

MICROCONTROLLER BASED QUIZ CONTROLLER

Rashmi Sinha^{#1}, A. R. Yawale^{*2}

^{#1}UG Student, ^{*2}Asst. Professor, Department of E&TC, Sinhgad College of Engineering, Vadgaon(Bk.), Pune-41

^{#1}rashmisinha1995@gmail.com, ^{*2}aryawale.scoe@sinhgad.edu

Abstract- One of the most important parts of any multi participant quiz game show is the Player Selection System. All participating groups are equipped with a selection button placed in front of them which can be used by them to give a response. The Player Selection System determines the group that gives the first response. Most of these systems used today are wired systems that consume a considerable amount of power. This paper describes a robust wireless quiz system using a low battery-powered PIC- Microcontroller (18F4520) interfaced with a GSM wireless transmitter.

Keywords - Proteus, Keil, PIC - Microcontroller (18F4520), GSM.

I. INTRODUCTION

Medical studies press unprecedented demands on the young students. Unlike the school curriculum, medical curriculum requires greater involvement of students in organized learning activities. Instead of traditional ways of teaching, new methods of teaching, learning and evaluation may inspire the student desire for learning and once the students mind is set on fire, it will find its way to provide its own fuel. Thus, the ultimate goal of self-teaching and learning could be achieved [1], [2]. With this view in mind, we thought of conducting quiz competitions as Quiz is one of the various methods described in the literature.

Studies have shown that quiz games promote active learning and provide motivational impetus. They also enhance meaningful knowledge retention by igniting interest and placing theoretical subjects in a real-world perspective. Thus, game styled quiz competitions based on curricular subjects can be an effective tool to increase interest and motivation and enhance learning is established beyond doubt [3], [4]. This obviously has the advantage of providing a fair level ground for all participants. The main objective of this active learning approach was to increase student interest in base science subject and to enhance student

participation in acquiring the knowledge in the core and applied aspects of physiology. Such Quiz competitions are usually conducted as part of extracurricular activities that constitute college week festivities or annual celebrations and become a regular fixture in most cases [5], [6]. They are appreciated by both students and teachers as fun and a novel way to reconnect with curricular material and are viewed favourably by administrator and policy makers as didactic tools in the guise of entertainment with this view in mind, we thought of conducting quiz competitions as a tool of teaching and learning methods.

II. DESCRIPTION

1. Quiz buzzer system has eight input pins corresponding to eight teams. The output is displayed on a LCD, which shows the number corresponding to the team which has pressed the button first. A buzzer is also sounded for a small duration to give an acoustic alarm.
2. When the system starts, the LCD does not display any output. The microcontroller keeps scanning the input pins. As soon as any one of the inputs is pressed, the buzzer sounds for a small duration. The LCD displays the number corresponding to the input pressed. Now even if any other input pin is pressed, there will be no effect on the system till the time the stop pin is pressed to reset the system.
3. There are a total of nine input pins. Eight pins of port P1 of the microcontroller are corresponding to eight inputs and one stop pin for resetting the buzzer system. On the output side a LCD is connected to display the corresponding output number. There is also a provision for sounding a buzzer for a small duration. Here, Pic-microcontroller (18F4520) is used.

III. AIM & OBJECTIVES

- a. To assess students views regarding quiz competitions as a tool of teaching and learning.

- b. To enhance academic knowledge among students regarding the subject of physiology.
- c. To foster / boost interaction between students and faculty in the dept. of physiology.
- d. To assess purpose of attending the quiz programmes by the students.

IV. QUIZ CONDUCTION

1. Each team is named alphabetically (i.e. A, B, C, and D).
2. 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. In such cases the decision can be biased due to human intervention. 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.
3. Designing Quiz Questions: This is the most essential part of competition and the questions are design such that questions with concise answers are selected, so that it is easier for judges to evaluate the performance of teams. Questions in each session during each round of the quiz are selected which will have equivalent difficulty for a fair competition.

Round 1

Passing Round - Each team will be asked 4 questions. Correct answer within 30 sec will be awarded +8 marks. The unanswered question will be passed to the second team which will be given +6 marks for correct answer and -2 marks for wrong answer, if answered within 10 sec. for the third team, +4 marks will be awarded for correct answer within 5 sec. and -4 marks for wrong answer.

Round 2

Buzzer Round - One after another 4 questions will be asked. Team hitting the buzzer first and answered correctly will be given +8 marks. For delay or wrong answer -4 marks will be given.

Round 3

Common Round - All the teams will be asked to write the answers to 4 compulsory questions on a paper in 5 minutes. After evaluation + 8 marks for correct answer & -4 marks for wrong answer will be given.

Round 4

Audience Round - Nine Questions will be asked to the audience. The marks will be added to the respective teams score.

Round 5

Rapid Fire - In a span of 2 min the questions will be asked in quick succession to each team. Correct answer will be given +8 marks and wrong answer will be given -4 marks.

At the end of each round, team scoring maximum marks in all the rounds together will be declared winner and awarded with a small gift and certificate. Other participants were given certificate of participation.

V. APPLICATIONS

This circuit can be used at quiz competitions organized at schools, colleges, TV programs and other institutions. It can be also used for other games. It can be used as at public places like banks, restaurants as a digital token display system.

VI. CONCLUSIONS

It is clear from the observations and results of the feedback analysis that the quiz competitions help the students.

1. In making learning an interesting experience.
2. In creating interest in the subject.
3. In developing team spirit.
4. In developing keenness in participating in the learning process.
5. To refer more number of textbooks.
6. To read the topic in depth and to increase desire for learning more and more about the subject.

VII. REFERENCES

- [1] SB Rotti, B sudhir M Danabalan, *Quiz as a Method to teach family welfare and Demography to Medical Undergraduate Students*, Indian Journal of community Medicine; 29(3), 2004.
- [2] Beylefeld AA, Struwig MC. *A gaming approach to learning medical microbiology; students' experiences of flow*, Med Teach., 29(9), 2007, 933-40.
- [3] Rotti SB, Sudhir B. Danabalan M. *Quiz as a method to teach family welfare and demography to medical undergraduate students*. Ind J community Med, 29, 2004, 121-2.
- [4] Vasan NS, DeFouw DO, Compton S. *Team based learning in anatomy: an efficient, effective, and economical strategy* Anat Sci Educ. 4 (6), 2011, 333-9.
- [5] Rotti SB, Dutta S, Danabalan M Narayan KA, Soudarssanane MB, Roy G. *use of a quiz as a method to teach nutrition and health*, Med teach..23(5),2001,519.
- [6] Goud BKM, Begum GS. *An Innovative Method of Teaching and Learning in Undergraduate First Year Medical Course at RAKMHSU, UAE*. Br J Med Medical Res.4 (20), 2014, 3755-66.