8051 Microcontroller Training Program

The course is designed for those who want to pursue Embedded Systems. Embedded Technology Training enables a student, a technologist or a hobbyist to develop microcontroller based systems. The need of time is that every engineer should equip with Embedded Technologies. This course of Embedded System is composed around 8051 Microcontroller. This Course cover complete details about Intel 8051 microcontroller technology include techniques for burning Flash ROM of Microcontroller, Circuit designing etc. So, utilize your talent with technology of present and technology of the future.

8051 microcontroller at glance

The Intel 8051 is Harvard architecture, single chip microcontroller (µC) which was developed by Intel in 1980 for use in embedded systems. Intel's original versions were popular in the 1980s and early 1990s, but has today largely been superseded by a vast range of faster and/or functionally enhanced 8051-compatible devices manufactured by more than 20 independent manufacturers including Atmel, Infineon Technologies (formerly Siemens AG), Maxim Integrated Products (via its Dallas Semiconductor subsidiary), NXP (formerly Philips Semiconductor), Nuvoton (formerly Winbond), ST Microelectronics, Silicon Laboratories (formerly Cygnal), Texas Instruments and Cypress Semiconductor. Intel's official designation for the 8051 family of µCs is MCS 51.

Source: Wikipedia

8051 Microcontroller application

Scroll Message Display
Remote Control Applications
Industrial Application

Data Loggers
Security Systems
Measuring Instruments

Digital weighing Machine
Robotics
And many more.

Measuring Instruments

Consumer Electronics

Robots

Scroll Message Display

Traffic Signal Controller

Security System

Features of 8051 training program

Training program is designed to consider complexity involved in designing of embedded system. In embedded system programmer has to deal with both hardware and software. Code debugging is complex and code execution is also not transparent to user, so keeping all these in minds, we specially focus on following points:

- Practical oriented training.
- Study material is given along with training program.
- Real world examples are discussed during training.
- Various debugging techniques are demonstrated during training program.

For more please visit http://www.imbuent.com/specialfeature.html

Opportunities in embedded linux

No doubt that 8051 is evergreen microcontroller and it was being used and will be used in future. These days 8051 processor comes with advance peripherals on the chip like USB, SPI controller, I2C controller etc. There are many development tools for 8051, proprietary and open source both. Many development boards are available in market. Products based on 8051 are available in market and new products are also getting designed on 8051. So many big, medium and small sized companies are working on 8051. 8051 is also entry point to the world of embedded system development. 8051 opens door to the world of embedded system.

Course description

Module 1: Introduction
- Introduction of Embedded System
- Evolution in Microcontroller technology
- Past, Present & Future of Embedded System

Module 2: Microcontroller 8051
- Microcontroller 8051 Architecture
- Instruction Set Architecture
- Bus Architecture
- Interrupts and Timers
- Microcontroller 8051 Assembly Language

Module 3: Assembly Language
- Assembly Language of 8051 Microcontroller
- Use of Assemblers & Simulator
- Programming for 8051
- Examples programs for 8051

Module 4: IO Device Interface and practical
- Study of Input Output Devices
    - LED Display
    - DIP Switch
    - Intelligent LCD Display
    - Matrix Keyboard
    - Stepper Motors and Types of Stepper Motors
    - Serial Communication Concepts
    - Practices on interfacing circuits
    - Practices of Serial Programmer

Module 5: Advance assemble and C Language
- Preprocessor directives
- Inline assembly in C
- Calling of Assembly function in C
- Convert all Assembly Program in C

Module 6: Project
- Projects in Embedded System *

Module 7: Conclusion
- **Latest trends in embedded fields**
- **Introduction to ...**
    - In Circuit Emulators
    - JTAG debug interface
    - RTOS
    - Role of Linux in Embedded System

Important Links

Sample lectures
http://www.imbuent.com/sampleslides.html

Registration procedure
http://www.imbuent.com/training8051.html

Imbuent 8051 Development Board
http://www.imbuent.com/board8051.html

Imbuent Embedded System Events
http://www.imbuent.com/events.html

Important

1. CD Contents

▲ Example Programs
▲ 8051 Development tools
▲ 8051 Articles
▲ IMBUENT Data Sheets
▲ Presentations
▲ IMBUENT book on 8051

2. Course Duration
60 Hours

3. Project
During training a trainee will work on a project. Expense of project is beard by trainee

4. Development board used in training program
IMBUENT 8051 development board will be used in training program.

Prerequisite

Knowledge of Basic Electronics, General Programming Skills, and Knowledge of any microcontroller is added advantageous

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