

Objective

Develop an innovative Smart Fence system integrating advanced sensor technology and responsive deterrent mechanisms to protect agricultural assets from animal intrusion, tailored to specific animal threats using customized frequency generator modules.

1) PIR Sensor

Enhance farm security and crop protection with this 3.3V-5V infrared motion sensor, vital for detecting animal movement and triggering deterrents in our Smart Fence system.

2) Relay

Efficiently control high-voltage or high-current loads like LED strip lights and mist generators in our Smart Fence system with this 5V DC-operated device, managing two independent circuits for enhanced flexibility.

3) Mist Sensor

At 5V DC, this device sprays mist to deter animals along farm boundaries, essential for crop protection in our Smart Fence system.

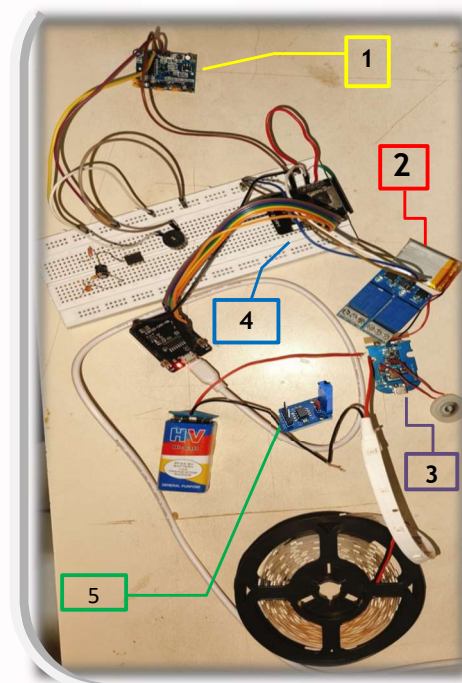
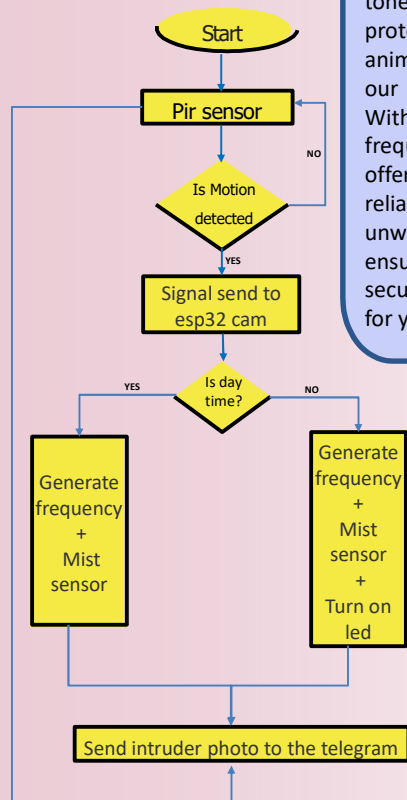
4) ESP32 CAM

A compact camera module powered by the ESP32 platform. Equipped with an OV2640 camera and onboard TF card slot, it offers convenient storage for images and videos. With 4MB of PSRAM, it ensures smooth video streaming and high-quality image capture. The onboard LED flash and multiple GPIOs enhance its versatility for various applications. Whether for surveillance, monitoring, or creative projects, the ESP32-CAM delivers reliable performance in a small form factor.

5) NE555 Freq Gen

Efficiently producing precise square wave signals at adjustable frequencies, this device operates at 5V DC, making it ideal for generating deterrent tones to safeguard protected areas from animal intrusion within our Smart Fence system. With its customizable frequency settings, it offers flexibility and reliability in deterring unwanted visitors, ensuring enhanced security and protection for your farm or property.

Working Flow Diagram



6) Telegram

Effortlessly integrate the camera module with Telegram using API key and token for seamless photo transmission. This enhances monitoring and enables convenient remote access in our Smart Fence system, ensuring comprehensive surveillance of farm operations.

Application/ Innovation

For detecting blockage and toxic gases in sewer in order to help sewer cleaner.

Assessment of pollutant in air which are released by industries.

Result

Farm's security is our priority. With our IoT-Based Farm Surveillance System, your property is protected. Stay informed and in control, ensuring the safety of your crops and assets.

Future Applicability

The Farm Surveillance System integrates cameras, motion sensors, and sound generators to prevent animal intrusion, minimizing crop damage. It offers real-time monitoring and alerts, empowering farmers to mitigate threats for sustainable agriculture.