

C++ for C Programmers

Description

This 4-day course teaches participants the key concepts and principles of C++.

Format

5 days 50% lecture 50% lab exercises

Participants

The course is intended as a short conversion for C programmers and is therefore intended for people with little or no C++ experience.

Prerequisites

Delegates are expected to be competent C programmers, they need to understand the concept of files and directories and be familiar with the use text editors.

Working knowledge of Windows® or Linux®/Unix® operating systems

Presentation Requirements

The maximum number of delegates for the course is 12

A room that allows delegates to both work freely at their workstation and view a screen

Direct project from computer system for Tutor for display of slides and demonstration of Programming

PC to screen projector
Whiteboard or flipchart

Course Materials

Course notes, slides and exercises are supplied in Adobe Acrobat format files (suitable for PC, Mac, and Unix)

Lab exercises are supplied in text files (Unicode UTF-8)

Course Outline

Introduction to the Course

How C++ Differs From C

C++ Program structure and Environment, Comments, Keywords, New Features

Namespace and Linkage

Defining a namespace, Extending a namespace, Accessing a namespace, Scope resolution operator, Namespaces and C Code, Namespace alias, Mangled Names

Input And Output

Stream I/O in C – refresh, Stream I/O in C++

Reference Variable

References, Passing arguments by reference, Returning a reference Information Modelling - Object-Oriented Systems Analysis, Definition of an Object, Attributes,

Classes

Objects in C++, Structs and Classes, Class Members, Member functions (Methods)

Functions in C++

Default Arguments, Function

Overloading, Anonymous

Arguments, The this pointer

Special Member Functions

Initialisation of Object, Object

Constructors, Timing of

Constructors, Constructors as

conversion functions,

Trivial Constructors, Initialisation

of Class Members, The member

Initialisation List

Overloading

Declarations, Overload

Resolution, Operators, Built-in operators

Aggregation and Association

Classes as class members,

Associated Classes

Member Access Control

Access Specifiers, Friends, Nested classes

Declarative Regions and Scopes

Point of declaration, Local Scope,

Function Prototype Scope,

Function scope, Namespace

Scope, Class Scope, Name Hiding,

Name Lookup, Unqualified name

lookup, Argument-dependent

name lookup, Qualified name

lookup

On-Site Equipment Requirements

To deliver the course each delegate should have individual access to a system, the system shall have:

A ANSI/ISO C++ Compiler

A text editor

An Account on the system that allows a user to compile and execute programs and modify their environment variables

Winzip or equivalent

Additionally it must be possible for the course materials including lab exercises to be transferred onto the systems from an ISO 9660 CD-ROM

If no suitable equipment is available then TFJ can arrange for the hire of equipment for the duration of the course.