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DEVELOPMENT OF MULTIPURPOSE AGRICULTURAL ROBOTIC VEHICLE (ARV)

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Abstract: Farming is the key occupation in our Country from a long time. In any case, presently because of relocation of individuals from country to metropolitan there is issue in agribusiness. Thus, to conquer this inconvenience we go for savvy agribusiness methodologies the utilization of IoT. This challenge comprises of a lot features like WIFI basically based gatecrashers frightening, security and ideal water system offices, pesticide sprinkler is constrained by the use of android programming here the WIFI goes about as the discussion contraption between android utility and pesticide sprinkler. It utilizes WI-FI sensor networks for checking gatecrasher.

I. INTRODUCTION

The majority of states in India are agrarian economies and rustic populaces rely upon agribusiness and creature cultivation for their vocation. Pointed toward developing the harvest yield and bringing down the work in question, numerous forms of rural robots have been developed and created. This robot can work essential fundamental capabilities like shower the pesticides. The product of rural hardware in accuracy farming has encountered an enhance in venture. The robot begins off evolved its element through furrowing of soil saw via showering of pesticides. It utilizes essential components like DC engines, interloper sensor, WIFI, engine driver circuit, transfer, sprinkler syphon and Raspberry pi as the fundamental regulator. The mechanical plan of the automated is likewise basic.

II. RESEARCH METHODOLOGY

The robot is installed at the ranch, turned on via IoT, and its path is managed by means of an Android application. Pesticides are occasionally sprayed during the hand-off switch's on-and-off cycle with the use of a pesticide sprinkling syphon. The gadget focused on the design, development, and construction of a horticultural automated pesticide splashing machine as well as a security device using IOT. The horticultural robot is used to manage functions like spraying pesticides and is controlled via WiFi, allowing low-cost mechanical and Android programming to communicate. The system is equipped with DC motors to move the mechanical components and an intruder identification sensor to detect gatecrashers.



Fig.1:SystemArchitecture

System design includes hardware components and software components and is described as below.

Hardware Components

1. ARDUINO IDE SOFTWARE



Fig.2: Arduino IDE software

Arduino IDE is the product program used to compose order transfer program to Arduino. Its an open source programming program First we should have an Arduino board and a USB link. On the off chance that we use Arduino UNO, Arduino Duemilanove, Nano, Arduino Mega 2560, or Diecimila, we will need a famous USB link (A fitting to B plug), the assortment we would associate with a USB printer as displayed in Fig. 2. In the event that we use Arduino Nano, we will require A to Small B link all things considered.

2. DCMOTOR 300 RPM:



Fig 3:DCMotor300 RPM

The 300 RPM L-Shape BO Engine Plastic Stuff Engine - BO assortment straight engine gives proper force and rpm at decline working voltages, which is the biggest addition of these engines.

3. L298N 2A BASED MOTOR DRIVER



Fig.4: L298N2A Based Motor Driver

L298N 2A Based Engine Driver is an over the top power engine driver best for riding DC Engines and Stepper Engines (Presently situate out a gigantic scope of engines at Robu.in).

4. BATTERY



Fig.5: Battery

This LG INR18650 M26 2200mAh Lithium-Particle Battery gives cost for your cash. It accompanies an evaluated voltage of 3.7 volts and a capacity of 2200mAh.

5. BLUETOOTH MODULE HC-05



Fig.6: Bluetooth Module HC-05

HC-05 is the well known Bluetooth module. This HC05 module is slave mode as it were. Adding remote sequential availability for your gadget with this module is extremely simple.

Software Components

- 1. Arduino: Arduino IDE the software used to write-compile-upload program to arduino. It's a open source software.
- 2. *Python:* Python is an undeniable level programming language. This programming language gives develops expected which can permit clear bundles on both a little and huge scope.

III. RESULTS







CONCLUSION

In this paper, an AGRIBOT design is given which is IoT controlled robot, designed constructed and tested in order to remove pesticided splashes from the farming field. Farmers are added in increased crop yield by AGRIBOT.

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