

## AGRICULTURE PROTECTION SYSTEM FROM WILD ANIMALS

N.Sai Surya<sup>1</sup>, Ch.Suseela Kalyani<sup>2</sup>, V.Varun Krishna<sup>3</sup>, M.Sujitha<sup>4</sup>, T.Sai Surya Tejaswi<sup>5</sup>

<sup>12345</sup>UG Students, Dept. of ECE, PRAGATI ENGINEERING COLLEGE

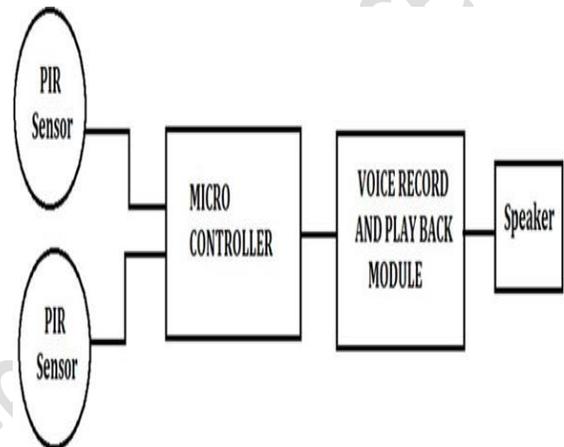
### ABSTRACT

This project aims at designing and executing the advanced development in embedded system for Crops in farms which are many times ravaged by local or wild animals like buffaloes, cows, goats etc. This leads to huge losses for the farmers. It is not possible for farmers to barricade entire fields or stay on field 24 hours and guard it. This system uses a motion sensor to detect wild animals approaching near the field. In such a case the sensor signals the microcontroller to take action. The microcontroller now sounds an alarm to woo the animals away from the field as well as play different sounds through voice record and playback module. This project is for demonstration purpose. For real time use we have to use an amplifier for bigger sounds.

### INTRODUCTION

This project aims at designing and executing the advanced development in embedded system for Crops in farms which are many times ravaged by local or wild animals like buffaloes, cows, goats etc. This leads to huge losses for the farmers. It is not possible for farmers to barricade entire fields or stay on field 24 hours and guard it. This system

uses a motion sensor to detect wild animals approaching near the field and in such a case the sensor signals the microcontroller to take action and protect the field from the animals.



The PIR sensors are connected to the 8051 Micro controller and detect the animal or human moment. When any animal enters into the agricultural field, then the microcontroller sounds an alarm to woo the animals away from the field by playing different sounds through voice record and playback module in which the voice or audio is prerecorded. The voice record and playback module is connected to a speaker which produces sounds from it.

Embedded means something that is attached to another thing. An embedded system can be thought of as a computer hardware system having software embedded in it. An embedded system can be an independent

system or it can be a part of a large system. An embedded system is a microcontroller or microprocessor based system which is designed to perform a specific or predefined tasks. The system gains its name from the fact that the software is embedded into it for a particular application. So we can define an embedded system as a Microcontroller based, software driven, reliable and real-time control system.

An embedded system is a microcontroller / microprocessor based system that is built to control or monitor the functions of equipment, machinery or plant. Embedded Systems can provide high level of automation and performance. Embedded systems have become very important today as they control many of the common devices we use. Since the embedded system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product, or increasing the reliability and performance. Some embedded systems are mass-produced, benefiting from economies of scale.

Physically embedded systems range from portable devices such as digital watches and MP3 players, to large stationary installations like traffic lights, factory controllers, or the systems controlling nuclear power plants. Complexity varies from low, with a single

microcontroller chip, to very high with multiple units, peripherals and networks mounted inside a large chassis or enclosure.

In general, "embedded system" is not an exactly defined term, as many systems have some element of programmability. For example, Handheld computers share some elements with embedded systems — such as the operating systems and microprocessors which power them — but are not truly embedded systems, because they allow different applications to be load and peripherals to be connected.

#### **HARDWARE COMPONENTS**

Transformer is a static device used to convert the voltage from one level to another level without change its frequency.

There are two types of transformers

1. Step-up transformer
2. Step-down transformer

Step-up transformer converts low voltage level into high voltage level without change its frequency.

Step-down transformer converts high voltage level into low voltage level without change its frequency.

A diode bridge is an arrangement of four diodes in a bridge circuit configuration that provides the same polarity of output for either polarity of input.

When used in its most common application, for conversion of an alternating-current (AC) input into a direct-current (DC) output, it is known as a bridge rectifier. A bridge rectifier provides full-wave rectification from a two-wire AC input, resulting in lower cost and weight as compared to a rectifier with a 3-wire input from a transformer with a center-tapped secondary winding.

In the diagrams below, when the input connected to the left corner of the diamond is positive, and the input connected to the right corner is negative, current flows from the upper supply terminal to the right along the red (positive) path to the output and returns to the lower supply terminal through the blue (negative) path.

A voltage regulator is an electrical regulator designed to automatically maintain a constant voltage level. It may use an electromechanical mechanism, or passive or active electronic components. Depending on the design, it may be used to regulate one or more AC or DC voltages. There are two types of regulator are they.

- Positive Voltage Series (78xx) and
- Negative Voltage Series (79xx)

78xx:'78' indicate the positive series and 'xx' indicates the voltage rating. Suppose 7805 produces the maximum 5V.'05' indicates the regulator output is 5V.

79xx:'78' indicate the negative series and 'xx' indicates the voltage rating. Suppose 7905 produces the maximum -5V.'05' indicates the regulator output is -5V.

These regulators consists the three pins there are Pin1: It is used for input pin.

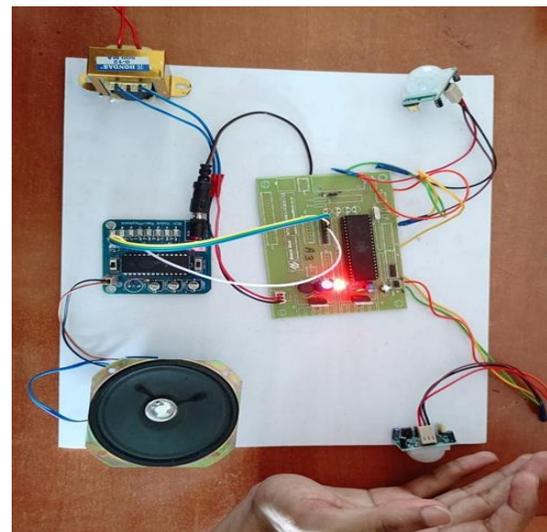
Pin2: This is ground pin for regulator

### WORKING OF THE CIRCUIT

The PIR sensors are connected to the 8051 Micro controller and detect the animal or human moment.

When any animal enters into the agricultural field, then the microcontroller sounds an alarm to woo the animals away from the field by playing different sounds through voice record and playback module in which the voice or audio is prerecorded.

The voice record and play back module is connected to a speaker which produces sounds from



## CONCLUSION

Farmers encounter severe threats in rural parts of India like damage done by birds and animals. Hence, to overcome this issue we have designed a system in which sound is played to scare the animals and birds, so that it will automatically run away. Therefore, the designed system is affordable and useful to the farmers. The designed system won't be harmful to animals and person , and it protects the farm areas.

## REFERENCES

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