ROBOTICS CAMP FOR SCHOOL KIDS

Module 1: Introduction to Robots

- ➢ What are Robots?
- ➢ Components of Robots
- ➢ Applications of Robots

Module 2: Brain of Robot

- ➢ Introduction to Microcontroller
- ➢ Structure of Microcontroller
- ➢ Arduino: Introduction
- ➢ Installation of Arduino IDE and sketch overview

Module 3: Programming for Arduino

- ➢ Practice Programs

Module 4: How to glow LED?

- ➢ Basics of LED
- ➢ Programming for LED
- ➢ Blinking of LED
- ➢ Blinking of EVEN and ODD states of LED
- ➢ Project: Traffic Light System

Module 5: Playing with Buttons and Buzzers

- ➢ Overview of Buttons and buzzers
- ➢ Programming of buzzers
- ➢ Playing Buzzer sound

Module 6: Sensing of Light

- Types and Working of Sensors
- Basics of IR sensors
- Working of IR sensors
- Interfacing IR sensors with Arduino
- Calibration of IR sensors
- Controlling LED using IR sensor

Module 7: How a Robot Move?

- Basics of DC motors
- Working of DC motors
- Motors & Motor Drivers
- Interfacing motors with Arduino
- Controlling motors with Arduino

Module 8: Build your Robot

- Structure of Robot
- Assemble the Chassis of Robot
- Integrate Arduino and Motor drivers to Chassis

Module 9: Programming of Line Follower   Robot

- Logic for Line Follower Robot
- Programming for Line Follower Robot

Module 10: Testing of Line Follower Robot

- Placing of Sensors on Robot
- Connections and Calibration of Line Follower Robot
- Testing the Line Follower Robot

Module 11: Obstacle Avoiding Robot

➢ What are Obstacle Avoiding Robot?
➢ Basics and Working of Ultrasonic Sensors
➢ Interfacing of Ultrasonic sensors with Arduino
➢ Controlling LED using Ultrasonic Sensors

Module 12: Programming of Obstacle Avoiding Robot

➢ Logic for Obstacle Avoiding Robot
➢ Programming for Obstacle Avoiding Robot

Module 13: Testing of Obstacle Avoiding Robot

➢ Placing of Sensors on Robot
➢ Connections and Calibration of Obstacle Avoiding Robot
➢ Testing the Obstacle Avoiding Robot

Module 14: Mobile Controlled Robot

➢ What is Mobile Controlled Robot?
➢ Introduction of Bluetooth Module
➢ Working of Bluetooth Module
➢ Interfacing Bluetooth Module with Arduino
➢ Sending Data from Mobile to Arduino

Module 15: Programming of Mobile Controlled Robot

➢ Logic for Mobile Controlled Robot
➢ Programming for Mobile Controlled Robot

Module 16: Testing of Mobile Controlled Robot

- ➢ Placing of Bluetooth Module on Robot
- ➢ Connections and Calibration of Mobile Controlled Robot
- ➢ Testing the Mobile Controlled Robot

NOTE:

>> Students should carry their own PCs.

>> Individual and Group options available.

>> Components also for special price

>>Robotic Kit Contents:

- • *Arduino UNO*
- • *Arduino Cable*
- • *Motors*
- • *LED's and Resistors*
- • *Breadboard*
- • *Wheels*
- • *Wooden or Plastic Chassis*
- • *L293D Motor Driver IC*
- • *Bluetooth Module*
- • *IR sensors*
- • *Ultrasonic sensor*
- • *Cable and Connectors*
- • *Jumper Wires*
- • *Wire Strippers*
- • *Other Miscellaneous Items*

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