

2023년 1학기 시스템프로그래밍 & 시스템 프로그래밍 실습

Assignment 1-2

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Assignment 1-2

Advanced ls

Assignment 1-1 (“학번_simple_ls”)

+ option implementation (-a, -l, -la)

+ print directory path (e.g. **Directory path: /home/sslabs/splab/**)

+ print the number of 1K blocks (e.g. **total 160**)

Requirements

Assignment 1-1 과 동일한 조건으로 정렬되어 있어야 함

단, 숨김 파일은 처음 dot('.')을 제외한 문자열이 동일한 조건으로 정렬되어 있어야 함

옵션이 입력된 순서에 무관하게 정상 동작해야 함

파일 혹은 디렉토리 입력 개수에 제한 없음

(ls)

각 요소(파일 유형, 허가권, 링크 수 등) 간에는 탭을 삽입

기타 요구 사항은 이후의 실행 예제를 참고

파일 유형 허가권 링크 수 파일 소유자 파일 소유그룹 파일 사이즈 수정된 날짜 및 시간 파일명

```
azx1593@ubuntu:~$ ./splls_advanced -l
Directory path: /home/azx1593
total : 152
-rw-r--r-- 1 root root 7312 Mar 12 04:26 cscope.out
drwxr-xr-x 3 azx1593 azx1593 4096 Mar 25 02:32 Desktop
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Documents
```

Assignment 1-2

■ 실행 예제

- 존재하지 않는 파일이나 디렉토리가 입력으로 들어온 경우

- \$./spls_advanced -la
 - 아래와 같이 에러 메시지 출력

```
azx1593@ubuntu:~/Desktop/sss/ffff$ ./spls_advanced -la
Directory path: /home/azx1593/Desktop/sss/ffff
total : 36
drwxrwxr-x  2  azx1593 azx1593 4096   Mar 28 20:23  .
drwxrwxr-x  5  azx1593 azx1593 4096   Mar 28 20:23  ..
-rwxrwxr-x  1  azx1593 azx1593 24600  Mar 27 01:22  spls_advanced
azx1593@ubuntu:~/Desktop/sss/ffff$ ./spls_advanced -la dkfsjl
cannot access dkfsjl: No such file or directory
```

- 단, 존재하지 않는 파일이나 디렉토리와 올바른 파일 혹은 디렉토리 명이 입력으로 같이 들어온 경우,
 - 존재하지 않는 파일 및 디렉토리에 관한 에러 메시지를 상단에 일괄 출력
 - 올바른 파일 및 디렉토리에 대한 결과를 하단에 순서대로 출력

Assignment 1-2

- 실행 예제 (cont'd)

- \$./spls_advanced -l

total

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```
azx1593@ubuntu:~$ ./spls_advanced -l
Directory path: /home/azx1593
total : 152
-rw-r--r--  1  root    root    73612  Mar 12 04:26  cscope.out
drwxr-xr-x  3  azx1593 azx1593 4096   Mar 25 02:32  Desktop
drwxr-xr-x  2  azx1593 azx1593 4096   Mar 11 01:22  Documents
drwxr-xr-x  2  azx1593 azx1593 4096   Mar 11 01:22  Downloads
-rw-r--r--  1  azx1593 azx1593 8980   Mar 11 00:42  examples.desktop
```

- \$./spls_advanced -a

```
azx1593@ubuntu:~$ ./spls_advanced -a
.
..
.bashrc
.bash_history
.bash_logout
.cache
.config
cscope.out
Desktop
.dmrp
Documents
Downloads
examples.desktop
.gconf
.gnupg
.ICEauthority
.local
```

Assignment 1-2

- 실행 예제 (cont'd)
 - \$./splsh_advanced -la

```
azx1593@ubuntu:~$ ./splsh_advanced -la
Directory path: /home/azx1593
total : 276
drwxr-xr-x 18 azx1593 azx1593 4096 Mar 27 01:26 .
drwxr-xr-x 4 root root 4096 Mar 11 22:05 ..
-rw-r--r-- 1 azx1593 azx1593 3771 Mar 11 00:42 .bashrc
-rw----- 1 azx1593 azx1593 50743 Mar 27 01:28 .bash_history
-rw-r--r-- 1 azx1593 azx1593 220 Mar 11 00:42 .bash_logout
drwx----- 13 azx1593 azx1593 4096 Mar 25 02:06 .cache
drwx----- 15 azx1593 azx1593 4096 Mar 25 02:14 .config
-rw-r--r-- 1 root root 73612 Mar 12 04:26 cscope.out
drwxr-xr-x 3 azx1593 azx1593 4096 Mar 25 02:32 Desktop
-rw-r--r-- 1 azx1593 azx1593 25 Mar 11 01:22 .dmrc
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Documents
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Downloads
-rw-r--r-- 1 azx1593 azx1593 8980 Mar 11 00:42 examples.desktop
drwx----- 2 azx1593 azx1593 4096 Mar 11 22:07 .gconf
drwx----- 3 azx1593 azx1593 4096 Mar 26 23:54 .gnupg
-rw----- 1 azx1593 azx1593 1908 Mar 26 23:54 .ICEauthority
drwx----- 3 azx1593 azx1593 4096 Mar 11 01:22 .local
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Music
drwxrwxr-x 2 azx1593 azx1593 4096 Mar 11 18:51 .nano
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Pictures
-rw-r--r-- 1 azx1593 azx1593 655 Mar 11 00:42 .profile
drwxrwxr-x 4 azx1593 azx1593 4096 Mar 27 00:33 projects
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Public
-rwxrwxr-x 1 azx1593 azx1593 24600 Mar 27 01:22 splsh_advanced
drwxrwxr-x 4 azx1593 azx1593 4096 Mar 13 00:16 sslab
-rw-r--r-- 1 azx1593 azx1593 0 Mar 11 01:24 .sudo_as_admin_successful
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Templates
drwxr-xr-x 2 azx1593 azx1593 4096 Mar 11 01:22 Videos
-rw----- 1 azx1593 azx1593 5507 Mar 14 02:33 .viminfo
-rw----- 1 azx1593 azx1593 51 Mar 26 23:54 .Xauthority
-rw----- 1 azx1593 azx1593 82 Mar 26 23:54 .xsession-errors
```


Assignment 1-2

/home /var

Directory path:

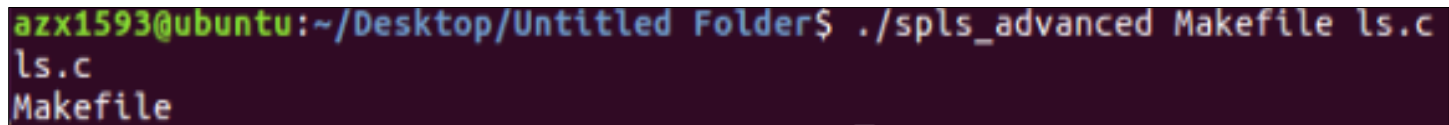
- 실행 예제 (cont'd)
 - \$./spls_advanced -la /home /var

```
azx1593@ubuntu:~$ ./spls_advanced -la /home /var
Directory path: /home
total : 16
drwxr-xr-x  4  root    root    4096   Mar 11 22:05  .
drwxr-xr-x 24  root    root    4096   Mar 11 06:39  ..
drwxr-xr-x 18  azx1593 azx1593 4096   Mar 27 01:26  azx1593
drwxr-xr-x 15  sp2019000000 sp2019000000 4096   Mar 11 22:09  sp2019000000
Directory path: /var
total : 56
drwxr-xr-x 14  root    root    4096   Jul 30 17:50  .
drwxr-xr-x 24  root    root    4096   Mar 11 06:39  ..
drwxr-xr-x  2  root    root    4096   Mar 26 23:58  backups
drwxr-xr-x 16  root    root    4096   Mar 11 00:45  cache
drwxrwxrwx  2  root    whoopsie 4096   Mar 12 07:35  crash
drwxr-xr-x 67  root    root    4096   Mar 27 00:18  lib
drwxrwxr-x  2  root    staff    4096   Apr 12 13:14  local
drwxrwxrwx  4  root    root     120   Mar 27 00:18  lock
drwxrwxr-x 14  root    syslog   4096   Mar 27 00:18  log
drwxrwxr-x  2  root    mail     4096   Jul 30 17:30  mail
drwxrwxrwx  2  root    whoopsie 4096   Jul 30 17:40  metrics
drwxr-xr-x  2  root    root     4096   Jul 30 17:30  opt
drwxr-xr-x 28  root    root     980   Mar 27 01:28  run
drwxr-xr-x  2  root    root     4096   Jul 19 03:48  snap
drwxr-xr-x  7  root    root     4096   Jul 30 17:37  spool
drwxrwxrwx 21  root    root     4096   Mar 27 01:28  tmp
```

Assignment 1-2

- 실행 예제 (cont'd)

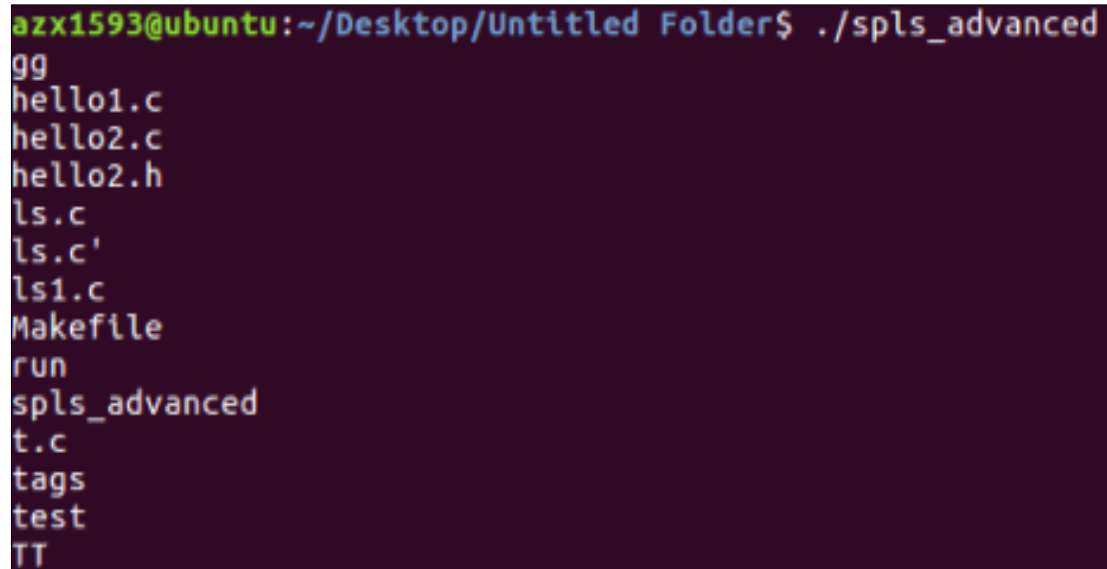
- \$./spls_advanced Makefile ls.c



```
azx1593@ubuntu:~/Desktop/Untitled Folder$ ./spls_advanced Makefile ls.c
ls.c
Makefile
```

A terminal window showing the command `./spls_advanced Makefile ls.c` being executed. The output lists `ls.c` and `Makefile`. A line from the bullet point above points to this terminal output.

- ./spls_advanced



```
azx1593@ubuntu:~/Desktop/Untitled Folder$ ./spls_advanced
gg
hello1.c
hello2.c
hello2.h
ls.c
ls.c'
ls1.c
Makefile
run
spls_advanced
t.c
tags
test
TT
```

A terminal window showing the command `./spls_advanced` being executed. The output lists various files and directories: `gg`, `hello1.c`, `hello2.c`, `hello2.h`, `ls.c`, `ls.c'`, `ls1.c`, `Makefile`, `run`, `spls_advanced`, `t.c`, `tags`, `test`, and `TT`.