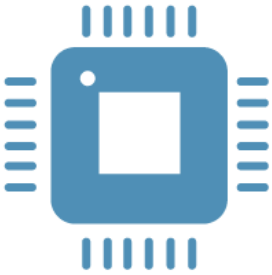
TRAINING PROGRAM



EMBEDDED SYSTEMS [ES]

An embedded system is a controller programmed and controlled by a real-time operating system (RTOS) with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts.

KEY FEATURES

Effective Upskilling Planned Curriculum
Team Learning Awesome Quizzes
Complete Hands on

The below Curriculum is Schedule for 2 weeks

CURRICULUM

Introduction of Embedded Systems
The scope of Embedded systems
Types of Embedded systems & use in industry

Basic Electronics
Resistor, Capacitor, Diodes etc.
Logic Gates using Diodes, Transistors
Power supply
Overview of Digital Electronics
Practical 1: Logic gates using Diodes & Transistor
Practical 2: Power supply (5v)
Practical 3: Led Blinking using 555 IC
Practical 4: IR sensor & Light sensor

C-programming language
Basics of C-language
Use of if, else, while, for loops
Difference between C and Embedded C
Embedded C-Programming

Introduction to Microcontroller
Introduction of Microcontroller
Difference between Microprocessor & Microcontroller
RISC & CISC Architecture
Memory types

Introduction of AVR
Introduction of Atmega328 MCU
Features of ATmega328
AVR studio 4 IDE for AVR
USB programmer for ATmega328

LED interfacing with ATmega328
LED -Theory
Practical 5- Making different LED patterns
Practical 6- LED Rotation

Seven Segment Interfacing with ATmega328
Seven Segment- Theory
Practical 7- Displaying Digits on Seven Segment Display
Practical 8- Counter on Seven Segment Display

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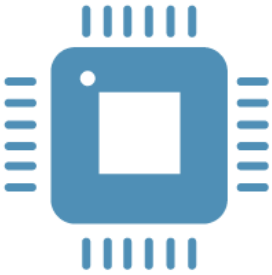
TRAINING PROGRAM



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CURRICULUM

Keypad Interfacing with ATmega328
Keypad- Theory
Practical 9- Different Function on Different Key

DC motor interfacing with ATmega328
DC motor- Theory
H bridge for motor driving
Practical 10- ON/OFF of motor using Key
Practical 11- Direction Controlling of Motor using ATmega328

IR sensor interfacing with ATmega328
IR sensor- Theory
Practical 12- Motor Direction Control Using IR sensor
Practical 13- White/Black Color Sensing using IR sensor

LCD interfacing with ATmega328
LCD- Theory
Practical 14- 16×2 LCD interfacing with ATmega328 (Name Display)
Practical 15- Scrolling Message On LCD

DTMF (Mobile Phone)
DTMF- Theory
Practical 16- Mobile Phone key Detection (Customer Care)
Practical 17- Different operations on different mobile key

Temperature Sensor
Temperature Sensor- Theory
Analog to Digital Converter- Theory of ATmega328
Practical 18- Temperature Detection On LCD

Touch Screen /Accelerometer
Touch Screen / Accelerometer- Theory
Interfacing with ATmega328

Wireless Communication (RF based)
RF Comm. – Theory, 4 bit & 8 bit Encoder & Decoder
Practical 20- Wireless data transfer using ATmega328

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