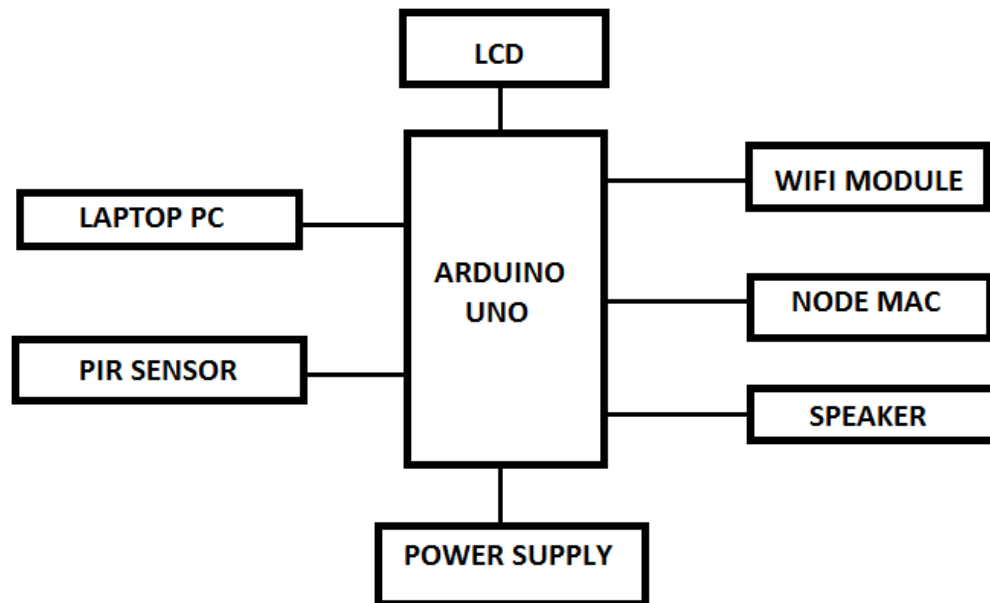


Solution Architecture



Arduino UNO

Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. Operating Voltage- 5V. Input voltage 7-12V

Pir Sensor

The Passive Infrared Sensor (PIR) sensor module is used for motion detection. It is often referred to as "PIR", "Pyroelectric", "Passive Infrared" and "IR Motion" sensor, the module has an on-board pyroelectric sensor, conditioning circuitry and a dome shaped Fresnel lens. It is used to sense movement of people, animals, or other objects. They are commonly used in burglar alarms and automatically-activated lighting systems.

Power Supply

A power supply is an electrical device that supplies electric power to an electric load. The primary function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load.

LCD Liquid Crystal Display

Liquid crystal display is a very important device. It offers high flexibility to users as it can display the required data on it. It is a type of flat panel display which uses liquid crystals in its primary form of operation. It is a 12*12 displays which display animal information when an animal is detected.

Laptop

When the PIR sensor detects the obstacle, the camera of the Laptop turns on and captures the video input. Once the input is captured the animal detection code runs in PYTHON'S ANACONDA platform and identifies the animal.

ESP8266 WiFi Module

ESP8266 WIFI module is a self contained SOC with integrated TCP/IP protocol stack, that gives any microcontroller access to WIFI network. It is pre programmed with an AT command set firmware, it is simply hooked on Arduino device to get wi-fi ability. It fetches data from internet using API's, hence we can access any information available in the internet.

Node-MCU

Node MCU is an open source firmware for which open source prototyping board designs are available. The name "Node MCU" combines "node" and "MCU" (micro-controller unit). Node MCU is used to access the location of the agricultural farm.

Speaker

A loudspeaker is an electroacoustic transducer, that is, a device that converts an electrical audio signal into a corresponding sound. Different audio files are played to scare the animals.