

Seminar Abstract

# Data Structures and C

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## COURSE OVERVIEW:

This 2–3-day course introduces the student to the most common kinds of data structures and shows how they can be implemented using C. The course is not hardware or operating system-specific.

## GOALS:

Provided students meet the prerequisites, at the end of the course, they should understand the concepts of each data structure type, and know the syntax needed to implement it.

## WHO SHOULD ATTEND:

Programmers and technical managers wishing to exploit C’s extensible data typing capability. Also, people who have never had formal data structures training or, had the training quite some time ago or, have used data structures only from languages not having pointers.

## PREREQUISITES:

Successful completion of the 5-day “Introduction to C” course, or its equivalent, is assumed. Students are expected to be relatively fluent in the basic syntax and semantics of C, particularly with regard to data pointers, structures, and operators.

This course is definitely not for casual C programmers or those totally new to the language.

## MATERIALS:

Each student will receive the following materials:

- *Mastering Data Structures from C* This manuscript was written specifically for teaching. It serves as a useful reference once the course has been completed.
- *Standard C Quick Reference Guide*. This 16-page guide was designed as a result of requests of students in earlier classes. It contains information such as keywords, operator precedence table, statement syntax, and a summary of the complete standard runtime library.

## DETAILED TOPICS:

The main topics covered are:

- Multidimensional Arrays vs. Arrays of Pointers
- Linked lists
- Stacks
- Queues
- Trees