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Department:	School of Computing
Submission Due on:	20th February 2022
Type of Coursework:	~~Individual~~/ Group
Title of the Coursework:	Clap Control Home Automation

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NATIONAL INSTITUTE OF BUSINESS MANAGEMENT
DIPLOMA IN SOFTWARE ENGINEERING/DIPLOMA IN NETWORK ENGINEERING
COURSEWORK ONE

ELECTRONICS AND COMPUTER ARCHITECTURE

PROPOSAL

SUBMITTED BY

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Date of Submission: …19/02/2022……..

DECLARATION

This project is an original work presented in partial fulfillment of the Coursework for the Electronics and Computer Architecture module followed by the diploma in software Engineering NIBM and the literature-diagrams quoted in this project is not included without the due mention of the original author. We hereby declare that the proposal assignment submitted is explicitly acknowledged by all the members of the group and have read and checked all the parts of the piece of work.

SUMMARY

Nowadays people act as busy bees and sticks to their daily routines and chores, at a time like that the invention of the clap control home automation makes peoples busy lives even more comfortable and tranquil. This proposal outlines a plan where Clap switch circuits plays an important part in the today's home automation control circuitry, as it ventures into the domain of dynamic control of home appliances using a simple sound signal like a clap. This circuit is helpful for the consumers if they wish to turn on and off the device or electrical appliances through claps without moving from your place. Moreover, the other use is that there is no risk of electrical shocks as there is no necessity of touching the mechanical switches physically. The basic idea of clap switch is that the electric microphone picks up the sound of the claps and produces a small electrical signal which is amplified by the succeeding transistor stage.

INTRODUCTION

A circuited switch, which operates with the sound of clapping hands, where the switch comes to 'on' position when clapped once or twice and to 'off' position when again clapped once or twice. Furthermore, A clap-switch circuit is a sound sensitive circuit. The operation of the circuit is simple. Clap and the lamp turn on. Clap again and it turns off. The condenser microphone picks up the sound of your claps. It produces a small electrical signal which is amplified by the succeeding transistor stage. Two transistors cross connected as a bistable multivibrator change state at each signal. One of these transistors drives a heavier transistor which controls a lamp. This circuit can switch on and off a light or any electric appliance by the sound of a clap. This working of this circuit is based on amplifying nature of the transistor, switching nature of transistor, relay as an electronic switch. The LED on-time can be varied by changing the value of the capacitor (100mF). When capacitor value is changed from 100 mF to 10mF, the LED on time is decreased. Your clap should be loud, you can blow air from your mouth on the electric condenser to turn on the LED.

TECHNOLOGY

Taking into account Technology, we use a condenser microphone, resistors, capacitors, Diodes, LEDs, IC555 timer and a breadboard. Combined together these components helps to generate the circuit.

DURATION OF THE PROJECT

- Proposal: 2 days
- Protocol/Circuit: 3 days
- Report: 5 days
- Presentation: 4 days

OBJECTIVES

The objective of the project is to design a clap activated switch device that will serve well in different phono-controlled applications, providing inexpensive key and at the same time free from false triggering. This involves the design of various stages consisting of the pickup transducer, low frequency, audio low power and low noise amplifier, timer, bistable multivibrator and switches. It also consists of special network components to prevent false triggering and ensure desired performance objectives. We assure that this circuit is a safe, efficient and a comfortable solution that leads humans to strive to do more better in life. As everything evolutes, a smart home is the next step in an upgraded life to suit people's lives today.

Budget of the Project

Estimated Total cost value is around Rs.1000 - Rs.1500/=

Cost and Benefit Analysis

We would like to introduce this invention to the market for a reasonable price and it depends according to the functionality of the device. This invention can be upgraded further, therefore there can be a change in the price.

Expected outcomes of the project

The major advantage of a clap switch is that you can turn something (ex: a lamp) on and off from any location in the room (ex: while lying in bed) simply by clapping your hands. The primary application involves an elderly or mobility-impaired person. A clap switch is generally used for a light, television, radio or similar electronic device that the person will want to turn on/off from bed. There is a further scope of work on this project. This circuit is energy efficient, Low cost and reliable circuit Complete elimination of manpower and High Accuracy. This circuit can be made more accurate and more sensible to suit the practical use in our daily lives.

Conclusion

Assemble the circuit on a general-purpose breadboard. This circuit is very useful in field of electronic circuits. By using some modification, its area of application can be extended in various fields. It can be used to raise alarm in security system with a noise, and also used at the place where silence needed. This project gives us a great deal of knowledge about the components we use in assembling the circuit. In conclusion, our main objective is to develop a circuit switch which will recognize two intense sounds within an interval of 3 seconds as an upgraded version of the clap control home automation circuit.