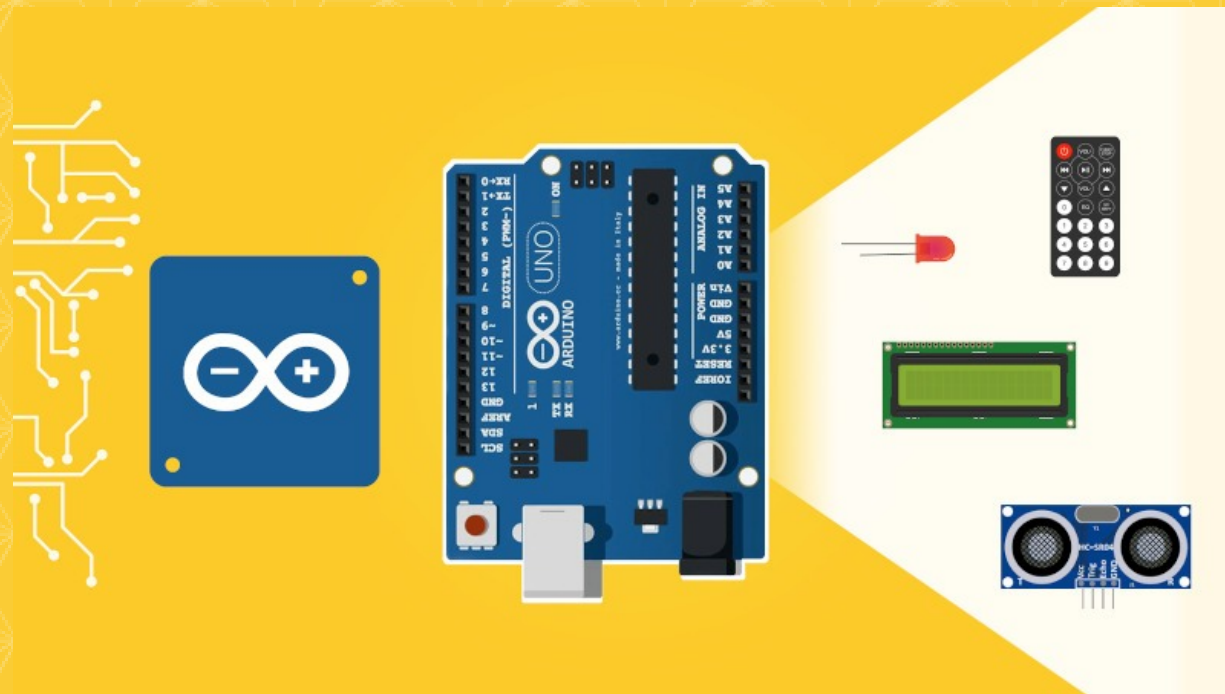


Two days Hands-on training Cum Workshop on



Basics of Arduino Programming for Beginners

Overview of Workshop:

This Workshop is about working with the Arduino Uno board which is one of the most popular platforms used for prototyping of electronics circuits. A detailed coverage of Arduino programming has been provided, so that you can easily deploy Arduino Uno board in applications such as Robotics, Automation, Internet of Things (IoT), Healthcare and many more. The workshop also provides detailed information on programming aspects as well as hardware features of Arduino Uno board. Special emphasis has been given to interfacing of external peripherals and sensors so that you can understand the insights of the real world applications that can be designed using Arduino Uno board. All the examples that are covered in this course have been tested on the hardware so that readers can directly take them as a reference for their own applications.

Workshop Goals:

- Understand what an Arduino is and how it works
- Learn how to use an Arduino safely
- Program your Arduino using code that you've written in the Arduino IDE (Integrated Development Environment)
- Learn basic programming concepts using C and C++ along with Arduino specific programming
- Understand best practice concepts for programming and prototyping
- Use a wide variety of hardware and components and prototype your projects using a breadboard
- Build your own innovative project with Arduino

Syllabus

DAY-1:

- What is Arduino?
- Why did we choose Arduino?
- Types of Arduino and its Features
- How to choose an Arduino board for your projects?
- Arduino IDE Installation
- Understanding Arduino Syntax
- How to write a Program for Digital Output devices?
 - Project 1: LED Control(RGB- Traffic Light System)
 - Project 2: RGB Mood Lamp
 - Project 3: 0 to 9 Counter using Seven Segment Display
- How to write a program for Digital Input devices?
 - Project 4: Switch controlled LED
- Basics of PWM & Serial Communication
 - Project 5: LED brightness control using Joystick
 - Project 6: LED control using input from Computer

DAY-2:

- Basics of Analog Sensors & its types
 - Project 7: LED ON/OFF using Joystick
- Basics of Relay & LDR
 - Project 8: Automatic Street Light System using LDR
 - Project 9: Intruder detection and alert system using PIR
 - Project 10: Smart Irrigation System using a Soil Moisture sensor
 - Project 11: Intruder detection and alert system using PIR
- Basics working principle of DC motor
 - Project 12: DC Motor Direction Control using the joystick
 - Project 13: DC Motor Control using IR sensor(Line follower Robot)

Hardware Kit includes

- Arduino Uno Board -1 No
- Arduino Cable - 1No
- LED(5MM/3MM) - 6Nos
- RGB LED (5M) - 1No
- Seven Segment Display -2Nos
- Push Button with cap - 2Nos
- Resistors - Few
- Bread Board - 1No
- Joystick module -1No
- LDR Module -1No
- PIR sensor - 1No
- Relay - 1No
- IR sensor - 1No
- BO motor - 1No
- L293D Driver Board - 1No
- Jumper Wires -Few

Software Required:

- Arduino IDE

Note:

The certificate will be provided to all participants from Ediylabs Technology Solutions. The hardware kits will be provided by us during the workshop for practice and at the end of the workshop the kits must be returned back .

Workshop Fees:

Rs. 250/Participant

Registration Link
www.ediylabs.com/workshop

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