 |
| 2.5 | Input | 17 |
| 2.6 | Player 5 Presses the switch | 17 |
| 2.7 | Player 6 Presses the switch | 18 |
| 2.8 | Reset | 18 |

# LIST OF TABLES

| TABLENO | LIST OF TABLES | PAGENO |
|---|---|---|
| 1.1 | Special Features of Port 3 | 4 |

# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction to the Project

The quiz buzzer systems are widely used in school, colleges and TV programs. The team which presses the buzzer earliest is entitled to give the answer. At times it becomes very difficult to identify which team has pressed the button when two teams press the buzzer within a very small time gap.Quiz buzzer systems also in live quiz competitions broadcasted via television. A Quiz buzzer allows any user to press the switch quickly in response to a question posed during competitions that are conducted in schools and colleges. The pressed switch gives a buzzing sound or alarm for some duration of time and the reaction time is very small. Buzzers can also be used in different applications such as annunciator panels, electronic metronome microwave ovens, and other household applications. In such cases the decision can be biased due to human intervention. The quiz buzzer presented here takes care of the aforesaid problem. This quiz buzzer disables the other inputs as soon as the first buzzer is pressed. This quiz buzzer can be used for a maximum of eight teams. It is build around 8051 microcontroller (AT89S52).The 8 Channel Quiz Buzzer Circuit using Microcontroller is a simple embedded system with a set of 8 push buttons beingthe input devices, a microcontroller as the main controller and the output devicesbeing a buzzer and a display. A Microcontroller based buzzer circuit is a programmable timer wherein the time duration can be varied by changing the program code of the microcontroller..The whole operation is carried out by a microcontroller through a program written in C language and dumped inside themicrocontroller. When one of the buttons is pressed, the buzzer starts ringing and the corresponding number is displayed on the 7 segment display.

## 1.1 Microcontroller

8051 microcontroller is designed by Intel in 1981. It is an 8-bit microcontroller. It is built with 40 pins DIP (dual inline package), 4kb of ROM storage and 128 bytes of RAM storage, 2 16-bit timers. It consists of are four parallel 8-bit ports, which are programmable as well as addressable as per the requirement. An on- chip crystal oscillator is integrated in the microcontroller having crystal frequency of 12 MHz.

The pin diagram of 8051 microcontroller (Fig 1.1)shown below:

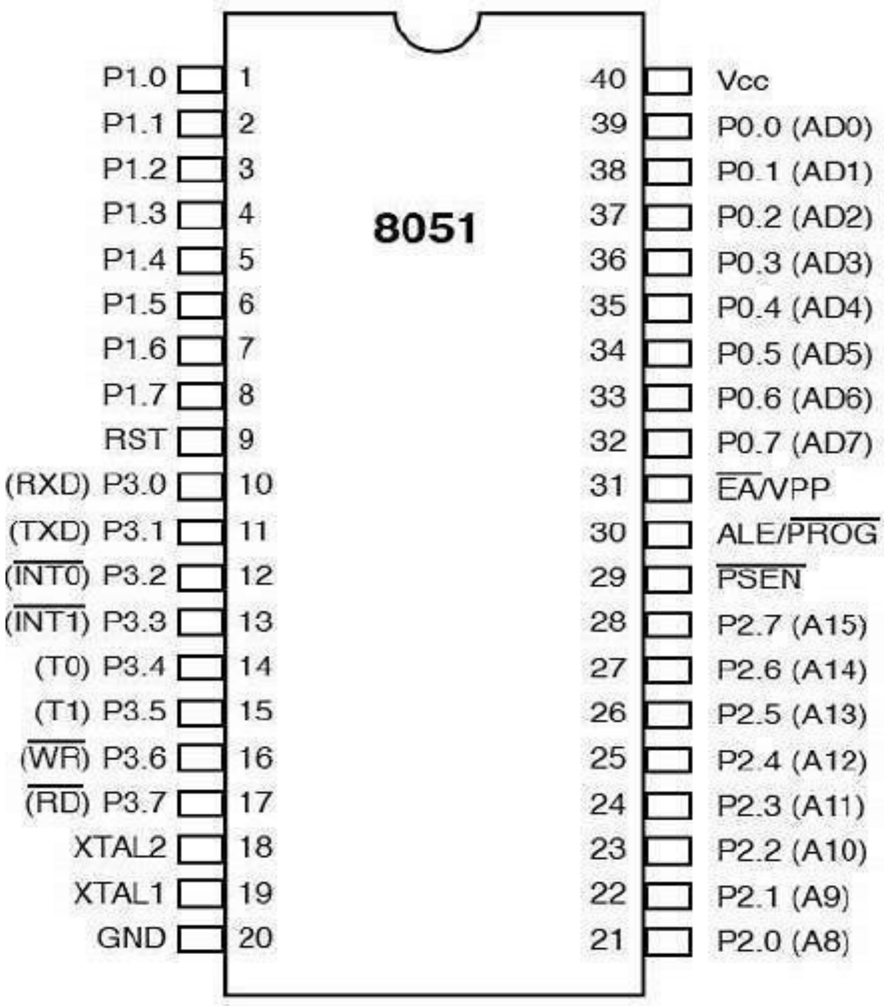


Fig 1.1 Pin diagram of 8051

### 1.2.1 Pin Description

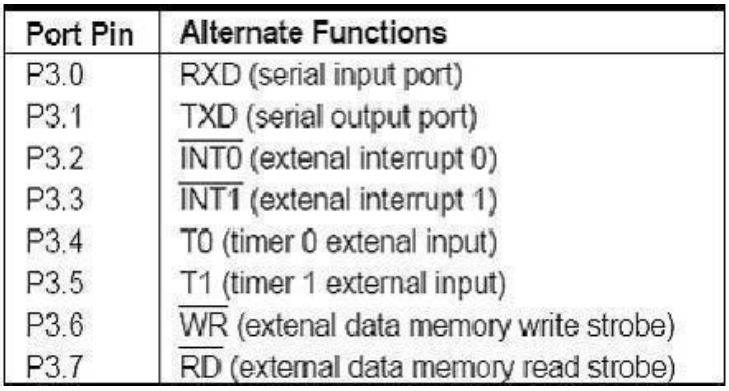
**Port 0** : Port 0 is an 8-bit open drain bidirectional I/O port. As an output port each pin can sink eight TTL inputs. When 1‟s are written to port 0 pins, thepins can be used as high impedance inputs. Port 0 may also be configured to be the multiplexed low order address/data bus during accesses to external programand data memory. In this mode P0 has internal pull-ups. Port 0 also receives thecode bytes during Flash programming, and outputs the code bytes duringprogram verification. External pull-ups are required during program verification.

**Port 1:** Port 1 is an 8-bit bidirectional I/O port with internal pull-ups. The Port output buffers can sink/source four TTL inputs. When 1s are written to Port 1 pins they are pulled high by the internal pull-ups and can be used as inputs. As inputs, Port 1 pins that are externally being pulled low will source current (IIL) because of the internal pull-ups. Port 1 also receives the low-order address bytes during Flash programming and program verification.

**Port 2:** Port 2 is an 8-bit bidirectional I/O port with internal pull-ups. The Port 2 output buffers can sink/source four TTL inputs. When 1s are written to Port 2 pins they are pulled high by the internal pull-ups and can be used as inputs. As inputs, Port 2 pins that are externally being pulled low will source current (IIL) because of the internal pull-ups. Port 2 emits the high-order address byte during fetches from external program memory and during accessesto external data memory that uses 16-bit addresses.In this application it uses strong internal pull-ups when emitting 1s. During accesses to external data memory that uses 8-bit addresses.Port 2 emits the contents of the P2 Special Function Register. Port 2 also receives the high-order address bits and some control signals during Flash programming and verification.

**Port 3:** Port 3 is an 8-bit bidirectional I/O port with internal pull-ups. The Port3 output buffers can sink/source four TTL inputs. When 1s are written to Port 3 pins they are pulled high by the internal pull-ups and can be used as inputs. As inputs, Port 3 pins that are externally being pulled low will source current (IIL)because of the pull-ups. Port 3 also serves the functions of various special features of the AT89C51 as listed in Table 1.1:

Table 1.1 Special Features of Port 3.



| Port Pin | Alternate Functions |
|---|---|
| P3.0 | RXD (serial input port) |
| P3.1 | TXD (serial output port) |
| P3.2 | $\overline{\text{INT0}}$ (extenal interrupt 0) |
| P3.3 | $\overline{\text{INT1}}$ (extenal interrupt 1) |
| P3.4 | T0 (timer 0 extenal input) |
| P3.5 | T1 (timer 1 external input) |
| P3.6 | $\overline{\text{WR}}$ (extenal data memory write strobe) |
| P3.7 | $\overline{\text{RD}}$ (external data memory read strobe) |

P3.0 (RXD) : 10th pin is RXD (serial data receive pin) which is for serial input.Through this input signal microcontroller receives data for serial communication.

P3.1 (TXD) : 11th pin is TXD (serial data transmit pin) which is serial output pin. Through this output signal microcontroller transmits data for serial communication.

P3.2 and P3.3 (INT0′, INT1′ ) : 12th and 13th pins are for External Hardware Interrupt 0 and Interrupt 1 respectively. Whe interrupt is activated(i.e. when it is low), 8051 gets interrupted in whatever it is doing and jumps to the vector value of the interrupt (0003H for INT0 and 0013H for INT1) and starts performing Interrupt Service Routine (ISR) from that vector location.

P3.4 and P3.5 (T0 and T1) : 14th and 15th pin are for Timer 0 and Timer 1 external input. They can be connected with 16 bit timer/counter.

P3.6 (WR’) : 16th pin is for external memory write i.e. writing data to the external memory.

P3.7 (RD’) : 17th pin for external memory read i.e.reading data from memory.

### RST

Reset input. A high on this pin for two machine cycles while theoscillator is running resets the device.

### ALE/PROG

Address Latch Enable output pulse for latching the low byte of theaddress during accesses to external memory.This pin is also the program pulse input (PROG) during Flash programming. In normal operation ALE is emitted at a constant rate of 1/6 the oscillator frequency, and may be used for external timing or clocking purposes. Note, however, that one ALE pulse is skipped during each access to external Data Memory. If desired, ALE operation can be disabled by setting bit 0 of SFR location 8EH. With the bit set, ALE is active only during a MOVXor MOVC instruction. Otherwise, the pin is weakly pulled high. Setting the ALE-disable bit has no effect if the microcontroller is in external execution mode.

### PSEN

Program Store Enable is the read strobe to external program memory. When the AT89C51 is executing code from external program memory, PSEN isactivated twice each machine cycle, except that two PSEN activations areskipped during each access to external data memory.

### EA/VPP

External Access Enable. EA must be strapped to GND in order to enable the device to fetch code from external program memory locations starting at 0000H up to FFFFH. Note, however, that if lock bit1 is programmed, EA will be internally latched on reset. EA shouldbe strapped to VCC for internal program executions. This pin also receives the 12-volt programming enable voltage (VPP) during Flash programming, for parts that require 12-volt VPP.

### XTAL1

Input to the inverting oscillator amplifier and input to the internalclockoperating circuit.

### XTAL2

Output from the inverting oscillator amplifier.

### Oscillator Characteristics

XTAL1 and XTAL2 are the input and output, respectively, of aninverting amplifier which can be configured for use as an on-chip oscillator.Either a quartz crystal or ceramic resonator may be used. To drivethe device from an external clock source, XTAL2 should be left unconnected while XTAL1 is driven.There are no requirements on the duty cycle of the external clock signal, since the input to the internal clocking circuitry is through a divide-by-two flip-flop, but minimum and maximum voltage high and low time specifications must be observed.

### Power Down Mode

In the power down mode the oscillator is stopped, and the instruction that invokes power down is the last instruction executed. The on-chip RAM and Special Function Registers retain their values until the power down mode is terminated. The only exit from power down is a hardware reset. Reset redefines the SFRs but does not change the onchip RAM. The reset should not be activated before VCC is restored to its normal operating level and must be held active long enough to allow the oscillator to restart and stabilize. Power down and Idle mode features are used to save power in microcontrollers. 8051 has an inbuilt power-saving feature which is useful in embedded applications where power consumption is the main constraint.

### IDLE Mode

In idle mode, the CPU puts itself to sleep while all the on-chip peripherals remain active.The content of the on-chip RAM and all the special functions registers remain unchanged during this mode. The idle mode can be terminated by any enabled interrupt by hardware reset. It should be noted that when idle terminated by a hardware reset, the device normally resumes program execution, from where it left off, up to two machine cycles before the internal reset algorithm takes control. On-chip hardware inhibits access to internal RAM in this event, but access to the port pins is not inhibited. To eliminate the possibility of an unexpected write to a port pin when Idle is terminated by reset, the instruction following the one that invokes Idle should not be one that writes to a port pin or to external memory.

### 1.2.2 Uses of the 8051 microcontroller :

The 8051 microcontroller is used for various purposes in embedded systems.Some ofthe main uses of the microcontroller are:

**Interfacing with external devices:** The 8051 microcontroller has several input/output pins that can be used for interfacing with external devices such assensors, actuators, displays, and communication modules. The pin diagram provides the information about the location of these pins, their functionalities,and their electrical characteristics.

**Programming the microcontroller:** The 8051 microcontroller can be programmed using various programming languages such as Assembly, C, andBASIC. The pin diagram provides the information about the pins that are usedfor programming the microcontroller, such as the PSEN pin and the ALE pin.

**Debugging and testing:** The pin diagram provides access to the internal signals of the microcontroller, such as the address and data buses, which can beused for debugging and testing the microcontroller. Special hardware tools such as logic analyzers and oscilloscopes can be connected to the pins to monitor thesignals and diagnose any issues in the system.

**Expansion and customization:** The pin diagram provides the flexibility to expand and customize the functionality of the microcontroller by connecting external devices and peripherals. For example, additional memory can be addedby connecting external RAM or ROM chips to the address and data buses.

## Disadvantages

- The micro-controllers have a complex architecture than that of a micro-processor. Hence, it is difficult to understand their functionality.
- As micro-controllers are RISC micro-controllers, the length of program is big.
- Only a single WREG/A is present.
- They cannot access the program memory.
- The micro-controller cannot be directly interfaced with high power devices.

# CHAPTER 2

# PROJECT MODULES

## 2.1 CIRCUIT DIAGRAM:

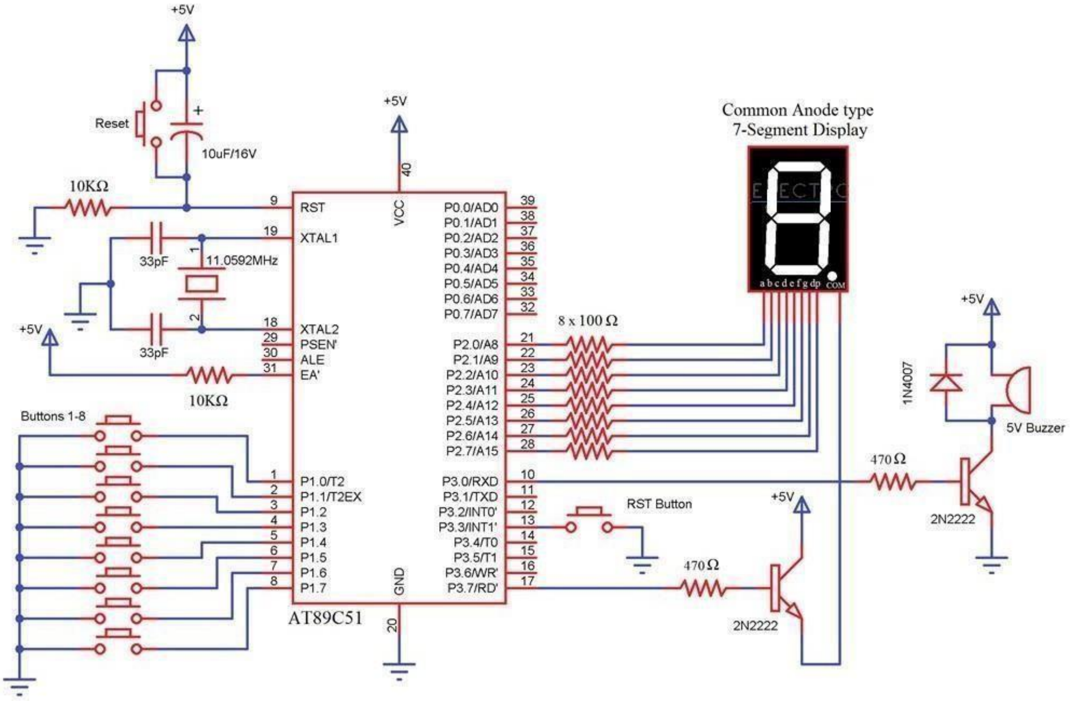


Fig 2.1 Automatic quiz buzzer system

Fig 2.1 includes **Reset Circuit Design:** The reset resistor is selected such that the voltage at the reset pin, across this resistor is at minimum of 1.2V and the width of thepulse applied to this pin is greater than 100 ms..

**Oscillator Circuit Design:** The oscillator circuit is designed using a crystal oscillatorof 11.0592 Mhz and two ceramic capacitors each 33pF. The crystal is connected between pins 18 and 19 of the microcontroller.

**Microcontroller Interfacing Design:** The set of 8 push buttons are interfaced to port P1of the microcontroller and a buzzer is interfaced to the port pin P3.3. The 7 segment display is interfaced to the microcontroller such that all the input pins are connected to port P2.

## 2.2 SYSTEM COMPONENTS

- AT89S52 (8051 Microcontroller)
- 7 Segment Display (Common Anode is used in this project)
- Push Buttons –9
- 2N2222 NPN Transistors – 2
- 9V Buzzer
- MCU 8051 IDE Software
- 8051 Programmer
- 9V Rechargable Battery

### 2.2.1 COMPONENTS DESCRIPTION

**AT89S52(8051 Microcontroller)**

The AT89S52 comes from the popular 8051 family of Atmel Microcontrollers. It is an 8-bit CMOS microcontroller with 8K as Flash memoryand 256 bytes of RAM. Since it is similar to the trust worthy 8051 architecture, these microcontrollers are as per industry standard. It has 32 I/O pins comprising of three 16-bit timers, external interrupts, full-duplex serial port, on- chip oscillator and clock circuitry.The Microcontroller also has Operating mode, Idle Mode and Power down mode which makes it suitable for battery operated applications. AT89S52 has two power modes, i.e., idle mode in which stops processing unit stops while other peripheral keep working and power-down mode that halts oscillator and other functions and save RAM contents.Few considerable drawback of the microcontroller is that it does not have in-built ADC and does not support SPI or I2C protocols. However you can utilise external modules for the same.Watchdog timer to work and wake the device up from sleep mode and can be activated or deactivated through programming

**AT89S52 Features**

- It is a high-performance CMOS microcontrollers with Flash Technology
- The unit operates at a wide range of 4 – 5.5 volts, so it is a low power IC.
- The device supports In-system Programming both page and byte mode for the Flash memory.
- The operational frequency is up to 33MHz but can be altered for saving energy.
- The module has a quick programming time with 10,000 read/write cycles.
- The Random Access memory is organized in 256×8 bits.
- The serial communication takes place through a full duplex UART module.
- It comes with a reset option, three 16-bit timers and eight interrupts.
- AT89S52 has two power modes, i.e., idle mode in which  stops processing unit stops while other peripheral keep working and power-down mode that halts oscillator and other functions and save RAM contents.
- Watchdog timer to work and wake the device up from sleep mode and can be activated or deactivated through programming

**Additional Feautures:**

- 8K Bytes of In-System Programmable (ISP) Flash Memory
- Fully Static Operation: 0 Hz to 33 MHz
- Three-level Program Memory Lock
- 256 x 8-bit Internal RAM
- 32 Programmable I/O Lines
- Three 16-bit Timer/Counter
- Eight Interrupt Sources
- Full Duplex UART Serial Channel

### Seven Segment Display

Seven segment displays(fig 2.2) are the output display device that providesa way todisplay information in the form of images or text or decimal numbers which is an alternative to the more complex dot matrix displays. It is widelyused in digital clocks, basic calculators, electronic meters, and other electronic devices that display numerical information. It consists of seven segments of light- emitting diodes (LEDs) which are assembled like numerical 8.

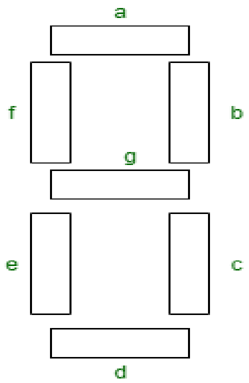


Fig 2.2 Seven Segment Display

### SPST Push Buttons

Push button has the current rating 3A@ 125V AC and 1A@ 250V AC. TheInitial Contact Resistance is 20 Meg ohm (Max.) at DC 2.5-1A. NO SPST Push button switch is a Single pole Push to Make (Push Button also known as Push toMake) and only single circuit can be controlled using it.

### Pin Configuration

Push button can be connected in any direction. SPST Push Buttons have No polarity as shown in Fig 2.3.

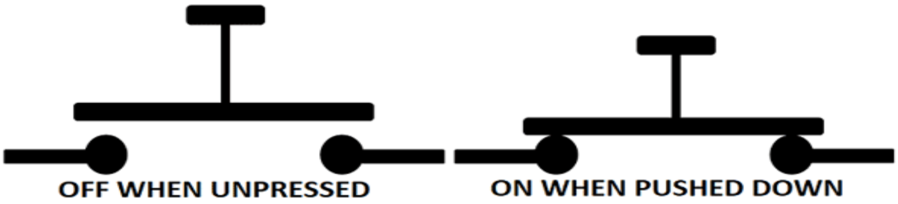


Fig 2.3 SPST Push Button

**9V Buzzer**

A buzzer (fig 2.4)is a small yet efficient component to add sound features to our project/system. It is very small and compact 2-pin structure hence can beeasilyused on breadboard, Perf Board and even on PCBs which makes this a widely used component in most electronic applications.

**Buzzer Features and Specifications**

- Voltage : 9 -  12VDC
- Type: Continuous Buzzer
- Decibel : > 100db/30cm @12V
- Resonant frequency : 2500Hz (+/- 300 HZ)
- Operating Temperature : -20 to 70 C

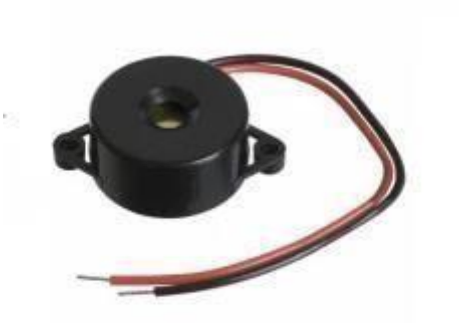


Fig 2.4 9V Buzzer

**MCU 8051 IDE**

MCU 8051 IDE is a free software integrated development environment for microcontrollers based on the 8051. MCU 8051 IDE has a built-in simulator not only for the MCU itself, but also LCD displays and simple LED outputs as well as button inputs. It supports two programming  languages: C (using SDCC) and  assembly  and runs on both Windows and Unix-based operating systems, such as FreeBSD and Linux. MCU simulator with many debugging features: register status, step by step, interrupt viewer, external memory viewer, code memory viewer, etc.

**Features:**

- MCU simulator with many debugging features: register status, step by step, interrupt viewer, external memory viewer, code memory viewer, etc.
- Simulator for certain electronic peripherals like LEDs, LED displays, LED matrices, LCD displays, etc.
- Support for C language
- Native macro-assembler
- Support for ASEM-51 and other assemblers
- Advanced text editor with syntax highlighting and validation
- Support for vim and nano embedded in the IDE
- Simple hardware programmer for certain AT89Sxx MCUs
- Scientific calculator: time delay calculation and code generation, base converter, etc.
- Hexadecimal editor

## 9V Rechargeable Battery

The nine-volt battery, or 9-volt battery, is an electric battery that supplies a nominal voltage of 9 volts. Actual voltage measures 7.2 to 9.6 volts, depending on battery chemistry. Batteries of various sizes and capacities are manufactured;a very common size is known as PP3, introduced for early transistor radio. Most battery voltage testers and chargers that can also test nine-volt need another snap clip to hold the battery, while cylindrical batteries often share a holder that may be adjustable in size.

## 2.3 CIRCUIT CONNECTION

This microcontroller consists of 40 pins, in which 32 pins are used for input and output purpose. In this system, total nine input pins are used, all the eight input pins are connected as switches to the port1 of the microcontroller, and the ninth pin is set as a reset button for resetting the buzzer system. The eight switches are connected to the buzzer; if any of the switches is pressed, then the buzzer gets blown. A Seven-segment display, which displays the information of the switch that is being pressed, is interfaced with the port 2 of the microcontroller. The microcontroller is programmed in such a way that if any switch is pressed, then the corresponding switch number is displayed on the Seven Segment Display. The Power supply is connected to the 40 and 31 pins of the microcontroller and the buzzer.

## 2.4 OPERATION

Once the circuit is powered, the compiler will initialize the stack pointer andthe variables having the non-zero initial values and perform other initialization process and then calls the main function. It then checks if any of the buttons is pressed.In other words the microcontroller scans for any of its input pins at port P1 to be zero or at logic low level. In case a button is pressed, the display function iscalled by passing the corresponding number. The microcontroller then sends the relevant signals to the port connected to the 7 segment display.The microcontroller will turn on the buzzer for a second and turns it off but the number will be continously displayed on the 7 segment display until the RST button is pressed.In Other Words.Output will be available in two modes Common Cathode (CC) and Common Anode (CA) and Available in many different sizes like 9.14mm,14.20mm,20.40mm,38.10 mm,57.0 mm and 100 mm (Commonly used/available size is 14.20mm)Available colours: The microcontroller can activate the buzzer for a second and turns it off however the quantity are unendingly showed on the seven section display till the RST button is ironed.

## 2.5 INPUT SPECIFICATION

The circuit involves using five major components – 8051 Microcontroller,SPST Push Buttons, a buzzer and a common anode 7segment display.

**Reset Circuit Design:**

The reset resistor is selected such that the voltage at the reset pin, across this resistor is at minimum of 1.2V and the width of the pulse applied to this pin is greater than 100 ms. Here resistor is selected of 10KΩ and a capacitor of 10μF.

**Oscillator Circuit Design:**

The oscillator circuit is designed using a crystal oscillator of 11.0592 Mhz and two ceramic capacitors each 33pF. The crystal is connected between pins 18 and 19 of the microcontroller.

**Microcontroller Interfacing Design:**

The set of 8 push buttons are interfacedtoport P1 of the microcontroller and a buzzer is interfaced to the port pin P3.3.The 7 segment display is interfaced to the microcontroller such that all the input pins areconnected to port P2.

## OUTPUT SPECIFICATION

Available in two modes Common Cathode (CC) and Common Anode (CA)Available in many different sizes like 9.14mm,14.20mm,20.40mm,38.10mm,57.0mm and 100mm (Commonly used/available size is 14.20mm)Available colours: White, Blue, Red, Yellow and Green (Res is commonly used)Low current operationBetter, brighter and larger display than conventional LCD displays.Current consumption : 30mA / segmentPeak current : 70mA.It has Dual Data Pointer,Power-off Flag,Fast Programming Time,Flexible ISP Programming (Byte and Page Mode), Green (Pb/Halide-free) Packaging Option.

## 2.6 RESULT

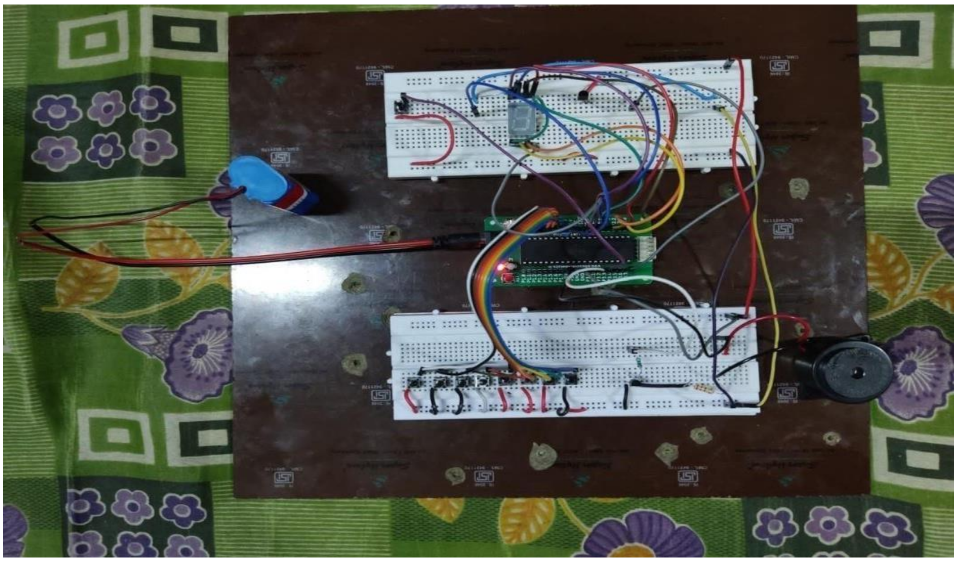


Fig 2.5 Input

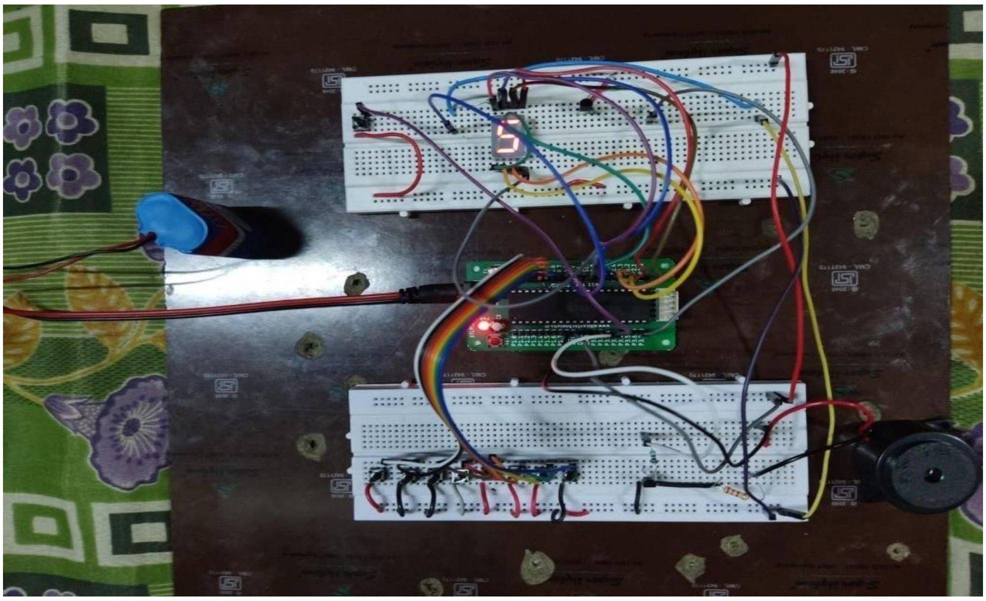


Fig 2.6 Player 5 Presses the switch

Fig 2.6 shows when Player 5 presses the button,the corresponding switch number is displayed and the Buzzer is turned on.

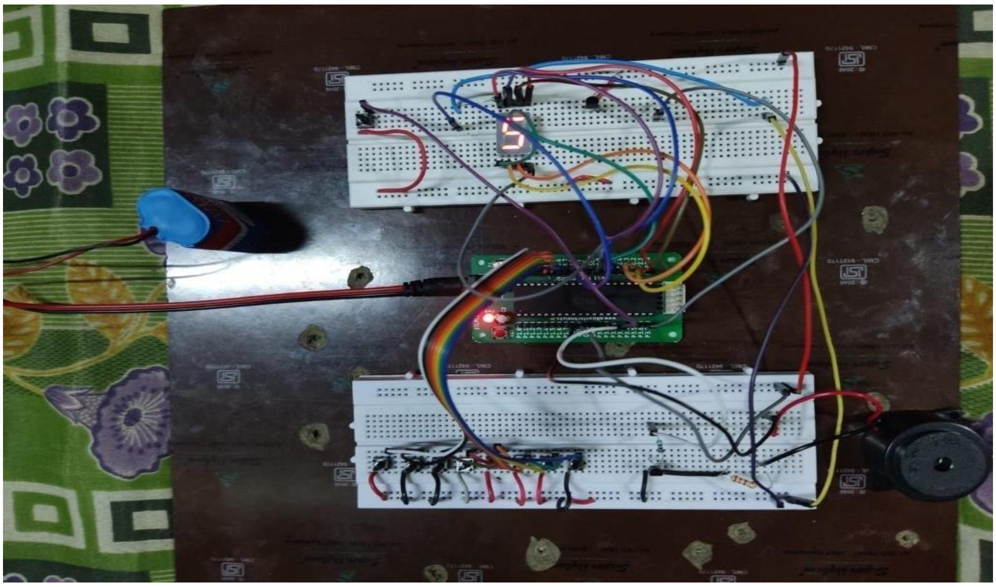


Fig  2.7 Player 6 Presses the switch

Fig 2.7 shows .when any other Player presses the switch,the corresponding switch number is not displayed.

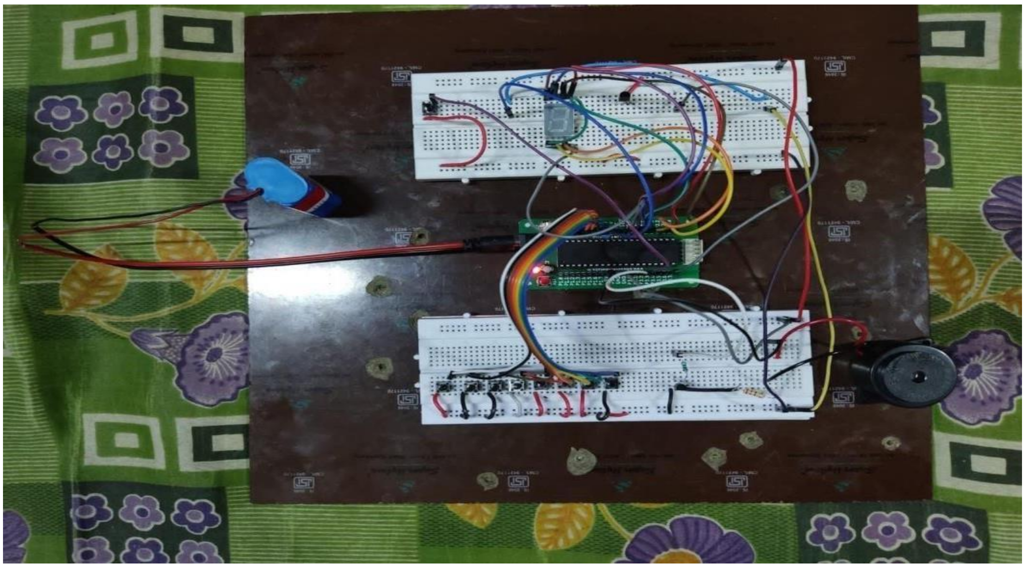


Fig 2.8 Reset

Fig 2.8 shows when the reset switch is pressed,the buzzer turns off and the number displayed in the display also gets reset.

# CHAPTER 3

# CONCLUSION

Hence this project can design an effective detecting system that can monitor in quiz competitions in schools, colleges, TV programs etc with eight different switches. The uniqueness of this project is only alerting the quiz conductor who first know the answer.

## Advantages of the project:

- Highly sensitive
- Low cost and reliable circuit Complete elimination of manpower

## Applications:

- It has maximum application in institutional and commercial level
- Widely used in school, colleges and tv programs.

# REFERENCE

1. https://www.electronicshub.org/8-channel-quiz-buzzer-circuit-using-microcontroller/
2. https://www.modishproject.com/automatic-quiz-buzzer-system
3. https://codemint.net/computer-science/design-and-construction-of-automatic-quiz-buzzer-system/index.html
4. https://projectiot123.com/2021/04/21/quiz-buzzer-system-using- microcontroller/
5. https://azresearchconsult.com/full-project-design-and-construction-of- automatic-quiz-buzzer-system/
6. .International journal of Engineering and Computer science ISSN: 2319-7242, vol.5, April 2016, "A Review based on pic microcontroller for fastest finger first" by SayaliGilbile, NiharikaNikam, Vishal Mate, Mayur Ingle.
7. https://www.researchgate.net/publication/224133362, "A Wireless quiz system using low power microcontrollers", April 2010.
8. "Distributed Quiz" by Hassan Hayat, Pinkal Patel, Andres Salgado.

# APPENDIX

```
#include <at89s8252.h>
#define SEG  P2
#define KEY  P0
#define RST P3_3
#define BUZZ P3_2
void delay(void);
const char SEV_SEG[10] =
{0xc0,0xf9,0xa4,0xb0,0x99,0x92,0x82,0xf8,0x80,0x98};
const char KEY_PATTERN[8] =
{0xFE,0xFD,0xFB,0xF7,0xEF,0xDF,0xBF,0x7F};
void main()
{
 __sbit r=1;
 char key,i;
 RST=1;
 BUZZ=0;
 SEG=0x00;
 KEY=0xFF;
 while(1)
 {
  key=KEY;
while(key==0xFF)
  {
   key=KEY;
  }
  key=KEY;
 delay();
 while(KEY!=0xFF)
 {
 }
 for(i=0;i<8;i++)
 {
  if(key==KEY_PATTERN[i])
  {
   break;
  }
  else
  {
  }
 }
 SEG=~SEV_SEG[i+1];
 BUZZ=1;
 r=RST;
 while(r==1)
 {
  r=RST;
 }
 delay();
 BUZZ=0;
SEG=0x00;
}
}
```

```
void delay(void)
{
 int i,j;
 for(i=0;i<50;i++)
 {
  for(j=0;j<1275;j++)
  {}
 }
}
```