C Plus Plus and Programming Basics for Non-Programmers (TTCP2000)

Category: Software Development & Programming | **Vendor:** Trivera Tech

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

C++ and Programming Basics for Non-Programmers is a five-day, basic-level training course geared for IT candidates who have little or no prior experience in computer programming. Throughout this gentle introduction to programming and C++, students will learn to create applications and libraries using C++ using best practices and sound OO development techniques for writing object-oriented programs in C++. Special emphasis is placed on object-oriented concepts and best practices throughout the training.

About This Course

C++ and Programming Basics for Non-Programmers is a five-day, basic-level training course geared for IT candidates who have little or no prior experience in computer programming. Throughout this gentle introduction to programming and C++, students will learn to create applications and libraries using C++ using best practices and sound OO development techniques for writing object-oriented programs in C++. Special emphasis is placed on object-oriented concepts and best practices throughout the training.

Who Should Attend

This course is intended for anyone who is new to software development and wants, or needs, to gain an understanding of the fundamentals of coding and basics of C++ and object-oriented programming concepts. This course is for Non-Developers, or anyone who wants to have a basic understanding of and learn how to code C++ applications and syntax

Prerequisites & Entry Requirements

General Prerequisites:

This basic course is intended for anyone who is new to software development and wants, or needs, to gain an understanding of the fundamentals of coding and basics of C++ and object-oriented programming concepts.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Companies are constantly challenged to keep their applications, development projects, products, services (and programmers!) up to speed with the latest industry tools, skills, technologies and practices to stay ahead in the ever-shifting markets that make up today’s fiercely competitive business landscape. The need for application, web and mobile developers and coders is seemingly endless as technologies regularly change and grow to meet the modern needs of demanding industries and clients.

Detailed Course Outline

Fundamentals of the Program Development Cycle

- Computer Architecture
- The Notion of Algorithms
- Source Code vs. Machine Code
- Compile-Time vs. Run-Time
- Software Program Architecture
- Standalone
- Client/Server
- Distributed
- Web-Enabled
- IDE (Interactive Development Environment) Concepts
- Looping Constructs
- Counter-Controlled Repetition
- Sentinel-Controlled Repetition
- Nested Control Constructs
- break and continue Statements
- Structured Programming Best Practices
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Writing Methods (Functions)

- Static vs. Dynamic Allocation
- Declaring Methods
- Declaring Methods with Multiple Parameters
- Method-Call Stack
- Scope of Declarations
- Argument Promotion and Casting
- Designing Methods for Reusability
- Method Overloading

Arrays

- Purpose of Arrays
- Declaring and Instantiating Arrays
- Passing Arrays to Methods
- Multidimensional Arrays
- Variable-Length Argument Lists
- Using Command-Line Arguments
- Using Environment Variables

Deeper Into Classes and Objects

- Controlling Access to Class Members
- Referencing the Current Object Using this
- Overloading Constructors
- Default and No-Argument Constructors
- Composition of Classes
- Garbage Collection and Destructors
- The finalize Method
- Static Class Members

Defining Classes Using Inheritance Application Development Fundamentals

- Structure of a C++ Program
- Memory Concepts
- Fundamental Data Type Declarations
- Fundamental I/O Concepts
- Fundamental Operators
- Arithmetic Operators
- Logical Operators
- Precedence and Associativity
- Building and Deploying a C++ Program
- Superclasses and Subclasses
- Advantages of Using Inheritance
- protected Class Members
- Constructors in Subclasses
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Increasing Convenience by Using Polymorphism

- Purpose of Polymorphic Behavior
- The Concept of a Signature
- Abstract Classes and Methods
- final Methods and Classes
- Purpose of Interfaces
- Using and Creating Interfaces
- Common Interfaces of the C++ API

Files and Streams

- Concept of a Stream
- Class File
- Sequential Access
- Object Serialization to/from Sequential Access Files

Fundamental Searching and Sorting

- Introduction to Searching Algorithms
- Linear Search
- Binary Search
- Introduction to Sorting Algorithms
- Selection Sort
- Insertion Sort
- Merge Sort

Fundamental Data Structures

- Dynamic Memory Allocation
- Linked Lists
- Stacks
- Queues
- Trees

Exception Handling

- Types of Exceptions
- Exception Handling Overview

Introduction to Classes and Objects

- Classes, Objects and Methods
- Object Instances
- Declaring and Instantiating a C++ Object
- Declaring Methods
- set and get Methods
- Initiating Objects with Constructors
- Primitive Types vs. Reference Types

Flow Control

- Conditional Constructs
- Exception Class Hierarchy
- Extending Exception Classes
- When to Throw or Assert Exceptions

Formatted Output

- printf Syntax
- Conversion Characters
- Specifying Field Width and Precision
- Using Flags to Alter Appearance
- Printing Literals and Escape Sequences
- Formatting Output with Class Formatter

Strings, Characters and Regular Expressions

- Fundamentals of Characters and Strings
- String Class
- String Operations
- StringBuilder Class
- Character Class
- StringTokenizer Class
- Regular Expressions
- Regular Expression Syntax
- Pattern Class
- Matcher Class

Fundamental GUI Programming Concepts

- Overview of Swing Components
- Displaying Text and Graphics in a Window
- Event Handling with Nested Classes
- GUI Event Types and Listener Interfaces
- Mouse Event Handling
- Layout Managers

, Introduction to Computer Programming & Thinking Like a Programmer

Programming Tools

Explain why we use various tools when programing

Define the four major types of tools

Lab: Setup the Development Environment'

Programming Basics

Explain why different languages have different syntax

Understand some basic features of any program

Explain why we would break a program apart

Using an IDE / Integrated Development Environment

Thinking About Objects

Define what an object is

Explain the difference between an object and a class

Design a class using a class diagram

Understand how to define a basic class

Explain how to compile and run a C++ application

Programming Constructs

Explain what variables and constants are and when to use the

Explain what arrays are and why they are used

Explain what a method is

Write if statements

Write loops

Modeling an Television Object

C++ Basics

C++ General Language Features

Basic syntax

Data types

Program flow

If/else

Loops

Intro Functions

Data Structures

Structures

Classes

Intro Object-Oriented Features

Overview of O-O concepts

Constructors/Destructors

Static (class members)

Constants

Object Relationships

Abstract Types

Dynamic Memory

Object Lifecycle

new

delete

Inheritance

Base Classes

Derived Classes

Overriding members

Abstract members and classes

Value Types vs Reference Types

Exceptions

Throwing

Catching

Defining custom exceptions

Intro C++ Standard Library

I/O classes

Collections

Utility

Additional Course Details

Nexus Humans C Plus Plus and Programming Basics for Non-Programmers (TTCP2000) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the C Plus Plus and Programming Basics for Non-Programmers (TTCP2000) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for C Plus Plus and Programming Basics for Non-Programmers (TTCP2000)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day C Plus Plus and Programming Basics for Non-Programmers (TTCP2000) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the C Plus Plus and Programming Basics for Non-Programmers (TTCP2000) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for C Plus Plus and Programming Basics for Non-Programmers (TTCP2000)?

Yes, we provide corporate training, dedicated training, and closed classes for C Plus Plus and Programming Basics for Non-Programmers (TTCP2000). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: C++

Q: Why choose Nexus Human for C Plus Plus and Programming Basics for Non-Programmers (TTCP2000)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your C Plus Plus and Programming Basics for Non-Programmers (TTCP2000) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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