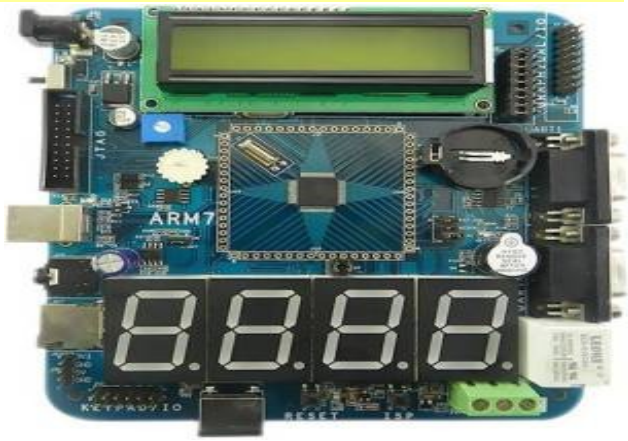
C, Data Structure, ARM and Embedded C Training In Bangalore

EMBISYSLABS

Training and Practicals Process

ARM 7 Board [LPC 2148]



Classes 5-Days a week for Weekdays Batch
Theory(1 1⁄2 -2 hrs.) and practical (2 hrs.)
Classes 2-Days for a Weekend Batch(Sat & Sun)
Theory(2 1⁄2 -3 hrs) and practical (3hrs.)
Daily theory and lab assignments
Repeatation classes will be conducted as required.

MODULE 1: C and DATA STRUCTURE PROGRAMMING

CH1. GETTING STARTED

- Why C Programming Language
- History & Features
- Compilation Model
- How to Compile & Run a C program
- Strategy of Desinging a Program

CH2. FUNDAMENTALS OF PROGRAMMING

- Variables & Constants
- Keywords & Data Types
- Identifires & Rules
- I/O Functions

CH3. OPERATORS AND CLASSIFICATIONS

- Arithmetic Operators
- Bitwise Operators
- Logical Operators
- Increment Operators
- Decrement Operators
- Relational Operators
- Conditional Operators

CH4. CONTROL FLOW STATEMENTS

- Sequential statements
- Decision making statements
- if,else,nested-if
- break,switch

CH5. LOOPING STATEMENTS

- For Looping
- While Looping
- Do—While Looping
- Continue Looping

CH9. FUNCTIONS AND ITS TYPE

- Why Functions ?
- Function Declarations
- Function Prototypes
- Returning a Value or Not
- Arguments and Parameters
- Function Pointers
- Recursion and Recursive function

CH10. SCOPE and LIFETIME OF VARIABLES

- Block Scope
- Function Scope
- File Scope
- Program Scope
- The auto Specifier
- The static Specifier
- The register Specifier
- The extern Specifier
- The Const Modifier
- The Volatile Modifier

CH11. POINTERS [PART 2]

- Dynamic Storage Allocation -
- malloc(),calloc(),realloc(),free()
- Functions Returning a Pointer
- An Array of Character Pointers
- Two Dim.Arrays vs. Array of Pointers
- Command Line Arguments
- Pointers to Pointers
- Use of Function Pointers

CH12. SERCHING &SORTING

- Linear Search&Binary Search
- Bubble sort & Selection Sort

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CH6. C PRE-PROCESSOR

- File inclusion
- Macro substitution
- Conditional Compilation
- #ifde, #ifndef

CH7. ARRAYS AND STRING

- Definition and Declaration of Array
- Definition and Declaration of String
- Memory Layout &accessing Array Elements
- String Library Functions
- Two dimensional Arrays

CH8. POINTERS [PART 1]

- Definition &Declaration of Pointer
- Indirect Access using Pointers
- Pass by Reference
- Rela. b/w Arrays and Pointers
- Type Casting
- Pointer to an Array
- Array of Pointers

CH15. FILE INPUT/OUTPUT

- System Calls vs. Library Calls
- I/O Library Functions
- Standard Input/Output Descriptors
- fopen(),fread(),fwrite(),fclose()
- Character Input vs. Line Input
- fscanf(),fprintf(),fclose()
- fgtes(),fputs(),fgetc(),fputc()

CH13. STRUCTURES

- Fundamental Concepts
- Describing a Structure
- Operations on Structures
- Functions Returning Structures
- Passing Structures to Functions
- Pointers to Structures
- Array of Structures
- Functions Returning a Pointer to a Structure
- Structure Padding
- # pragma Definition

CH14: STRUCTURE RELATED (UNION)

- Typedef - New Name for an Existing Type
- Bit Fields
- Union
- Enumerations
- Volatile

CH16: DATA STRUCTURE USING C

- Why data structure ?
- Definition and Classification
- Stack using Array and Pointer
- Queue using Array and Pointer
- Singly link lists
- Circular link lists
- Double link list
- Introduction to Tree &Binary Tree

C and Data Structures Hands-on Assignments in Class Room

1. More than Hundred Subjective Questions in C and Data Structure Programming

2. More than Hundred Objective Questions in C and Data Structure Programming

MODULE 2: ARM7TDMI-S and EMBEDDED C PROGRAMMING

CH1. INTRODUCTION TO ARM

- Why Embedded C Programming
- Why Assembly Programming
- History & Features
- Compilation Model
- How to Compile & Run a C program
- Strategy of Desinging a Program

CH6. ARM PROGRAMMER'S MODEL

- Data Size and Instruction Size
- Operating Modes
- ARM Registers Sets
- Progarm Status Register

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CH2. ARM DEVELOPMENT TOOLS SETUP
- GNU Compiler,Keil
- Cygwin,Makefile
- Linker script,Startupfile

CH3. ARM LPC2148 ARCHITECHTURE
- Registers and Bus Architecture
- Exception modes and Pipelinig
- Generals Purpose I/O's
- Memory Map,MAM,ISP & IAP
- PLL,VLSI Peripherial Bus Driver
- Power Control,Interrupt Systems
- PLL Programming

CH4. ARM PROGRAMMING
- Multi-function Pin explanation
- GPIO Programming
- IOSET,IOCLR,IODIR,IOPIN Regs.
- I/O Direction Setting

CH5. I2C PROGRAMMING
- I2C overview
- I2C-Bus Configuration
- I2C Operating modes
- I2C Master Transmitter mode
- I2C Master Receiver mode
- I2C Implementation and operation
- I2C Programming

CH7. INTERRUPTS and ISR
- Interrupt Definition and its Structure
- FIQ Interrupts
- Vectored IRQ
- Non Vectored IRQ nested
- Registering Interrupt Handler

CH8. PERIPHERIALS PROGRAMMING
- GPIO Interfacing Programming
- LCD Interfacing Programming
- LED Interfacing Programming
- LED with Switch Interfacing Programming
- INTERRUPT Programming
- Timer and Counter Programming
- UART Interfacing Programming
- UART with LCD Interfacing Programming
- PWM Programming Programming
- ADC and DAC Interfacing Programming
- LCD ,ADC and DAC Interfacing Programming

CH9. SPI PROGRAMMING
- SPI Overview
- SPI Data transfer format
- SPI Data to clock phase relationship
- SPI Master operation
- SPI Slave operation
- SPI Register description
- SPI Programming

Embedded C and ARM7 Hands-on Assignments in Class Room

1. All Peripherials Program with Keil C Simulator
2. All Peripherials Program on ARM Board (LPC 2148)
3. Class Room Test based on Embedded C and ARM Architectures

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