Internet of Things Based Digital Bird Repeller

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Abstract: All around India, the birds are a major threat in the area of college causing damage to buildings and college area, also make dirty human living areas. But now a day with the change of Technology. We would like to propose the model and prototype of the digital bird repeller system using IoT devices. This model is consists of the main functionality, a PIR sensor that will detect the bird and generate the sound using megaphones which will drive the bird away from the college area. This model aims to maximize the yield output & shows how IoT devices can help achieve this.

Keywords: Internet of things (IoT), PIR sensor, Arduino Megaphones, Battery, Amplifier.

I. INTRODUCTION

Pigeons are the most fascinating group in the animal kingdom. They are an integral part of all-natural ecosystems and attract the attention of laymen and scientists alike, because of their interesting biological attributes and the significant role played by them in nature. The most common domestic birds are a pigeon, sparrows, starlings, Common myna, Jungle myna, crows, and blackbirds in India as well as in many countries in the world. Pigeons stain the residencies & colleges. Birds damage the college areas which causes a direct effect on humans. Hence, it becomes necessary to build a system that will drive the birds away from the college. By drifting birds away from colleges & residencies, they will be clean. The proposed project aims for drifting birds away from the colleges and residencies from been obscene. We are designing a system that digitally drifts away birds from the colleges and residencies. Our project -Bird repeller is the dispersal of birds using sound that makes them uncomfortable. A bird repeller is any of several devices designed to scare birds.
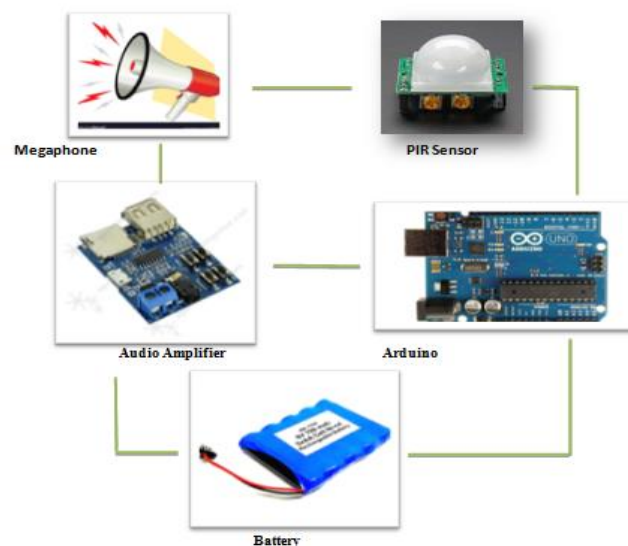

Fig.1 Digital Bird Repeller System

II. LITERATURE REVIEW

For our topic, we use two papers first one is bird repeller- A Review S.S.Baral, R.Swarnkar, A.V.Kothiya, A.M.Monpara, and S.K.Chavda.Birds are the most fascinating group in the animal kingdom. They are an integral part of all-natural ecosystems and attract the attention of laymen and scientists alike, because of their interesting biological attributes and the significant role played by them in nature. The second one is Automated Bird Detection and Repeller

System Using IOT Devices: An Insight from Indian Agriculture Perspective. In India, nearly 70 percent of rural households are dependent on agriculture for their livelihood. India is an agricultural country as it is completely dependent on the agricultural sector. The low productivity of crops depends on various factors and one of the factors is the intervention of bird popul

IV. PROPOSED SYSTEM

The main goal is to drift away pigeons from the outer areas of the buildings. Our model will be erected on the center of the field track on a raised platform and it can cover the birds entering the field. So, we use PIR Sensor to detect the pigeons and generates sound using a megaphone to drive birds away from the residencies. This model is based on the emerging technology of the internet of things (IoT) which has been a breakthrough in providing solutions to create on the needs of the people.

V. MODULE AND THEIR FUNCTIONALITIES:

PIR sensor:
PIR stands for Passive Infrared Sensor. PIR is an electronic sensor. Here we use HC-SR501.it can detect the birds across the certain distance
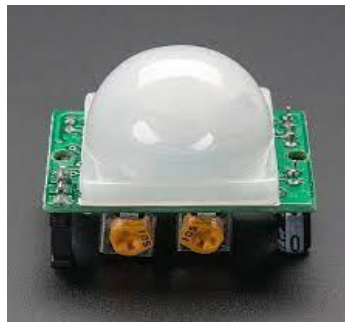

Fig.1. PIR Sensor

B. Arduino Uno:
- Arduino is an open-source electronics platform based on easy-to-use hardware and software.
- Arduino Uno is a microcontroller based on an 8-bit ATmega328p microcontroller.
- Arduino Uno has 14 pins, 6 analog input pins, a USB connection, a power barrel jack, an ICSP header, and a reset button.
- The length and Width of Arduino are 68.6 mm* 53.4 mm.

Fig.2.Arduino Uno

C. Megaphone: The amplified signals will be sent through this megaphone according to the field.

Fig.4.Megaphone.

D. **Battery:** Required for charging up purposes

Fig.5   Battery.

E. Audio Amplifier: It is a portable consumer electronic device that allows you to store and play audio files in MP3 format.

Fig.6.Amplifier

VI. SYSTEM ARCHITECTURE

The Digital Bird Repeller system using the above components as shown in fig. So, we use PIR Sensor to detect the birds and generate sound using a megaphone to drive birds away from the college area. This model is based on the emerging technology of the internet of things (IoT) which has clearly been a breakthrough in providing solutions to create on the needs of the people.
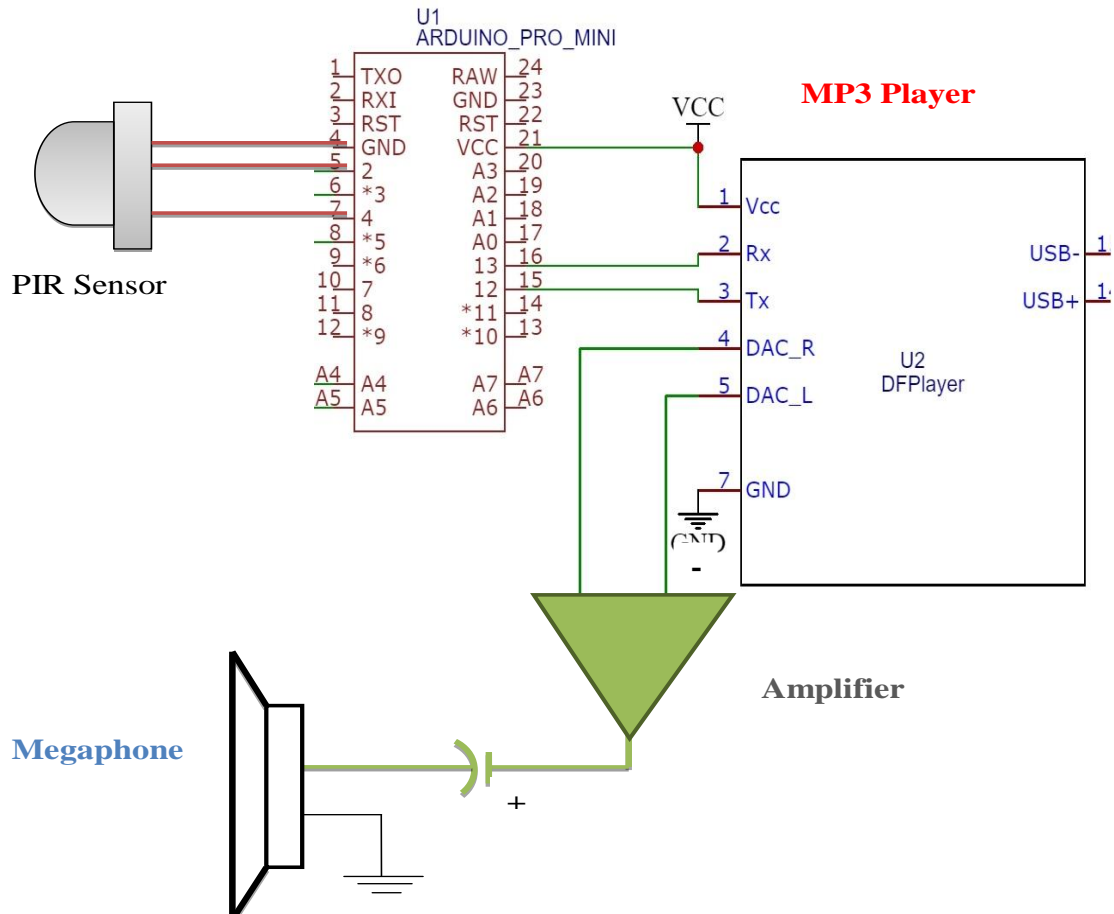
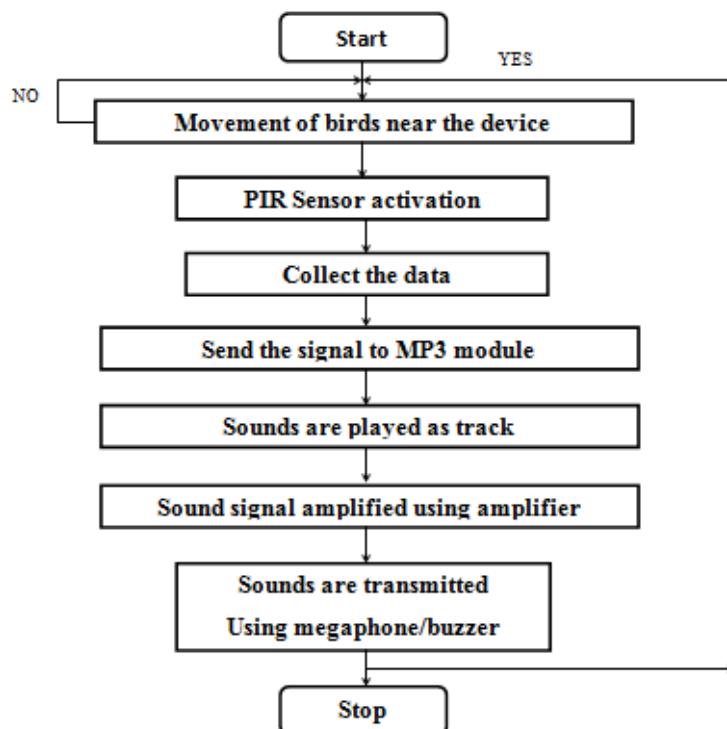Fig.7. Block diagram of the proposed system

Fig.8 Flow chart of the proposed system

IX. FUTURE SCOPE

In our proposed model we are collecting the data of output of PIR sensors, We can use this data to further analyze and improve the model After more research in this field. We can install a better sound variant that can scare the bird from entering the field. in the future, this system also is used in hospital sectors, gas stations. We have various scope of improvement in our model like using better motion detection sensors which specifically detects birds and usage of display image processing monitor that will show of predators and will help drift away from the birds.

X. CONCLUSION

This proposed model is a cost-effective, reliable, and simply understandable solution. This approach of using IoT devices believes that problems like protection of college areas or buildings from birds and many such related problems can be solved under this area of interest, hence broadening the horizon of researchers to bring on effective implementable ideas or solutions for different problems similar to this.

ACKNOWLEDGMENT

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