

Chapter 8 - Advanced Tools

Philipp Moritzer - 21170004

Regular Expression

- Pattern that represents texts or strings
- Representing a varying array of characters
- Often include Metacharacters

Metacharacters: Characters that represent another set or group of characters or commands

- `.` : a character
- `[]` : any one inside of it
- `*` : zero or more characters
- `[^.*]`: Do NOT match any inside of it
- `^.*` : Match at the beginning
- `^.*[.]*`: Match at the beginning and match inside in it
- `$` : Match at the end of line
- `\` : Escape special character
- `?` : Zero or one Character
- `[a-z]`: Match all occurrences of any single letter

FTP (file transfer protocol)

```
$ ftp 21170004@comunix.seoultech.ac.kr # connect to Comunix server using FTP
$ sftp -p 21170004@comunix.seoultech.ac.kr #connect to Comunix server using FTP
while specifying the port with -P
$ !dir # shows content of your current local directory
$ pwd # displays current working directory remotely
$ lcd .. # change local directory
$ put <filename> # upload file to server using current local directory as source
and current remote directory as destination
$ get <filename> # download file using the directories
$ quit # exit (s)ftp session
```

grep

Prints lines that has the string:

```
$ grep unix30 /etc/passwd # prints lines that contain unix30 in /etc/passwd file
$ cat /etc/passwd | grep unix30 # same as above but with using the pipe operator
$ grep -v # opposite (not matching the expression)
$ grep -i # ignores the case
```

find

Finds files in the directory structure

```
$ find / -name core # finds files with the name core
$ find /export -user unix300 # finds files specifying the user name
$ find /export -size +2000k # finds files specifying the file size
$ find / -perm -4000 # finds files specifying the permission
$ find / -name core 2> /dev/null # omits the error messages
```

sort

```
$ sort -t: +1 /etc/group #sorts the /etc/group file using the second column
divided by the ':'
$ head /etc/passwd | sort -r > pass.txt # sorts the /etc/passwd file and sorts it
in reverse order and puts the output in the pass.txt file
$ -f # ignore case
$ -r # reversed order
$ -t # set delimiter
$ -o # set output file
```

Tee/script

Tee: Split output (Screen and file)

```
$ ps -ef | tee ps.txt #prints current process status to the console and saves it
to ps.txt
$ telnet 10.10.54.75 | tee telnet.txt # saves the whole telnet session to file
telnet.txt
```

Script: Record interactive login session

```
$ script -a filename # saves session to filename
$ exit # end script
```

Unix utilites

```
$ wc # word count (lines/words/characters)
$ cut # extract character or words
$ cut -c1-5 /etc/passwd # extract characters 1-5 from /etc/passwd file
$ cut -d: -f 1,3 /etc/passwd # cuts by delimiter
$ paste file1 file2 # merges file1 and file2
$ tr abcd ABCD < filename # translate characters abcd to ABCD by using input
```

```
filename
$ split -5 /etc/passwd # splites /etc/passwd into separate files of 5 lines
$ uniq filename # file comparison - reports or filters out repeated lines in a
file
$ cmp filename # file comparison - no output if the files are the same, if they
differ the comparison will be displayed by byte and line numbers where the first
difference occurred
$ comm file1 file2 # file comparison - output in 3 columns: lines only in file 1,
lines only in file 2, lines in both files
$ diff file1 file2 # file comparison - No output if the files are same. The output
will be a minimal list of differences between the files
```