

Teaching Fortran across cultures & continents



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- A range of our international Fortran training over the last 3 years:
 - Copenhagen, January 2008
 - Ottawa, Canada, March 2008
 - Centre for Ecology & Hydrology, Wallingford, UK, March 2009
 - University of Ulster, December 2009
 - SHMU, Bratislava, Slovakia, February 2011
 - Shoreham-by-Sea, UK, October 2011

Teaching Fortran across cultures & continents

We try to teach with [NAG's Fortran Builder](#)

- IDE (Integrated Development Environment)
 - easy editing, compiling, linking & running
- version 5.3 Fortran compiler
 - good error messages

Copenhagen, Denmark, 2008



Danish Technical University (DTU)
Introduction to Fortran 95

- our experiences:
 - cold!
 - using Copenhagen's rail system
 - eating & drinking
 - very expensive!!!

- what was required:
 - introduction to Fortran 95 as a precursor to an MPI course
- who:
 - Mathematical modelling Ph D students
- class of 30
 - wide range of programming experience

- Fortran compiler(s)
 - NAG
 - Sun
 - gfortran
- operating system
 - Sun solaris

Ottawa March 2008



National Resources Canada (NRCAN)

Ottawa March 2008



Ottawa March 2008



Spider by Louise Bourgeois outside National
Gallery of Canada, Ottawa

- our experiences:
 - scary taxi drive from airport to Ottawa
 - snow!!!
 - using public transport & the snow!
 - very difficult to get around – so much snow
 - very cold!!!
 - French

- what was required:
 - introduction to Fortran 95 & conversion from Fortran 77
- who (15):
 - economists in National Resources department of Canadian Government
 - oil shale & gas modelling
 - US were lead site but no experience of oil shale
 - US had started to introduce Fortran 95 features

- Fortran compiler(s)
 - visual studio 6 & Intel compiler
 - Fortran 95 standard
- operating system
 - Windows XP

Centre for Ecology & Hydrology

Wallingford UK March 2009



Centre for Ecology & Hydrology (CEH)

Introduction to Fortran 95



- our experiences:
 - very bright group of young scientists
 - extensive and advanced use of Fortran amongst experienced colleagues
 - Wallingford – lovely old market town!

- what was required:
 - introduction to Fortran 95
- who (4):
 - scientists working with Fortran 77/ 95 code and statistical package R



- Fortran compiler(s)
 - NAG Fortran builder & NAG compiler from command prompt
- operating system
 - Windows XP

Belfast December 2010



University of Ulster

- our experiences:
 - lack of public transport
 - very welcoming & friendly group
 - tutor had a very bad cold
 - visit to local health centre
 - delayed flight home
 - snow!!!

- what was required:
 - introduction to Fortran 95
 - for use with mechanical engineering package
- who (6):
 - mechanical engineering Ph D students
 - no programming experience
 - staff
 - range of programming experience

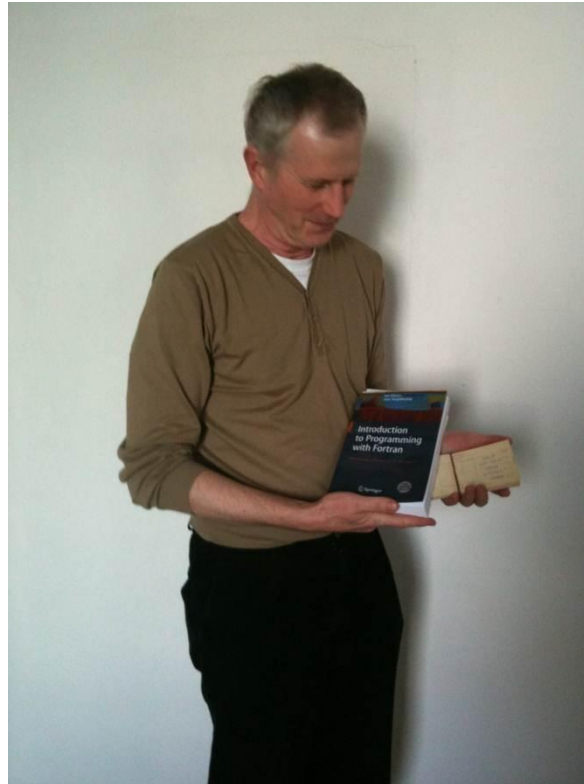


- Fortran compiler(s)
 - NAG Fortran Builder
- operating system
 - Windows XP

Bratislava Slovakia 2011



SHMU, Bratislava, Slovakia, February 2011



senior meteorologist with punched cards!!

SHMU Bratislava



Snow not predicted!!



Bryndzové Pierogies
(Sheep cheese Pierogies)

- our experiences:
 - very hospitable
 - cold!!
 - english only spoken in hotel
 - public transport
 - trams & buses
 - Slovakian food & wine
 - Czech beer!

- what was required:
 - introduction to modern Fortran with IBM's XL Fortran compiler for AIX, V13.1
 - compiler options for optimisation
 - introduction to MPI
- who (11):
 - meteorologists
 - range of programming experience

- Fortran compiler(s)
 - XL Fortran compiler for AIX, V13.1
 - supports a lot of Fortran 2003 standard
- operating system
 - AIX - unix

Shoreham-by-Sea UK 2011



Shoreham-by-Sea harbour

Shoreham-by-Sea beach



Which Fortran compiler?

- our experience:
 - lack of compiler support for Fortran 2003/2008 standards
 - NAG Fortran compiler for OO
 - Intel compiler for OpenMP & coarrays
 - Intel MPI library needed

Shoreham-by-Sea October 2011

- what is required:
 - advanced features of modern Fortran
www.fortranplus.co.uk/adv_fortran.html
 - introduction to object oriented programming in Fortran
 - introduction to parallel programming
 - MPI, OpenMP, Coarray Fortran
- who (6):
 - mechanical engineers

Shoreham-by-Sea October 2011

- Fortran compiler(s)
 - Intel parallel studio XE 2011 v 12 compiler
 - gfortran v 4.7
 - NAG Fortran compiler v 5.3
- operating system
 - Windows & Linux

Compiler Support for the Fortran 2003 and 2008 standards

On the Fortranplus website:

www.fortranplus.co.uk/fortran_info.html