Fortran Programming

Duration: 3 days **Price: € 1999**

Open Schedule

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Audience Course Fortran Programming

The course Fortran Programming is intended for anyone who wants to learn how to program in the Fortran programming language.

Prerequisites Course Fortran Programming

To participate in this course, basic knowledge of programming in another programming language is beneficial to the understanding but is not required.

Realization Training Fortran Programming

The theory is discussed on the basis of presentation slides. The theory is explained further through demos. After discussing a module, there is the possibility to practice. Course times are from 9.30am to 16.30pm.

Certification Course Fortran Programming

After successful completion of the course participants receive an official certificate Fortran Programming.

Content Course Fortran Programming

In the course Fortran Programming participants learn to develop applications in the latest version of the Fortran language. Fortran was originally created in 1957 to perform mainly scientific calculations. Over time however, Fortran has evolved into a higher programming language with support for modern concepts such as object-oriented programming.

Fortran Intro

The course starts with an overview of the development of Fortran and then covers data descriptions, control structures, data processing and Fortran Rules.

Variabelen and Data Types

Also variables, data types and operators in Fortran are treated. Special attention is paid to Fortran arithmetic with rounding, truncation and integer division.

Tabular Data and Arrays

Subsequently tabular data and arrays are also discussed. Attention is paid to allocatable arrays, multidimensional arrays, array constructors and operations that work on entire arrays.

File I/O

Fortran naturally also has facilities for accessing the file system. Formatted and Unformatted File I/O are therefore discussed in the course and Records, Data Edit Descriptors and End of Record indicators are treated as well.

Functions and Flow Control

Then it's time for functions and control flow in Fortran. Attention is paid to library functions, transformation functions, recursive functions, user defined and pure functions. And the various control flow constructions for selections and iterations are reviewed as well.

Characters

Special attention goes to dealing with characters in Fortran. Character Input, Character Operations, Character Sets and Edit Descriptors are discussed.

User Defined Types and Pointers

Finally special types in Fortran such as User Defined Types and pointers are on the program of the course and object oriented programming in Fortran with classes, objects and inheritance is treated.

Modules Course Fortran Programming

Module 1 : Fortran Intro	Module 2 : Language Syntax	Module 3 : Arrays
Fortran Language Fortran's Origins Version 77 to 2008 Fortran Compilers Structured Programming Data Description Control Structures Data Processing Fortran Rules Input and Output	Variables Names and Values Data Types Fortran Characters Operators Arithmetic Expression Equivalence Rounding and Truncation Integer Division Type Conversion	Tabular Data Dimension Attribute Setting Array Size Indexing Loop over Arrays Allocatable Arrays Multiple Dimensions Whole Array Manipulation Element Ordering Array Constructors
Module 4 : File I/O	**Module 5 : Functions**	**Module 6 : Control Flow**
Opening Files Close Statement Writing Files Formatted and Unformatted Data Edit Descriptors Skipping Lines Records Data Transfer Statements inquire Statement End of Record iostat and iomsg	Predefined Functions Generic Functions Elemental Function Transformation Functions Function Usage Intrinsic Procedures Custom Functions Local Variables Recursive Functions Pure Functions Rules and Restrictions	Selections and Iterations Block if Statement if then endif else Statement case Statement do loop do while cycle Statement exit Statement Sentinel Usage forAll Statement
Module 7 : Characters	**Module 8 : Special Types**	**Module 9 : Modules and Classes**
Character Input * Edit Descriptor a Edit Descriptor Character Operations Substrings Character Functions len and len_trim Collating Sequence Character Sets scan Function	Type Definition Variable Definition Nested Derived Types Pointers Pointer Concepts Referencing Pointers Pointer Allocation Pointer Assignment C loc Function Memory Leaks	Module Syntax Global Data private, public, protected use Statement Explicit Interfaces Classes and Objects Structure Constructors Generic Names Polymorphic Variables Inheritance

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