SENSORS FOR LIVESTOCK MONITORING

MODEL-LIVESTOCK100

SPECIFICATIONS

This trainer has been designed with a view to provide practical and experimental knowledge Sensors programing for IoT based Live Stock Monitoring Applications on agriculture with Arduino IOT Board. Livestock Management entails managing Cattle and Supervising Farm Workers. Livestock management calls for knowledge of Animal Technology and Animal Husbandry, in addition to accurate commercial enterprise sense. Many livestock Managers have to additionally maintain economic information for his or her operations.

SPECIFICATIONS

A. Main Specs

1. Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch.
2. The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place.
3. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement.
4. Modules and Parts should be removable without desodlering for easy repair / replacement
5. The acrylic cover is fitted on PCB to safeguard main parts.

B. Arduino Microcontroller Board

1. Arduino Uno Microcontroller board based on the ATMEGA328P
2. 14 Digital Input / Output pins (of which 6 provide PWM output)
3. 16 MHz Ceramic Resonator
4. Flash Memory : 16KB (of which 2KB used by boot loader)
5. USB Port
6. Power Jack – 9V DC, 1A

C. Sensors & Other Components

1. Passive RFID Reader and Writer
2. Active RFID Reader and Writer
3. Bluetooth Tag Reader Module
4. Passive RFID Tags
5. Active RFID Tags
6. Bluetooth Tags
7. PIR Motion Sensor
8. GPS Module with Big GPS Antenna : 2.4 GHz

D. Modules and Hardware:

1. 20 X 4 - LCD Display
2. ESP32 Wifi Module
3. 2 mm interconnection Sockets

E. Accessories

1. USB Cable   : 1 No
2. Ethernet Cable   : 1 No
3. Micro USB to USB cable for ESP32   : 1 No
4. Power Supply Adaptor   : +9V DC, 1A
5. Jumper wires   : 50 Nos.
6. Pen Derive with Software, Library, Driver,
   Codes, Soft Copy of Manual and Mobile App   : 16 GB
7. Printed Practical Manual   : 1 No.
8. E-Books for Agriculture IOT Subject   : 10 Nos. in PDF Format
9. Mp4 Video Class for IOT Subject   : 40 Nos
10. Excitation accessories for each sensor
    Car Toys to simulate Cattle and Animals

EXPERIMENTS

A. Theory Experiments for Arduino Board

1. To understand theory and working of Arduino Operating software.
2. To understand Pin and Connection Diagram of Arduino.
3. To understand USB Interface for Arduino.
4. To understand 20 x 4 LCD Display.

B. Theory of ESP32 and GPS Wireless Module

5. To understand theory and working of ESP32
6. To understand Operating System for ESP32
7. To understand Pin and Connection Diagram of ESP32
8. To understand USB Interface for ESP32
9. To understand theory and working of GPS Module

C. Theory Experiments for Sensors

10. To understand theory and working of PIR sensor
11. To understand theory and working of Passive RFID Reader and Writer
12. To understand theory and working of Active RFID Reader and Writer
13. To understand theory and working of Bluetooth Tag Reader Module
14. To understand theory and working of Passive RFID Tags
15. To understand theory and working of Active RFID Tags
16. To understand theory and working of Bluetooth Tags

D. Practical Experiments

17. To detect movement of a Cattle or Cow using PIR sensor
18. To detect location of a Cattle or Cow using GPS sensor
19. To count Numbers of Cattle or Cow by attaching Passive RFID tag on them and then reading by Passive RFID Reader and Writer
20. To count Numbers of Cattle or Cow by attaching Active RFID tag on them and then reading by Active RFID Reader and Writer
21. To count Numbers of Cattle or Cow by attaching Bluetooth Tracker tag on them and then reading by Bluetooth Tag Reader Module

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