Basics of the Languages C and C++ («CPG»)

C and C++ play thanks to their portability, flexibility, efficiency and wide distribution an important role today and in the future. After this course, you will have mastered the common basis of the two languages.

Duration: 3 days
Price: 2'200.–
Course documents: Digicomp courseware

Content

C is often used for hardware-related programming of controllers and microprocessor systems, where C has largely replaced assembler. C/C++ are the central languages for system programming of modern operating systems. Therefore, many programming interfaces (API) and most libraries in UNIX systems are designed for the C/C++ programmer.

C++ with its object-oriented possibilities offers advantages in the realization of large software projects due to the better reusability of code. C and C++ have a common syntax. In this course these common basics will be discussed. The course is system-independent, i.e. only C/C++ syntax according to the ANSI standard is used. Each participant has a Microsoft ANSI C/C++ compiler available for the exercises.

1. Introduction
   - History of C/C++
   - Fields of Application of C/C++
   - Properties of C/C++
2. Expressions, Statements
   - Command (Statement)
   - Block (Compound Statement)
   - Integer Variable Definition
   - If Instruction
   - Boolean Expressions
   - Switch
3. Loops
   - While and For
   - Do-while
   - Break, Continue
4. C/C++ Software Development Environment
   - Compilers
   - Preprocessor
   - Include and Header Files
   - Linker
   - Standard Library
5. Elementary Data Types
   - Integer
   - Floating Point
   - Sizeof Operator
   - Constants
6. Operators
   - Arithmetic Operators
   - Comparative Operators
   - Increment, Decrement
   - Logical Operators
7. Data Type Conversion

- Cast Operator
- Automatic Type Conversion
- Automatic Conversion Rules
8. Arrays
    - Definition
    - Initialization
9. Strings
    - Definition
    - Initialization
    - String Functions
10. Pointer
    - Storage Addresses
    - Definition
    - The Operator & (Address of)
    - The Operator * (Contents of)
    - Pointer Arithmetic
11. Functions
    - Function Declaration (Prototypes)
    - Functional Definition
    - Function Call
12. Function Parameters
    - Call by value

Key Learnings

- Knowledge of the common elements of the syntax of C and C++
- Able to write and test simple C/C++ programs

Target audience

Programmers who want to learn C and C++

Additional information

The infrastructure you are using during the course, you are also able to use after the course at home. So you can go through the exercises at your own pace and prepare optimally for your exam.
If you book the lab environment within two weeks after the course, you can use the labs for CHF 40.00 per day at home. You can make individual appointments with us: Tel. 044 447 21 21.
The images you need during the course will be stored for two weeks before they are deleted. If you book the exercise environment later than two weeks after the course, you must book a minimum of 5 Lab days due to the effort involved.

Further courses

- Moderne C++-Programmierung («CPROGR»)

Any questions?

We are happy to advise you on +41 44 447 21 21 or info@digicomp.ch. You can find detailed information about dates on www.digicomp.ch/courses-software-engineering/programming-languages/c-c/course-basics-of-the-languages-c-and-c