



Clear Programming Paradigm C and C++ Training and Outsourcing



An overview of a C training course offered by
Clear Programming Paradigm LLC

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C Training Overview

This five-day C training course is an introduction to the C programming language, the C standard library, and C11 to C2X standards. The training is offered both remotely and on-site. No prior experience with C is required to attend the course.



This C training course is for individuals and teams who wish to learn the C programming language. The recommended group size is up to ten people.

The training day consists of a C theoretical introduction, C source code examples, and C coding exercises and tasks. During the training, there is an ongoing Q&A session between the trainer and participants. The final day is dedicated to creating a C project, debugging the solution, and reviewing code.

Topics

The following is a breakdown of all the C topics by day:

Day 1	Day 2
<ul style="list-style-type: none"> • Introduction • Types and Declarations • Operators and Expressions • Statements <ul style="list-style-type: none"> ○ Selection Statements ○ Iteration Statements • Arrays • Pointers • Functions • The const Qualifier • Enumerations • Function Pointers • Preprocessor <ul style="list-style-type: none"> ○ Conditional Compilation ○ Built-in Macros ○ Function-like Macros • Q&A and Exercises 	<ul style="list-style-type: none"> • Structures <ul style="list-style-type: none"> ○ Introduction ○ Initialization ○ Member Access Operator ○ Copying Structures ○ Pointers to Structures ○ Self-Referencing Structures ○ Structures as Function Arguments • Unions • Typedef • Conditional Expression • Dynamic Memory Allocation <ul style="list-style-type: none"> ○ malloc ○ calloc ○ realloc • Storage and Scope • Q&A and Exercises

Day 3	Day 4
<ul style="list-style-type: none"> • Standard Input and Output • File Input and Output • Header and Source Files • The C Standard Library <ul style="list-style-type: none"> ○ String Manipulation ○ Memory Manipulation Functions ○ Mathematical Functions ○ String Conversion Functions ○ Time and Date • Linkage • Bitwise Operators • Dos and Don't's <ul style="list-style-type: none"> ○ Do Not Use the gets Function ○ Initialize Variables Before Using Them ○ Do Not Read Out of Bounds ○ Do Not Free the Allocated Memory Twice ○ Do Not Cast the Result of malloc ○ Do Not Overflow a Signed Integer ○ Cast a Pointer to void* When Printing Through printf ○ Do Not Divide by Zero ○ Where to Use Pointers? ○ Prefer Functions to Function-Like Macros ○ static Global Names ○ What to Put in Header Files? • Q&A and Exercises 	<ul style="list-style-type: none"> • C 11 Standard <ul style="list-style-type: none"> ○ Static_assert ○ The _Noreturn Function Specifier ○ Type Generic Macros Using _Generic ○ The _Alignof Operator ○ The _Alignas Specifier ○ Anonymous Structures and Unions ○ Aligned Memory Allocation: aligned_alloc ○ Unicode Support for UTF-16 and UTF-32 ○ Bounds-Checking Functions • C2X Standard <ul style="list-style-type: none"> ○ Static_assert Without a Message ○ Attributes ○ No Parameters Function Declaration ○ The strdup Function ○ The memccpy Function • Q&A and Exercises
Day 5	
<ul style="list-style-type: none"> • C Project • Q&A, Debugging, and Code Review 	

Workflow

Typical C training day can be organized as follows:

Time	Activity
09:00 – 11:00	Live training
11:00 – 12:30	Exercises
12:30 – 13:30	Lunch break
13:30 – 15:30	Live training
15:30 – 17:00	Exercises

Live training includes the following:

- C Theoretical introduction
- C Source code examples
- PDF handouts

Exercises include the following:

- C source code tasks
- Complete C source code solutions
- Q&A sessions with a trainer

The workflow can be modified according to the client's needs.

Summary

This course aims to provide a high-quality, professional-grade introduction to the modern C programming language, establish a solid base, and enable further progress.

The course follows the latest trends in the C programming community and provides the necessary building blocks that make a C knowledge backbone. Each training day can be customized to meet the client's requirements.

About Us



We are Clear Programming Paradigm LLC, an IT consultancy company from Belgrade, Serbia. We provide high-quality, professional-grade C and C++ training and outsourcing services.

We help shorten the time needed to learn the C programming language, increase productivity and get your team up to date on the latest C standards. We understand it can be challenging to find C and C++ developers on the market. Through our training, we want to help you solve this problem. Contact us at info@cppersrc.com or visit us at www.cppersrc.com.

The Trainer

Slobodan Dmitrovic is a professional C and C++ trainer and consultant for major automotive and telecommunications companies worldwide. He is an experienced conference speaker and author of several programming books on C and C++. Slobodan's ability to clearly explain complex topics and provide insightful training made him a sought-after trainer for the automotive, telecommunications, fintech, and other industries.



Clear Programming Paradigm LLC

info@cppersrc.com

+381640763031

www.cppersrc.com



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