Documentation

Compilation flags

The source code compilation in Windows is performed by Intel Fortran Compiler x64 v17. The following compilation flags are used in Windows (W) and Linux (L).

- /nologo (W)/ -nologo (L): DEFAULT: enabled. It removes extraneous compiler version output from the command line.
- /warn:all (W)/ -warn all (L): DEFAULT: disabled. Specifies diagnostic messages to be issued by the compiler. It is enabled during development and testing it shows all compiler errors, critical and non-critical.
- /check:all (W)/ -check all (L): DEFAULT: disabled. It is enabled during development and testing allows the compiler to check all loops containing arrays for boundaries that could go out of bounds, at run time.
- /traceback (W)/ -traceback (L): DEFAULT: enabled. Tells the compiler to generate extra information in the object file to provide source file traceback information when a severe error occurs at run time.
- /Qipo (W)/ -ipo (L): DEFAULT: enabled. Enables interprocedural optimization between files. The compiler performs inline function expansion for calls to functions defined in separate files.
- /fast (W)/ -fast (L): DEFAULT: enabled. Forces the compiler to use higher levels of optimisations.

List of files:

- **ascii.dat**: contains a call to RomanNum I <ASCII>, where ASCII represents 256 ASCII characters. Is used by runascii.bat to test a mix of valid and invalid input and the resulting output.
- **ascii.f90**: contains the source code to create ascii.dat.
- **modules.f90**: contains the module structure PARAMETERS used in the main program, where constants are located. The compilation first creates an object file (modules.obj), and then uses it to compile RomanNum.exe.
- **qrun.bat**: calls RomanNum I <Roman Numeral>, where Roman Numeral is every numeral from I (1) to MMMCMXCIX (3999).
- **RomanNum.f90**: Main program source code.
- **rons.txt**: contains all calls used in qrun.bat.
- **run.bat**: compiles modules.f90 and RomanNum.f90 into RomanNum.exe.
- **runascii.bat:** calls ascii.dat.

List of functions and subroutines