8 player quiz buzzer circuit diagram

In this project, I will show you the design and work of the Channel 8 Quiz Whistle Circuit using microcontroller (8051), which tells us which team has pressed the button first for the quiz or game show. Quiz whistles are often used in places like educational establishments and game shows, where organizers first need to know who pushed the button. Conventional systems require human intervention to decide which command is pressed button and this system can be faulty and even biased. Another problem occurs when two members pressed a button with an insignificant interval, and it is difficult to guess who has pressed the whistle first. Here in this project, I designed the Automatic Quiz Whistle system, in which when more than one team pushes the whistle, the delay between the two buttons pushes is accurately taken into account, and the corresponding number is displayed. I have designed a circuit using a 8051 microcontroller that scans input from push-buttons and displays the corresponding number on the display of the device (7-Segment Display). It is a simple chain with a minimum number of components and sans any complexity. Although this system is only designed for 8 teams, you can add more commands using another set of 8 push-buttons. Related Post – IR Based 5 Channel Remote Control System 8 Channel Quiz Whistle Circuit using Microcontroller is a simple embedded system with 8 push-buttons on input devices, microcontrollers as the main controller and output devices are whistle and display. The entire operation is carried out with a microcontroller using a program written in C language and dumped inside the microcontroller. When one of the buttons is pressed, the whistle starts ringing and the corresponding number appears on the 7-segment display. AT89C51 (8051 Microcontroller) 7 Segment display (this project uses conventional anododi) Push-buttons – 10 10Skraters – 2 100Ω reziators – 8 470Ω resissitors – 2 2N 2222 NPN transistors - 2 5V Whistle 1N4007 Diode 10μF capacitor 33pF capacitors - 2 11,0592 MHz Crystal 8051 Programmer 5V Power Supply All design process includes five steps. The first step is designing the chain. The second step is drawing schematic using any software. The third step involves writing code using a high-level language, such as C or assembly language, and then compiling it on a software platform such as Keil µVision. The fourth step is programming microcontrollers with code. Finally, the fifth step is testing the chain. The chain includes using five key components – 8051 Microcontroller, SPST Push Buttons, Whistle and Total Anode 7 segment display. In this case, the microcontroller used in this case is AT89C51, an 8-bit microcontroller manufactured by Atmel (now Microchip). Reset Circuit Design: Reset resistor is selected so that the voltage at reset pin, throughout this resistor is at least 1.2V and the width of the pulse applied to this pin is greater than 100 ms. Here we 10KΩ resistor and capacitor with 10 µF. Oscillator circuit design: The oscillator circuit is designed using a crystal oscillator 11.0592 Mhz and two ceramic capacitors each at 33pF. The crystal is connected between microcontroller pins 18 and 19. The 7-segment display is connected to the microcontroller so that all input pins are connected to port P2. Microcontroller code: The code can be written using C or assembly language. Here I have written a program in C language using Keil µVision software. You do this by following these steps: Create a new project in the Keil window and select a target (microcontroller). Create a new file in the project and type the code. Save the code with the .c and add the file to the source group folder in the destination folder. Compile the code and create a hexadecimal file. Once the code is compiled and the hex file is created, the next step is to dump the code into the microcontroller. This can be done by a Microcontroller 8051 programmer. The manual whistles used in quiz competitions in schools and colleges create a lot of confusion in identifying the first respondent. Although there are circuits for using computers and discrete SC, they are either too expensive or just a few more members. The quiz whistle chain given here can be used by up to eight players, which is the maximum in any quiz competition. The chain uses IC 74LS373 and some passive components that are readily available on the market. The chain can be divided into two parts: power and quiz whistle. Figure 1 shows the power section. The Regulated 5V power quiz whistle section is derived from AC. The 230V AC is reinforced to 7.5V AC with transformer X1, corrected by the bridge straight BR1, filtered by C1 and regulated by the regulator IC1. Capacitor C2 bypasses the power of the ripples regulator. Figure 1: The power supply shows the quiz whistle in Figure 2. This section is based on IC 74LS373, an octal switch used to transfer the state of logic at data entry pins D0 through D7 to the corresponding Q0 to Q7 output. Data pins D0 to D7 are usually pulled to a low level with resistors R1 to R8. Figure 2: Circuit school/college quiz whistle One terminal push-to-on switches S1 to S8 are connected to +5V, while the other terminal is connected to the corresponding data input pins. Switches must be expanded to players using wire wires. Torch bulbs BL1 to BL8 can be housed in boxes with the front half of the box covered with white paper, bearing the name or number of a contender written over it for easy identification. Place boxes above head level so they can be seen by the audience also. When the power supply is switched on using the S9 switch (if terminals A and B power supply and quiz whistle sections are interconnected), the chain is ready for use. Now all switches (S1 to S8) are open and Q0 to Q7 output IC 74LS373 is low. As a result, the gate silicon-controlled rectifierS SCR1 through the SCR8 are also low. As soon as the contestant instantly pushes its corresponding switch, the corresponding output data pin goes high. This causes the relevant SCR and the corresponding bulb to shine. At the same time, the piezobuzzer (PZ1) sounds like a transistor T1 performs. At the same time, the t2 base of the transisitor becomes high to make it an action. The IC2 latch enabled (LE) is tied to the ground to lock all Q0 to Q7 outputs. This limits further changes in output position due to any other change in the sounding of switches from S1 to S8. Only one of the eight torch lamps shines until the circuit is reset with the S9 on/off switch. More interesting projects are available here. In this project, I will show you the design and work of the Channel 8 Quiz Whistle Circuit using microcontroller (8051), which tells us which team has pressed the button first for the quiz or game show. Quiz whistles are often used in places like educational establishments and game shows, where organizers first need to know who pushed the button. Conventional systems require human intervention to decide which command is pressed button and this system can be faulty and even biased. Another problem occurs when two members pressed a button with an insignificant interval, and it is difficult to guess who has pressed the whistle first. Here in this project, I designed the Automatic Quiz Whistle system, in which when more than one team pushes the whistle, the delay between the two buttons pushes is accurately taken into account, and the corresponding number is displayed. 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Circuit Diagram 8 Player Quiz Buzzer using Microcontroller Components Required AT89C51 (8051 Microcontroller) 7 Segment Display (Common Anode Used in This Project) Push Buttons 10 10KΩ Resistors – 2 100Ω Resistors – 8 470 Ω Resistors – 2 2N2222 NPN transistors – 2 5 V Whistle 2 1N40 Diode 10μF capacitor 33pF capacitor – 2 11.0592 MHz Crystal 8051 programmer for 5V power process The entire design process involves five steps. The first step is designing the chain. The second step is drawing schematic using any software. The third step involves writing code using a high-level language, such as C or assembly language, and then compiling it on a software platform such as Keil µVision. The fourth step is programming microcontrollers with code. Finally, the fifth step is testing the chain. The Quiz Whistle Circuit Design chain includes using five key components – 8051 Microcontroller, SPST Push Buttons, Whistle and Total Anode 7 segment display. In this case, the microcontroller used in this case is AT89C51, an 8-bit microcontroller manufactured by Atmel (now Microchip). Reset Circuit Design: Reset resistor is selected so that the voltage at reset pin, throughout this resistor is at least 1.2V and the width of the pulse applied to this pin is greater than 100 ms. Here we select 10 KΩ resistor and 10 µF capacitor. Oscillator circuit design: The oscillator circuit is designed using a crystal oscillator 11.0592 Mhz and two ceramic capacitors each at 33pF. The crystal is connected between microcontroller pins 18 and 19. The 7-segment display is connected to the microcontroller so that all input pins are connected to port P2. Microcontroller code: The code can be written using C or assembly language. Here I have written a program in C language using Keil µVision software. You do this by following these steps: Create a new project in the Keil window and select a target (microcontroller). Create a new file in the project and type the code. Save the code with the .c and add the file to the source group folder in the destination folder. Compile the code and create a hexadecimal file. Once the code is compiled and the hex file is created, the next step is to dump the code into the microcontroller. This can be done by a Microcontroller 8051 programmer. CODE How Does Quiz Whistle Circuit Works? When the chain is turned on, the compiler initializes the stack pointer and variables that have non-zero original values and performs other initialization processes and then calls the main function. It then checks whether any of the buttons are pressed. In other words, the microcontroller scans one of its input pins in the connecting P1 is zero or at a low level of logic. If the button is pressed, the display function is called by passing the corresponding number. The microcontroller then sends the appropriate signals to the port connected to the 7 segment display. The microcontroller will turn the whistle on and off for a second, but the number will be 7 segment display until the RST button is pressed. Applications Quiz Whistle Circuit This chain can be used in quizzes in competitions organized in schools, colleges and other institutions. It can also be used for other games showing. It can be used as a system in public places, such as banks, restaurants as a digital chip display system. System.

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