

DSP programming class: a 1-day class

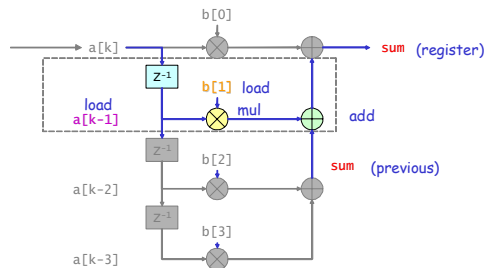
DSP Foundation



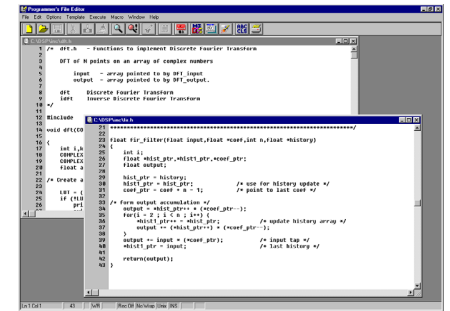
Benefits

- Relate C to DSP operations
- Program DSP efficiently
- Write DSP functions

Learn to write C programs that relate well to DSP operations, and that will run efficiently when compiled for DSP hardware.



See DSP...



..as C DSP

Contents

In this class we relate C programming to the DSP operations that we are implementing, with special reference to efficiency and appropriateness.

DSP data types and math

Learn the data types and 'data packets' that are suitable for DSP, and the special math associated with complex numbers.

- Data types
- Data structures
- Pointers
- Arrays
- Data packets
- Complex numbers

Operators for DSP

Learn the C operators most used in DSP, their order of evaluation, and how they relate to typical DSP hardware.

- Arithmetic
- Multiply/accumulate
- Logic
- Pointer arithmetic

DSP hardware

Know about DSP hardware and compilers, and understand what techniques make sense for each.

- Traditional DSP
- VLIW
- Compilers

Programming example

Follow a typical DSP program, step-by-step, from an initial simple version through various stages of optimization, and understand the compromises and advantages of each stage.

- FIR program
- Real-time issues
- Use of registers
- Use of pointers
- Using DSP hardware parallelism
- Going too far
- Data packets and structures
- Data buffering
- Pipelines and filters
- Component-based models

Example programs

We present and explain some example programs that implement common DSP functions.

- Signal generation
- Correlation and convolution
- FIR filtering
- IIR filtering
- Fourier Transforms
- Generating window functions
- Applying window functions
- FIR filter design
- Floating point and integer

Time and arrangements

This class takes 1 day.

It is presented 'on-site' by arrangement - the material can be adapted if you have specific needs (at extra cost).

Sometimes we arrange 'public' classes: schedules are posted on the Internet:

<http://www.bores.com/schedule.htm>

DSP Foundation

'DSP programming' is self-contained but we recommend it be taken as part of our 4-day 'DSP Foundation' class that covers DSP, FIR and IIR filters, and C programming.

Contact us for details and advice:

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Booking and questions

Call us by 'phone or send email to book or to ask questions.

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About us

BORES Signal Processing train managers, engineers and programmers to understand and use DSP and streaming media processing.

- established 17 years
- excellent reputation
- worldwide activities
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