Assumptions

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1. Applications assumptions

There are some assumptions we made in our implementation, we demonstrate them here with a few examples. Some applications are not included here since they have clear functional descriptions.

THE BASIC FUNCTIONALITIES:

1.1. RM

Assumptions:

- Assume the flags do not have scope, which means rm folder1 -r folder2 is the same as rm -r folder1 folder2. This is different with linux.

1.2. ECHO

Assumptions:

- It will print corresponding messages with a new line character in the end.
- In case of command substitution, it will replace newline to whitespace. For example, echo "`echo hello`world" will output hello world. The additional whitespace is changed from the new line.

Command format

echo [message]

Example

echo "hello world" ⇒ hello world

1.3. PASTE

Assumptions

- no new line adds to the end of the result, no \t add to the end of a line.
- Exception is thrown immediately after one invalid file name is found.
- The paste command can also be used to merge N consecutive lines from a file into a single line. Here N can be specified by specifying number hyphens(-) after paste.

Command format

paste [FILE] ...

FILE – the name of the file or files. If not specified, use stdin.

Examples:

```
# Merge stdin and two files A.txt and B.txt
$ paste A.txt - B.txt
```

A.txt	stdin	B.txt	output
1	A	1	A 1 1
2	B	3	B 2 3
3	C	5	C 3 5
4	D	7	D 4 7

1.4. SED

Assumptions

- empty regular expression is considered as invalid, exception would be thrown.

1.5. EXIT

Assumptions

- The EXIT application would call `System.exit(0)` immediately instead of break loop in `main()`.

THE EXTENDED FUNCTIONALITIES 1

1.6. DIFF

Assumptions

- While comparing two text files, we always find the longest common sublist of lines of two files. So, In this example, there are two common sublist candidates: line1 line3 line5 and line1 line4. As we always keep the longest common sublist, line1 line3 line5 is chosen.
  For example: diff A.txt B.txt

A.txt	B.txt	Output
line1	line 1	<line2
line2	line 3	<line4
line4	line 5	>line4
line3	line 4	>line6
line5	line 6	

- While comparing two directories, no matter which format of path is used, we always only use the pure folder name.
  For example:

  `$ diff A B`, `$ diff ./A ./B` or `$ diff /Users/user/path/A /Users/user/path/B` should get exactly the same results:

```
Common subdirectories: A/old and B/old
Only in A: out_image2.bmp
diff A/createAcct.sh B/createAcct.sh
< for u in $ul
> for u in $ul1
```

- If the `diff folder file.txt` is executed, a DiffException with message “Can not compare file with folder” will be thrown.
- While `diff` between stdin with file, no matter what arg order is given, the

1.7. GREP

1.8. WC

Assumptions

- We do not care about the order of the flags.
- The WcApplication would always output an indent `\t` in front of every line, and output a `STRING_NEWLINE` at the end of every line.

1.9. CD
1.10. CP

THE EXTENDED FUNCTIONALITIES 2

1.11. CUT

Assumptions

- the application can take a list of two numbers separated by comma, a range of numbers or a single number.
- If the number is out of range of the line's length, an exception will be thrown.
- two numbers separated by comma may have the first number greater than the second number, the cut result would be in the same order of the two number
- If the input range has the start number greater than the end number, an exception will be thrown.

Command format

Example

```
# Throw Out Of Range exception
$ echo "baz" | cut -b 8
# Display 'sT'. Suppose the file contains one line: "Today is Tuesday."
$ cut -c 8,1 test.txt
# Throw Invalid Range exception
$ cut -c 8-1 test.txt
```

1.12. LS

Assumptions :

- While multiple arguments are given to Ls application, the output for every arguments will be separated by STRING_NEWLINE.
  For example:
  ls file1 file 2
  Output:
  file1

  file2

1.13. SORT
1.14. FIND
1.15. MV

Assumptions :

- When target is a exist file/folder:
  - mv file1 file2,
    - without -n flag: exception
    - given -n flag: replace
  - mv file1 folder1
    - move file1 into folder1
  - mv folder1 folder2,

- without -n flag: move folder1 into folder2
- given -n flag: replace folder2 with folder1

Command format:

mv [-n] SOURCE TARGET

mv [-n] [SOURCE] ... DIRECTORY

Example

mv file1.txt folder1