CHS Makefile Project

The aim

The goal is to provide a Makefile for Fortran, C and mixed projects for the CHS department.

To use the Makefile ¶

You have to checkout the Makefile and the directory make.config.
Open the file Makefile and make the proper settings for your source code (select compiler, IMSL, MKL, LAPACK, etc.).
Read the header of the makefile for targets, etc.
'make info' gives detailed information.

To add a new compiler on a given system

Say you want to add the PGI compiler suite version 8.5 on the system eve.
Choose the compiler abbreviation pgi8.5, i.e. system=eve, compiler=pgi8.5

1. Copy a config file in make.config to the name eve.pgi85
   Take a file that ends with an abbreviation which could be your compiler, e.g. if there were the file mcair.pgi8.3.
   If there is none, take eve.intel12.
2. Adapt the pathes and compiler switches in the config file.
3. If wanted, you can give aliases for that compiler, e.g. simply pgi instead of also the version number.
   Edit the file eve.alias. Follow the examples of sun or nag.
4. For completeness: in Makefile add pgi85 at the end of the list above compiler := ...

To port the Makefile to a new system

You want to port the Makefile onto a new system. Say you have a system called 'Liclus' on which is a gnu compiler version 4.6, i.e. system=liclus, compiler=gnu46

1. Copy a config file in make.config to the name liclus.gnu46
   Take a file that ends with gnu46 or close to it, e.g. the file mcair.gnu46 if Liclus is a Mac OSX or eve.gnu45 if Liclus is a Linux machine.
   If there is none close to your compiler, take eve.intel12.
2. Adapt the pathes and compiler switches in the config file.
3. You can give aliases for that compiler, e.g. simply gnu instead of also the version number.
   Therefore we need the file liclus.alias. Create it in make.config, even empty if you do not want to give any aliases. You can copy eve.alias for examples.
4. In Makefile search for gnu and if there are some if-clauses with gnu45, for example, add gnu46 there as well.
5. For completeness: in Makefile add liclus at the end of the list above system := ... ; add gnu46 (if not there yet) at the end of the list above compiler :=

Makefile Header

```
# PURPOSE
#    CHS Makefile for Fortran, C and mixed projects
#
# CALLING SEQUENCE
#    make [options] [VARIABLE=VARIABLE ...] [targets]
#
#    Variables can be set on the command line [VAR=VAR] or in the SWITCHES section below.
#
#    If PROGNAME is given then an executable will be compiled.
#    If LIBNAME  is given then a library will be created instead.
#
# TARGETS
#    all (default), check (=test), clean, cleanclean, cleancheck (=cleantest), html, info
#
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# OPTIONS
#      All make options such as -f makefile. See 'man make'.
#
# VARIABLES
#      All variables defined in this makefile.
#      This makefile has lots of conditional statements depending on variables.
#      If the variable functions as a switch then the condition checks for variable = true,
#      otherwise the variable can have different values.
#      See individual variables in SWITCHES section below or try 'make info'.
#
#      Variables can be empty for disabling a certain behaviour,
#      e.g. if you do not want to use IMSL, set:  imsl=no  or  imsl=
#
#      For main variables see 'make info'.
#
# DEPENDENCIES
#      This make file uses the following files:
#          $(MAKEDPATH)/make.d.pl, $(CONFIGPATH)/$(system).$(compiler), $(CONFIGPATH)/$(system).a
#          $(CONFIGPATH)/f2html, $(CONFIGPATH)/f2html.fgenrc
#      The default $(MAKEDPATH) and $(CONFIGPATH) is make.config
#
# RESTRICTIONS
#      Not all packages work with or are compiled for all compilers.
#      The static switch is maintained like a red-headed stepchild. Libraries might be not ordered correctly
#      if static linking and --begin/end-group is not supported.
#
# EXAMPLE
#      make release=debug compiler=intel11 imsl=vendor mkl=mkl95 PROGNAME=prog
#
# NOTES
#      Further information is given in the README, for example
#      on the repository of the makefile, further reading, how to add a new compiler on a system, or
#      how to add a new system.
#
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