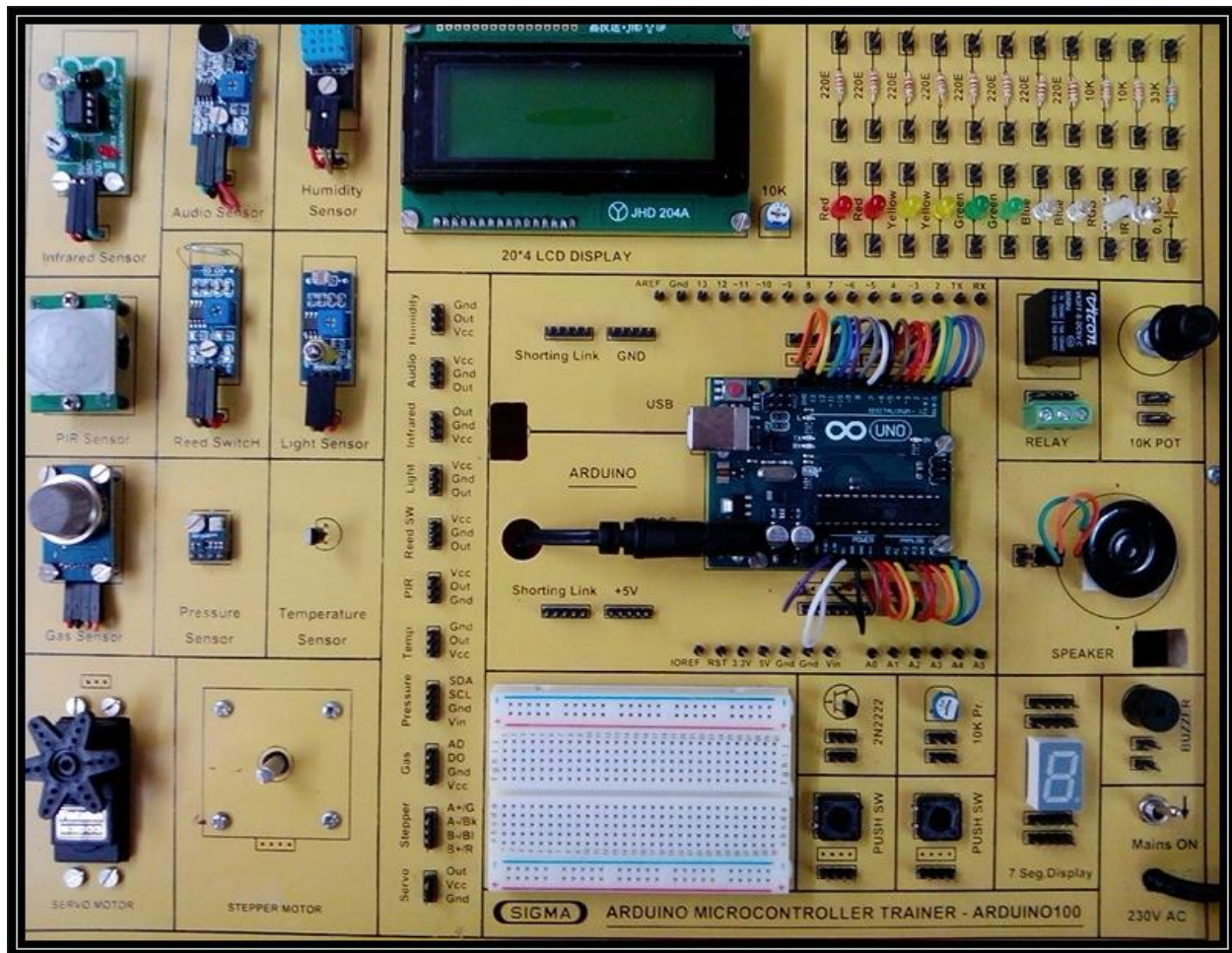




**ARDUINO UNO
MICROCONTROLLER TRAINER
MODEL-ARDUINO100**

SPECIFICATIONS



This trainer has been designed with a view to provide practical and experimental knowledge of Internet of Things (IOT) with Sensors programming with Arduino IOT Board.

SPECIFICATIONS

Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch

1. 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. USB Port
5. Power Jack – 9V DC, 1A

2. Sensors:

1. Ambient Light Sensor - LDR Light Sensor
2. Humidity - DHT11 Sensor
3. Pressure – BMP180 Sensor
4. Temperature - LM 35 Sensor
5. Gas Sensor - MQ135
6. PIR Sensor
7. Audio Sensor
8. Infrared Sensor
9. Reed Switch – Magnetic Sensor

3. Modules and Hardware:

1. 20 X 4 - LCD Display
2. Different Resistors
3. Different Color LEDs
4. Red, Green, Yellow LED
5. 10K Pot
6. Push Switch – 2 Nos
7. Audio Buzzer Board
8. Breadboard - 400 Points
9. 7 Segment Display
10. 1 Channel Relay board
11. DC Motor with Motor Driver board
12. Stepper Motor with Motor Driver board
13. 2 mm interconnection Sockets

Accessories

- | | |
|---|-------------------------|
| 1. USB to Square USB Cable | : 1 No |
| 2. 2 mm Banana Jack Jumper – Connectors | : 30 Nos |
| 3. 9V, 1A Power Adaptor – Barrel 2.1mm | : 1 No |
| 4. Pen Drive - 16 GB with All Codes | : 1 No |
| 5. Printed Manual | : 1 No. |
| 6. Softcopy of Manual – On Pen Drive | : 1 No |
| 7. E-Books for IOT Subject – On Pen Drive | : 10 Nos. in PDF Format |
| 8. Mp4 Video for IOT Subject – On Pen Drive | : 40 Nos |

Cabinet and PCB

The complete circuit diagram is screen printed on component side of the PCB of size 15 inc x 12 inch with circuit and Parts at the same place. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement. The acrylic cover is fitted on PCB to safeguard parts. It works on 230 V AC Supply.

EXPERIMENTS

A. Theory Experiments for Arduino Micro Controller

1. To understand theory and working of Arduino
2. To understand Operating System for Arduino
3. To understand Communication Protocols
4. To understand USB Interface for Arduino
5. To understand that how to connect 20 x 4 LCD Display to Arduino

B. Theory Experiments for Sensors

6. To understand theory of Air Ambient Light Sensor - LDR Light Sensor
7. To understand theory of Air Humidity - DHT11 Sensor
8. To understand theory of Air Pressure – BMP180 Sensor
9. To understand theory of Air Temperature - LM 35 Sensor
10. To understand theory of Air Gas Sensor - MQ135
11. To understand theory of Air PIR Sensor
12. To understand theory of Air Audio Sensor
13. To understand theory of Air Infrared Sensor
14. To understand theory of Air Reed Switch – Magnetic Sensor
15. To understand Active Audio Buzzer
16. To understand 1 Channel Relay Board
17. To understand fundamental of DC motor and its driver
18. To understand fundamental of Stepper Motor

E. Practical Experiments

19. To connect LCD Display
20. To make LED blink
21. To transmit and receive signals using Infrared Sensor
22. To detect Sound using Audio Sensor
23. To detect magnet using Reed Switch Sensor
24. To measure Humidity using Humidity - DHT11 Sensor
25. To detect Light using LDR Light Sensor
26. To measure Temperature using Temperature - LM 35 Sensor
27. To measure Pressure using Pressure – BMP180 Sensor
28. To detect Gas using Gas Sensor
29. To detect motion using PIR Sensor
30. To use Audio buzzer for Output signal Alarm
31. To control 1 Channel Relay
32. To operate DC Motor control
33. To operate Stepper Motor

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