

Key pad Based Online Examination System

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Abstract:

Area of compact handheld devices using embedded system is attracting embedded designers nowadays. This paper present such one handheld embedded device which can be used for online examination system. This device is designed using microcontroller, keypad, LCD & RF transmitter and receiver. In present systems to conduct online examination system one desktop PC per candidate have to be used. This embedded device can be used to conduct online examination with only one desktop PC. Also the main objective of this On-line Examination System is to efficiently evaluate the candidate thoroughly through a fully automated system that not only saves lot of time but also gives fast & accurate results without using number of computers.

Keywords: Microcontroller, RF communication, Keypad

I. INTRODUCTION

The purpose of On-line Examination System is to take online test in an efficient manner and with no time wasting for checking the paper.

These systems combine wireless handheld keypads with LCD Screen and master computer. When used by a skilled moderator, these systems create an interactive environment that can inspire honest feedback and generate quality data that can be instantly sorted in myriad ways. After the computer receives the group's input, the results are tallied for immediate display to the moderator, group members, and/or observers. This avoids data entry errors that can occur when converting paper information into electronic files. Using wireless keypads instead of computers for every student ("all those in increasing cost of examination...") allows a participant to respond anonymously, which may encourage more thoughtful and honest responses.

The purpose of the system is to develop Online Examination System., used to test the Domain knowledge of the students, and employees with respect to the particular technology. The manual procedure used for conducting exam is time consuming process and error prone due to human limitations. The System purpose is to completely automate the old manual procedure of conducting exam. It is very essential for an Institute to handle the Examinations and their results.

II. PREVIOUS WORK

2.1 Current System

The Current system of examinations is highly complicated and expensive. Whenever exams are to be conducted there are various tasks that have to be done again and again

- Setting question paper
- Checking for errors
- Printing question papers
- Scheduling Exams
- Conducting Exams
- Checking Answer Papers
- Preparing Result Charts
- Solving Question Papers

Online Examination System using Touchpad is known in the industry by many names including audience response system, interactive voting pads, audience voting keypads, and clickers. These handheld or wearable electronic devices quickly record member answers to questions during a exams, meeting, training, and survey activities. You'll find devices in conferences and seminars for opinion polling, benchmarking, and speaker feedback. In corporations for strategic planning and decision making and to share voting.

III. PROPOSED SYSTEM HARDWARE

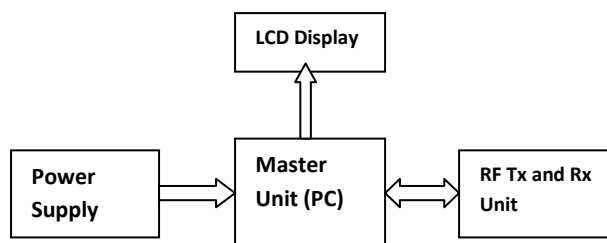


Figure 1 (a): Master Unit Block Diagram

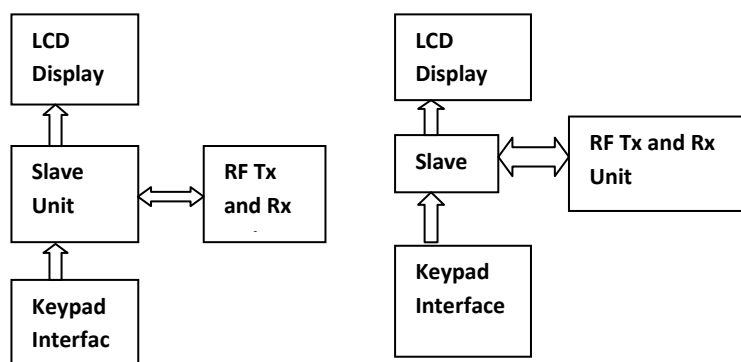


Figure 1 (b): Slave Unit Block Diagram

Figure 1: Answering-pad Based Online Examination System

3.1 Master Unit

3.1.1. RF Transmitter and Receiver: It is a rate of oscillation in the range of about 3 kHz to 300 GHz, which corresponds to the frequency of radio waves, and the alternating currents which carry radio signals. RF usually refers to electrical rather than mechanical oscillations, although mechanical RF systems do exist (see mechanical filter and RF MEMS). Although radio *frequency* is a rate of oscillation, the term "radio frequency" or its acronym "RF" are also used as a synonym for radio – i.e. to describe the use of wireless communication, as opposed to communication via electric wires.

3.1.2. Master Computer: It consists of a Master computer which is connected to Internet for sending and receiving of the questions and answers. It is used for sending the data (Question Paper) to Slave Unit and also receiving the final data from the Slave Units.

3.1.3 Power Supply Unit: This block is used to produce a power supply of about +5V.

3.1.4 LCD Display: It is used to for Result display purpose.

3.2 Slave Unit:

3.2.1 Microcontroller: ATmega32A microcontroller is used as controller of slave Unit.[3] It is CMOS,RISC, AVR ATmega32 8-BIT Microcontroller which is having In-system Programmable with Flash code storage, re-programmable up to 1000 times, 32 working registers, single clock cycle execution giving up to 1MIPs/MHz[2]

3.2.2 GLCD: This is a smaller version of our serial graphic LCD. The Serial Graphic LCD backpack is soldered to the 128x64 pixel GLCD and provides the user a simple serial interface to a full range of controls.[2] Besides writing text, this serial graphic LCD allows the user to draw lines, circles and boxes, set or reset individual pixels, erase specific blocks of the display, control the backlight and adjust the baud rate.[3]

3.2.3 RF Transmitter & Receiver module: It is a true single-chip transceiver, It is based on 3 wire digital serial interface and an entire Phase-Locked Loop (PLL) for precise local oscillator generation .so the frequency could be setting. It gives 30 meters range with onboard antenna. It is al Low power consumption IC.This module is used in this system to establish wireless communication between slave & master to exchange question-answers. [4]

3.3 Working

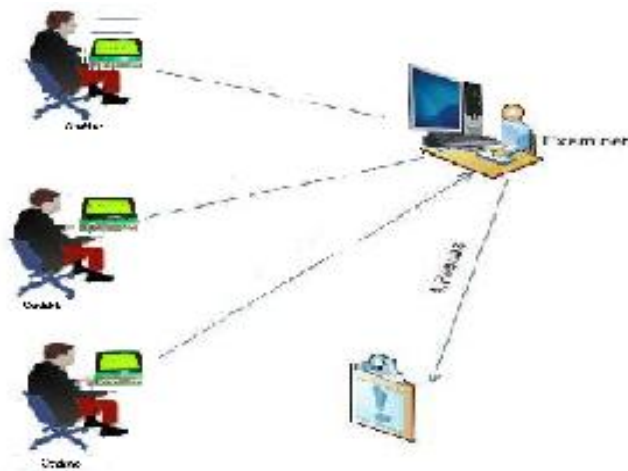


Figure 2: Working of System

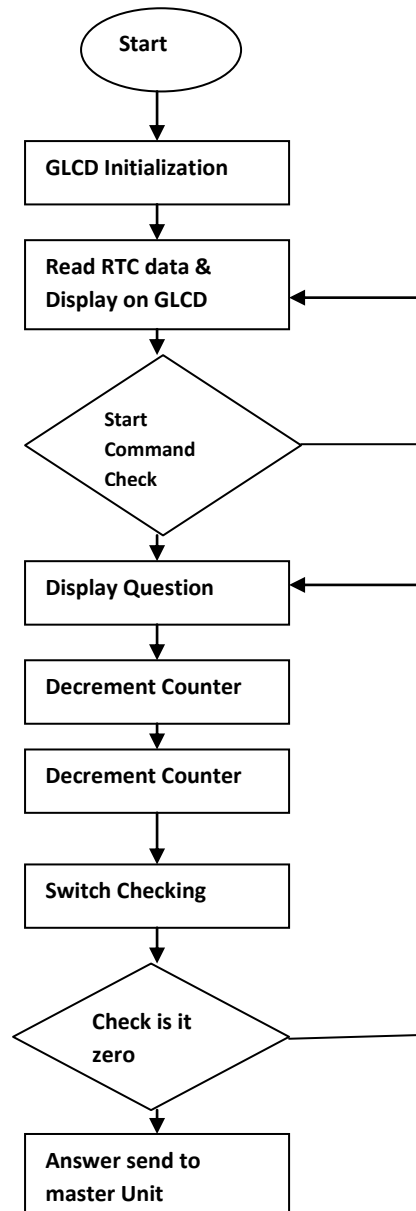
1. All the question paper sets will be stored in a Master Computer via Internet, from this Master computer it will be send to the Slave unit as per the prescribed time before the start of examination.
2. Initially there is no display of questions on the GLCD unit of Slave, after start command given from Master unit the Slave unit will turn on.
3. Then different set of objective questions with options will arrive as per the sequence on different Slave unit.
4. As the time starts the candidate will start solving the questions, at a time only one question will appear.
5. There are four buttons given on the device A, B,C,D by pressing the particular button the candidate can select the answer.
6. If the candidate wants to preview the previous question then by using the preview button he can go to the previous questions.
7. If the candidate wants to proceed with the question then by using the next button he can proceed with the questions
8. After time-up Master Unit will request Slave Unit to send the data.
9. Then all the data will appear at the Master Unit within few seconds, only one Slave will send the data at a time.
10. Simultaneously Master unit will start analyzing the answers with the standard format stored in it.
11. After completion the Master unit will display the result within some time.

3.4 Utilities

It includes:-

- Skip and come back to the question afterwards if needed.
- Displays the selected answer of attempted questions and can go to next or previous question and can either attempt or change the answer of the already attempted question.

IV. SOFTWARE- FLOW CHART



V. RESULT

Examination will start on every slave device only after receive command from master. Then each candidate has to enter his name and examination seat number on master pc. After completion of registration procedure candidate's examination time start & each question will be displayed sequentially as per the set for each slave.



Figure 3: Handheld Device (Slave Unit)

As shown in above Display each question is displayed with four objective answers Viz. A, B, C, D. Candidate has to submit one option and has to press *NEXT* switch for next question. Candidate can return to the previous question by pressing *PRV.* Switch.

VI. CONCLUSION

An Answering-pad Based Online Examination System allows large groups of people to vote on a topic or answer a question. Each person has a device with which selections can be made. Each remote communicates with a computer via receivers located around the room or via a single receiver connected to the presenter's computer using a USB connector. After a set time – or after all participants have answered – the system ends the polling for that particular question and tabulates the results. Typically, the results are instantly made available to the participants via a bar graph displayed on the projector. An online Examination system forms the lifeline of the Educational Institutes to the functioning of the examination.

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