

C, C++ and Data Structures

Synopsis

“Getting the Right Knowledge to the Right People at the Right Time”

Miracle Corporate Solutions (P) Ltd is leading in the software training industry with its unique and result oriented training methodologies on cutting edge domains. We have more than 2000 success stories in a very short span. We believe in quality and commitments.

This is a pre-requisite course for all the trainees who are interested in any other course in embedded systems and telecom software development. This course is designed specially to make expert programmers in C/C++ language. Lots of interesting projects are developed during C/C++ learning process where trainees gets the hands on design and development experience of real life embedded systems.

It also covers the telecom fundamentals and communication protocols like GSM,GPRS and UMTS networks.

"Genius might be that ability to say a profound thing in a simple way."

—Charles Bukowski

Course Objectives:

After completing this course, students will be able to:

- Gaining Expertise in C & C++ Programming with data structures.
- Hands on debugging expertise in MSDEV VC++ environment,
- Using VC++ 6.0, MFC, COM, DCOM, ATL, Active X.

Suitable for

Technical professionals; IT and business managers who need to learn about current and future mobile wireless technologies; students studying or researching wireless communications and cell-phone technologies

Prerequisites

A degree (B.E., B.Tech, MCA, M.Tech) in Electronics/Electrical, Computer Science or Information Technology.

Programming experience in C. Working capability on any one operating system (Windows, Linux).

Delivery

This is instructor led Embedded Systems and Mobile Communication training. Each section of the material covered by the tutor is followed by hands-on practical exercises for which worked examples of the solutions are typically provided.

Contents

Advance C Programming

- Basics of C programming
Compilation, Linking, Debugging, Execution
Header Files, Source Files
Declaration & Definition
- Data Types, Scope of variables
Static ,Global ,Local Variables, Loops, Conditional
Statement
- Macros, Functions
- Arrays & Pointers & Structures
- Memory APIs, File I/Os.
- String Manipulations.
- VC++ 6.0 Environment (DLL/ Lib /EXE, Workspace
Creation)
- Debugging
- Assignments

Dynamic Link Libraries

- Concept of DLL and LIB
- Advantage and Disadvantage of DLL and LIB
- Type of DLL, Regular DLL , Extended DLL
- Difference b/w Regular DLL and Extended DLL.
- Creation and Calling DLL directly through Win APIs.
- Creation of the LIB.

Guide Lines for Practical Session Home Work

- Developing a paint application in which apply all the special affects in the
DLL and Call the DLL function from the program

Advanced C++ Programming

- Object Oriented Programming.
- Polymorphism
- Inheritance
- Encapsulation
- Abstraction.

- Virtual Functions
- Pure Virtual Function and Abstract Classes.
- Friend Functions.
- Static Functions.
- Private Constructors
- Virtual Destructors.
- Singleton Classes
- Operator Overloading
- Function Overloading.
- Function Overriding.
- Advance Template Library.

Data Structure curriculum

Introduction to DS.

- BIG –Oh notation, Algorithm complexity analysis.

Array and pointer:

- Array notation(pointer, direct etc)
- Pointer fundamentals, Pointer operations. Parameter passing as pointers etc.

Linked list Basic

- Data structures, Memory representations, Creation, Destructions,
- Insertion, Deletions(Interview specific)

Linked list Advanced

- Reversing link list(different methods)
- Doubly LL, Circular LL
- Interview questions on LL

Stack and queue

- Stack Fundamentals, implementation
- Queue Fundamentals, Implementation

Advance DS overview

- Trees, Binary Trees, Has Table etc.

Sorting and searching methods

- Various sorting techniques(Merge sort, Quick sort etc)
- Various search techniques(binary search, Radix search etc)

Projects

1. Developing an MP3 Player Application using MCI framework.
2. Developing TCP/IP Chat Client/Server Application.
3. Developing an 8bit, 16bit, 24bitBMP Viewer Application.
4. Developing ASK, QPSK, FSK Modulators.
5. Developing GSM Physical Layer simulated environment.
6. Developing a Media Processing Library.
7. Developing a data encryption algorithm.
8. Developing Virtual Mobile simulator,
9. Developing 3D Game Application.
10. Developing a Modem Communication Library.

FACULTY:- CORPORATE PROJECT LEADER FROM CMM LEVEL 5 COMPANY

NOTE: - All training will be given by Corporate Trainers only. All trainers from IIT (M.Tech.) background having four to seven years experience in respected field, working with CMM Level 5 companies

NOTE: The trainee has to sign the Non disclosure Agreement (NDA) before joining any industrial project.

Duration	2 Months
Total Seats	20
Fee	8,000/-

Corporate Client: - Samsung, Philips, Motorola, Nokia. Alcatel, Infineon, Skyworks, Sirf Technologies, DCM Technologies, Pixtel-Mediatek, STMicroelectronic, L & T Software, Aricent, Flextronics, Conexant, Coware, UMSL, Kyocera, LG Soft, BEL, DRDO, Adobe Systems, Wipro, Infosys, HCL, TCS, PCS, and many more

The major aims of the Program are to:

1. Provide a strong foundation in the emerging disciplines of Mobile Application, Telecom Systems and its applications for professionals in the software development industry.
2. Will improve the required skill set of the system software professional.
3. Program will provide excellent exposure in VC++ 6.0 and eVC++ 4.0, and its applications in up coming field like Telecom, Wireless communications, Network Management, Automation and Process Controls.
4. Incorporates the required skills and experience on Embedded Systems and RTOS in the professionals for the exponentially growing industrials demands on this line.

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Also Available:

**VB.Net+ASP.Net+C#+XML
Core Java+Advance Java+Struts**

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java@miracleindia.com

Features:

- The study material and references will be provided to the trainees by Miracle Embedded Systems.
- This reference material is developed by our corporate trainers and software engineers from top notch industries.
- There will regular attendance of the student. One has to show at least 75% attendance then only he will be eligible for certification.
- The grades will be assigned on the basis of regular test results.
- There will be recognitions and rewards for well performing candidates.