

CSC 3350 Systems Programming
Lab 3 -- Directory Listing Utility (Microsoft O/S)
Due: Wednesday, April 27, 2016 in class

Write an C Console program **MYDIR** for the Microsoft Windows O/S that produces a directory listing (one filename per line) of all files matching a specified filename pattern.

MYDIR obtains a general filename pattern specification from the commandline, of the form

mydir d:\dir1\dir2\fn.ext

where

- 1) the drive specification d: is optional (use the default disk if not specified)
- 2) the collection of \dir subdirectory path specifications are optional
- 3) fn.ext is optional (find all files if nothing is specified)
- 4) if specified, either 'fn' or 'ext' (or both) may contain wildcard characters '*' or '?'.

Your program must examine the pattern specification (if any), and modify the pattern to handle the following special cases:

- a) No commandline file-specification argument specified [use "*" . *"]
- b) Just a drive: specified (e.g., E:) [use "E: * . *"]
- c) Just a subdirectory specified (e.g., \sub1\sub2 or \sub1\sub2\) [use "\sub1\sub2* . *"]

MYDIR also recognizes two commandline "switches" that may be specified before the file pattern:

- ? Produce a brief "usage" Help message, and terminate.
- /? Produce a brief "usage" Help message, and terminate.
- help Produce a brief "usage" Help message, and terminate (help can be upper/lower case).
- L or -l Produce a "long" file directory listing, including the Archive, System, Hidden, and ReadOnly file attributes for each file (in a symbolic, readable format such as "ASHR"), filesize, file modification date and time, and the filename.
If the -L switch is NOT specified, then only the filename is listed on each line.

Examples:

MYDIR --Help	-- Produce brief usage message and terminate.
MYDIR -?	-- Produce brief usage message and terminate.
MYDIR lab1.c	-- Lists file 'lab1.c' (if it exists)
MYDIR *.c	-- All .C files in current directory on current drive
MYDIR -L *.c	-- Long-listing of all *.C files in current directory on current drive
MYDIR	-- All files in current directory on current drive
MYDIR -l	-- Long-listing of all files in current directory on current drive
MYDIR E:	-- All files in current directory on drive E:
MYDIR e:\	-- All files in root directory on drive E:
MYDIR csc3350\	-- All files in the csc3350 subdirectory on current drive
MYDIR csc3350	-- If csc3350 is a subdirectory, lists all files in the subdirectory. Otherwise lists any files that match the filename 'csc3350'

> mydir -L sample*.*

2015-01-22 23:08	2181 [A HR]	sampleASHR.txt
2015-01-22 23:20	1801 [A H]	samplehidden.txt
2015-01-22 23:22	605997 [A R]	sampleOnly.txt

Turn in

- 1) Program listing, documented.
- 2) Sample outputs for various specification lines (7-8 samples) that demonstrate correct operation of your program. Be sure to show examples of all of the special cases.
- 3) Include a standard DIR listing of the associated sample paths to allow verification of the proper operation of your program.