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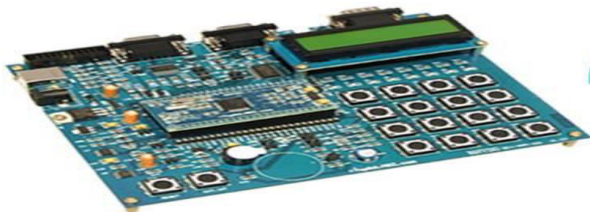
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## Industrial Certified Advanced Embedded Systems with Linux

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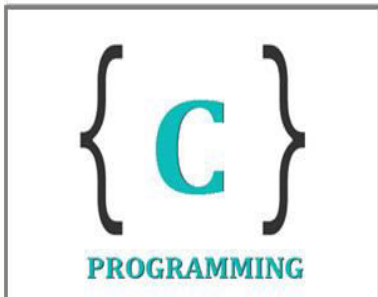
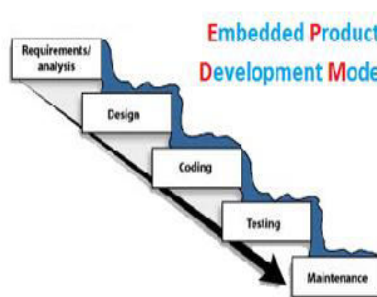
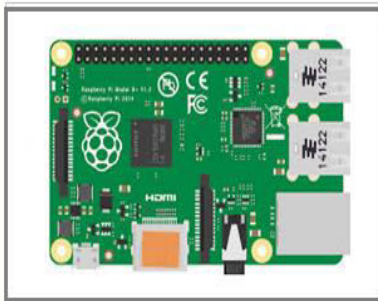
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## Who We Are ?

Embedded Technosolutions is a Professional & Corporate Training Institute & a Company which Working for Indian MNCs & Medium/Small Scale Industries in Product R&D, Development, Manufacturing & Customization.

Our training sessions are purely practical based on industrial standards





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## Till Now We Worked for the following Industries

- Crompton Greaves Ltd, Mumbai
- Laboratory Corporation of America, LabCorp, Burlington, NC USA
- Netfinity, India
- Continental Grain Corporation
- Brook Furniture Rental, Chicago, IL
- ITA, Bangalore
- RAK Ceramics, Mumbai
- Nvidia, Pune
- ARORA, Mumbai
- RED Cell, Mumbai
- Secutech, Mumbai



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## Embedded C Programming

### Chapter 1 : Introduction to C

- 1.1 Special features of c
- 1.2 C compilation process with GCC under Linux
- 1.3 C identifiers, variables, keywords and constants
- 1.4 C data types

### Chapter 2: Instructions

- 2.1 Operators
- 2.2 Decision control instructions
- 2.3 Loop control instructions



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## Chapter 3: Functions

- 3.1 Library functions
- 3.2 User defined functions
- 3.3 Function declaration and definition
- 3.4 Passing arguments by value and by address
- 3.5 Storage classes
- 3.6 Preprocessors

## Chapter 4: Arrays and strings

- 4.1 Array declaration and initialization
- 4.2 Passing arrays to functions
- 4.3 Initialization of strings
- 4.4 String library functions

## Chapter 5: Pointers

- 5.1 Pointer basics
- 5.2 Passing arguments by address
- 5.3 NULL pointers



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## ARM 7 Cortex-M0 Series Processor

### Chapter 1: Introduction to ARM Processor

- 1.1 Introduction to embedded system and ARM Processor
- 1.2 ARM processor family
- 1.3 Application of ARM Processor
- 1.4 Compiler
- 1.5 Difference between RISC & CISC

### Chapter 2 : LPC2148 Microcontroller Pin details, Memory

- 2.1 LPC2148 ARM7 microcontroller
- 2.2 Features of LPC2148
- 2.3 Block diagram of LPC2148
- 2.4 Pin diagram of LPC2148
- 2.5 Architectural overview
- 2.6 On-chip flash program memory
- 2.7 On-chip static RAM

### Chapter 3 : Keil IDE

- 3.1 Introduction to Keil IDE





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3.2 Creating project with Keil

3.3 Debugging

## **Chapter 4 : Hardware Interface**

4.1 Minimum system requirements for LPC2148

4.2 Hardware interfacing details

## **Chapter 5 : System Control**

5.1 PLL

5.2 External Interrupt input

5.3 Power Control ,VPB

## **Chapter 6 : Pin Connect block ,GPIO**

6.1 Pin Connect Block

6.2 General Purpose I/O:

LED and switches interfacing

Buzzer

LCD

DC Motor

Matrix keypad interfacing



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## Chapter 7 : Timer , ADC , UART

- 7.1 Timer
- 7.2 10-bit ADC
- 7.3 UART : Features, Serial Communication

## Chapter 8 : I2C , SPI ,PWM

- 8.1 2C-busserialI/OController:Features&InterfacingwithAT24C04
- 8.2 SPI-Serial I/O Controller : Features & Interfacing with SD Memory Card
- 8.3 PWM



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## Raspberry Pi with IOT Embedded Linux

### Chapter 1

- 1.1 Program Raspberry Pi : a credit-card sized computer
- 1.2 Python programming for Raspberry Pi
- 1.3 Interacting and configuring the RPi OS
- 1.4 ARM 11 architecture
- 1.5 Porting of Linux Kernel and booting RPi

### Chapter 2

Linux programming basics

### Chapter 3

- 3.1 Programming the GPIO and interfacing peripherals With Raspberry Pi
- 3.2 Generating PWM signals through the Pi

### Chapter 4

- 4.1 Programming and work with UART protocol
- 4.2 Remote Login methods: HyperTerminal, Ethernet



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## Chapter 5

Work with I2C protocol

## Chapter 6

Developing GUI with TKinter

## Microcontroller 8051

### Chapter 1

1.1 Introduction to Embedded Systems

1.2 Scope in Embedded Systems

### Chapter 2

2.1 Introduction to microcontroller 8051 series

2.2 Hardware architecture of controller

2.3 Controller I/O ports

2.4 Memories of controller

2.5 Registers and Register bank of controller

2.6 Concept of Serial communication ,Interrupt etc.



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## Chapter 3

- 3.1 Introduction of Embedded Software
- 3.2 Introduction of Embedded C Programming and programming concepts
- 3.3 Introduction of program burning / flashing software

## Chapter 4

- 4.1 I/O interfacing concept
- 4.2 Led Blinking logic and delay generation routine
- 4.3 Design of Traffic Light Controller System

## Chapter 5

- 5.1 Character LCD 16x2 interfacing logic and concept
- 5.2 Introduction of LCD command and data signals
- 5.3 LCD based programming
- 5.4 Practical project based on character LCD

## Chapter 6

- 6.1 Matrix keypad interfacing logic and concept
- 6.2 Introduction of key pad interfacing using polling method
- 6.3 Matrix keypad programming
- 6.4 Practical project based on matrix keypad



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## Chapter 7

- 7.1 Introduction to serial communication
- 7.2 Serial communication concept
- 7.3 Introduction of serial communication firmware and registers
- 7.4 Serial communication programming
- 7.5 Practical application based on Serial communication

## Chapter 8

- 8.1 Introduction of interrupts in controller
- 8.2 Interrupt logic and concept
- 8.3 Interrupt routines / programming
- 8.4 Key interfacing using interrupt
- 8.5 Practical application based on interrupt

## Chapter 9

- 9.1 Introduction of Relay
- 9.2 Relay interfacing and comparison of relay with other switching devices
- 9.3 Relay programming
- 9.4 Practical application based on relay



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## **Chapter 10**

- 10.1 Introduction of ADC
- 10.2 ADC interfacing
- 10.3 ADC programming

## **Chapter 11**

- 11.1 Introduction of DTMF mobile technology
- 11.2 DTMF technology interfacing in real application
- 11.3 DTMF programming
- 11.4 Practical project design based on DTMF technology

## **Chapter 12**

- 12.1 Introduction of RF Communication
- 12.2 RF technology interfacing in real application
- 12.3 RF module programming
- 12.4 Practical project design based on RF technology

## **Chapter 13**

- 13.1 Introduction to RFID communication
- 13.2 RFID technology interfacing in real application
- 13.3 RFID module programming & Practical Project Designing



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## Wireless Communication

### Chapter 1

- 1.1 Introduction of DTMF mobile technology
- 1.2 DTMF technology interfacing in real application
- 1.3 DTMF programming
- 1.4 Practical project design based on DTMF technology

### Chapter 2

- 2.1 Introduction of RF Communication
- 2.2 RF technology interfacing in real application
- 2.3 RF module programming
- 2.4 Practical project design based on RF technology

### Chapter 3

- 3.1 Introduction to RFID communication
- 3.2 RFID technology interfacing in real application
- 3.3 RFID module programming
- 3.4 Practical project design based on RFID technology





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## Chapter 4

- 4.1 Introduction to GSM communication
- 4.2 GSM technology interfacing in real application
- 4.3 GSM module programming
- 4.4 Practical project design based on GSM technology

## Chapter 5

- 5.1 Introduction to Bluetooth communication
- 5.2 Bluetooth technology interfacing in real application
- 5.3 Bluetooth module programming
- 5.4 Practical project design based on Bluetooth technology



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## Embedded Linux

### Chapter 1

- 1.1 Introduction to Operating System —
- 1.2 Kernel – What is Kernel?
- 1.3 Kernel types and its structural implementations
- 1.4 Why OS is required in an Embedded Device?
- 1.5 Entire flow of operations of a Device

### Chapter 2

- 2.1 Boot loader
- 2.2 Primary Bootloader
- 2.3 Secondary Bootloader
- 2.4 U-boot



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## Chapter 3

3.1 Partition & Rootfs

3.2 Partition Schemes

3.3 Rootfs Organization

3.4 SD Card Layout

3.5 Selected Rootfs of File system



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- As we are working for industries for their product development, R&D, Customization & Manufacturing we get direct recruitment related notification from that companies whenever there is the recruitment in the that companies.
- Also other companies in the market they also call us regarding recruitment process.

These entire JOB related notifications we exclusively provide to our students and they can apply in that companies directly. We upload the password protected job notifications on our website, students can access that job notifications from our website with password.