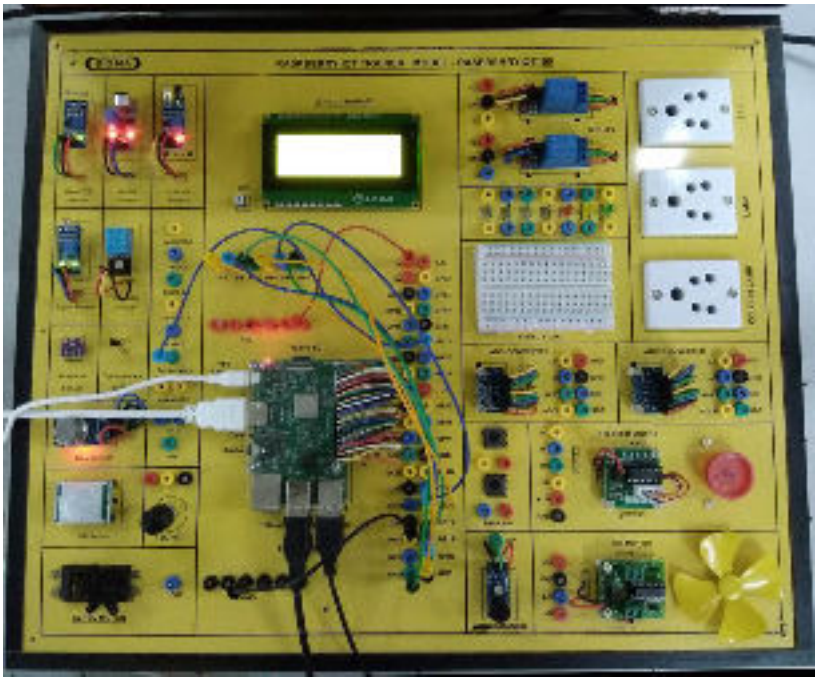
RASPBERRY IOT TRAINER WITH REAL SERVER

MODEL – RASPBERRY-IOT100

SPECIFICATIONS



This trainer has been designed with a view to provide practical and experimental knowledge of Internet of Things (IOT) with Sensors programing with Raspberry IOT Board with Real server.

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. Raspberry Microcontroller Board – Pi 4

1. Processor : 64bit, ARMv7
2. RAM - 2 GB
3. Memory - 32GB
4. OS: Open Source Linux
5. Connectivity:
   Dual-Band 2.4/5.0 GHz Wireless LAN
   Bluetooth 5.0, Gigabit Ethernet
   USB Interface – USB 2.0 – 2 Ports, USB 3.0 – 2 Ports,
6. Video and Sound
   2 × micro HDMI Interface ports (up to 4Kp60 supported)
7. Power - 5V, 3A DC via USB-C Connector
8. On Board 32 GB SD Memory Card with all Codes and Libraries

C. Modules and Hardware

1. 20 X 4 LCD Display
2. Reed Switch Sensor
3. Audio Sensor
4. Infrared Sensor
5. Light Sensor
6. Humidity Sensor.
7. Pressure Sensor.
8. Temperature Sensor.
9. Gas Sensor
10. PIR Sensor
11. Stepper Motor
12. Servo Motor
13. Single Channel Relay
14. Audio Buzzer
15. Push Keys
16. Potentiometer
17. Transistor – 2N2222A
18. Different Resistors and Different Color LEDs
19. Diode 1N4007
20. 2 mm interconnection Sockets

D. Accessories

1. USB to MicroUSB Cable : 1 No
2. Ethernet Cable RJ45 : 1 No
3. HDMI to Micro HDMI Cable : 1 No
4. VGA 15 pin Male to HDMI Converter : 1 No
5. 2 mm Banana Jack Jumper – Connectors : 30 Nos
6. 5V, 2A Micro USB Power Adaptor : 1 No
7. Pen Drive - 16 GB with All Codes : 1 No
8. Printed Manual : 1 No
9. Softcopy of Manual – On Pen Drive : 1 No
10. E-Books for IOT Subject – On Pen Drive : 10 Nos. in PDF Format
11. Mp4 Video for IOT Subject – On Pen Drive : 40 Nos
12. Online Cloud/Server Services for 2 years on Our Sigma Server

EXPERIMENTS

1. To understand theory and working of Raspberry PI .
2. To understand Operating System for Raspberry PI.
3. To understand Communication Protocols-UART,I2C,SPI,and RS485.
4. To understand USB Interface for Raspberry PI.
5. To understand Ethernet Cable Interface for Raspberry PI.
6. To understand micro SD Card Interface for Raspberry PI.
7. To understand 20 x 4 LCD Display.
8. Reed Switch – Magnetic Sensor
9. Audio Sensor
10. Infrared Sensor
11. Ambient Light Sensor - LDR Light Sensor
12. Humidity - DHT11 Sensor
13. Pressure – BMP180 Sensor
14. Temperature - LM 35 Sensor
15. Gas Sensor - M Q 135
16. PIR Sensor
17. To understand Active Audio Buzzer.
18. To understand 1 Channel Relay board.
19. To understand fundamental of Stepper motor and its driver.
20. To understand fundamental of Servo motor.
21. How to add .py file in memory card.
22. To connect LCD Display
23. To make LED blink.
24. To transmit and receive signals using Infrared Sensor.
25. To detect Sound using Audio Sensor
26. To detect magnet using Reed Switch Sensor
27. To measure Humidity using Humidity - DHT11 Sensor.
28. To detect Light using LDR Light Sensor.
29. To measure Temperature using Temperature - LM 35 Sensor.
30. To measure Pressure using Pressure – BMP180 Sensor
31. To detect Gas using Gas Sensor
32. To detect motion using PIR Sensor
33. To use Audio buzzer for Output signal Alarm
34. To control 1 Channel Relay.

35. To operate Stepper Motor control
36. To operate Servo Motor
37. To receive sensor data on Mobile using Mobile App
38. To receive sensor data on website using IOT Server
39. To send sensor data from 1st Raspberry Board and receive it in 2nd Raspberry Board through IOT Server
40. To control bulb remotely through Mobile App showing Smart Home Application
41. To control bulb remotely through Website showing Smart Home Application
42. To control Stepper Motor remotely through Website showing Smart Home Application

Contact us

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