

## General

- ~ as home directory is not supported.
- File/Folder name " " does not exist in Windows.
- File/Folder name "" does not exist.
- File/Folder name do not start with -.
- File/Folder name cannot contain "/" or "\".
- Sequence has priority over pipe.
- If System.in is passed as InputStream for application, the system will wait for user input until EOF is encountered.
- In a series of commands, if any of the application or command throws an exception, the whole series of commands will not be executed unless stated in the specific assumption below.
- File size cannot exceed 200MB.
- Tabs are replaced with 4 spaces.

## Application

### Cat

- If multiple files are specified with an invalid file, will continue printing only valid files and show error messages for invalid files.
- If both inputstream and files are given, files are evaluated unless '-' is given. In the latter case, only the first '-' will be evaluated.

### Cd

- cd with an empty argument would change the directory to the user directory.
- - as user directory is not supported.
- . is assumed as the current directory.
- .. is assumed to be the parent directory.
- cd will throw exception if there is more than one argument.

### Cmp

- prioritise -s flag.
- New line character is detected and treated as 2 characters in windows, and printed as LF for line feed and CR for carriage return if -c flag is given.
- Octal Value of EOF will be printed as returned by the system, and the character printed as "EOF" if -c flag is given.
- Input stream is always the second file. This is only used when displaying file differences and will print '-' after the first file.
- Exception is thrown if non-text file is given. Non-text file is a file containing characters with ascii code > 127 or 0.

### Diff

- Exception is thrown if non-text file is given. Non-text file is a file containing characters with ascii code > 127 or 0.

- Input stream is always the second file. This is only used when displaying file differences and will print '-' after the first file.

#### Echo

- echo \* will echo all files and folders that matched.

#### Grep

- "-" is assumed as a file and not stdin. Stdin is only used if there is no FILE specified.

#### Ls

- Displayed name with spaces has single quote around them.
- Displayed folder name does not end with /.
- In a series of file/folder specified, if any of the file/folder is invalid, ls will throw exception without processing those valid files/folders.
- Displayed name is reflective to the absolute or relative path specified by the user.
- If only one folder is specified to be list, folder name will not be displayed.
- If more than one folder is specified, folder name will be displayed followed by its content.
- -R will display folder name before its content regardless how many folders are specified.
- If invalid option/flag is set, ls will throw exception without processing.
- -d will list the files and folders specified without the content in the folders.
- If a hidden file is specified and it exist, no error will be thrown but the hidden file will not be displayed.
- File contents in a folder is printed in one line separated by a tab.

#### Mkdir

- If there is an invalid argument specified, any valid argument before the invalid will be processed while the valid arguments after the invalid will not be processed.

#### Sed

- The first argument other than options/flags is assumed to be the replacement rule string.
- Multiple files can be set to be processed.
- Separating symbol can be any characters as long as it is not used inside the regexp and the replacement string.
- Replacement rule is assumed to always have 3 separating characters.
- X cannot be 0.
- Regular expression in replacement rule cannot be empty.
- "-" is assumed as a file and not stdin. Stdin is only used if there is no FILE specified.

#### Split

- giving directory path for a prefix will set the location for the output files and prefix set to the string after the last file separator. If there is no string after the last file separator, prefix will be set to empty string.
- The first non-flag string will be treated as the file.

- The second non-flag string will be treated as the prefix.
- New line character in windows treated as 2 bytes.

## Commands

### Call

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### Pipe Operator

- If there is an exception within the pipe operation, the whole operation will not be processed.
- Processed command before each pipe will affect the processing of commands of the after the pipe, Ex `ls `cd test_system` | ls`` would list the content in test\_system rather than the current directory before the cd.
- “ls | cat” will not print each file in the current directory in a new line. It will be printed the same way as the output of ls.

### Sequence

- If there is an invalid command specified, any valid commands before the invalid will still be processed and the invalid command will print the exception message while the commands after the invalid will not be processed.
- New line will be printed after every sub command even if the command do not have any output.

## Operators

### Command Substitution

- If there is an exception within the command substitution, the command that contain this command substitution will not be processed.
- If back quotes are not closed properly, exception will be thrown.
- Processed command in the substitution will affect the processing of commands outside of the command substitution, Ex `ls `cd test_system`` would list the content in test\_system rather than the current directory before the cd.
- Command Substitution is processed on a new Shell and does not take in Inputstream from the source Shell.

### Globbering

- Globbering will be processed on the arguments after command substitution.

### IO Redirection

- File specified for IO redirection will not have globbering evaluated.

### Quote

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