**Rdir command design**

Objective: A Windows command-line utility in Rust showing detailed information from a file or a folder passed as parameter.

While parameter should accept globbing syntax, autorecurse is off unless there is an option such as -s

Example: if C:\Path is a folder, rdir c:\Path should display folder information, rdir C:\Path\File.ext should display information on this specific file, rdir c:\path\\*.txt should display information on each file

Command line options:  
-s to process subdirectories recursively (not by default)  
-l In the case of links, infos such as size, date, … are coming from target instead of file itself

-v verbose output, show a full-page information for each file. By default, a classic compact tabular presentation.

Command line options should allow to select which information we want to see and level of detail, not specified at this point.

Only include "user level" information about files/directories; low-level internal NTFS attributes are out of scope. Features such as NTFS journaling, file-system transactions, volume shadow copy, quotas… are out of scope.

File content is out of scope and should not be accessed so that stub files are not retrieved by running this command.

For easy maintenance, information gathering should be segregated in separate functions and/or separate source files for easy maintenance, and potential sharing.

Information Blocks:

Names: Name and full path. Unicode invisible or special chars should be detailed as {NAME}, to be specified more in detail.  
Maybe information on volume and filesystem type.

Type: Similar information that is displayed in Windows File Explorer properties dialog. For .docx files it should mention "Microsoft Word Document (.docx)", Opens with "Word".

Size:  
- For files, bytes count and size on disk (actual size allocated based on blocks/clusters), in B or KB, MB, GB with 3 decimal places, using thousands separator for values >=1000  
- For directories, numbers of files and subfolders  
Numbers should be formatted according to current user locale

Dates: Creation, last modification, last access… Note that last access date should be included only if this command does not update it. Date should be formatted according to current user locale

Standard Windows attributes: Archive, Read only, Hidden, System

Extended NTFS attributes: Stub (FILE\_ATTRIBUTE\_RECALL\_ON\_DATA\_ACCESS), encrypted, sparse file, … and possibly extra information for some attributes (for instance, for compressed files, the uncompressed file size and the actual file size).

Reparse points:  
- Type of reparse point  
- For links: symlinks (file and directory), junctions, volume mount points: show target and its type (dir, file, link, inexistent). All other info such as attributes or dates should be of the link itself, not the target, unless explicitly required

Hard links: Show info when hard link count>1

Alternate Data Streams: list, size. For standard ADS such as Zone.Identifier, maybe show content

File owner: SYSTEM\name or UUID if it can't be resolved to a valid name

File security attributes (ACL): similar information shown by ICACLS command

Previous versions from File History or restore points, similar to what is shown by Windows File Explorer properties

Misc: Offline status and other interesting properties of a file