

2018 시스템 프로그래밍
- Lab 07 -

제출일자	2018.11.30.
분 반	02
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Trace 05

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 05 -s ./tshref
Running trace05.txt...
Success: The test and reference outputs for trace05.txt matched!
Test output:
#
# trace05.txt - Run a background job.
#
tsh> ./myspin1 &
(1) (3776) ./myspin1 &
tsh> quit

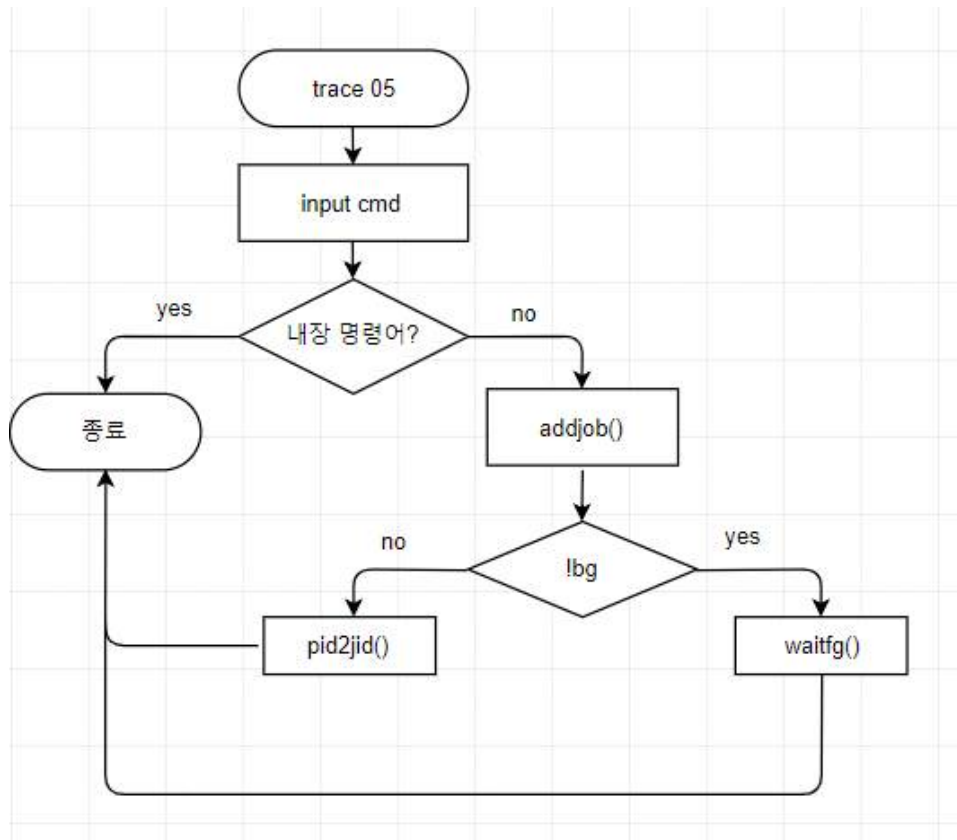
Reference output:
#
# trace05.txt - Run a background job.
#
tsh> ./myspin1 &
(1) (3784) ./myspin1 &
tsh> quit
```

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 05 -s ./tsh
Running trace05.txt...
Success: The test and reference outputs for trace05.txt matched!
Test output:
#
# trace05.txt - Run a background job.
#
tsh> ./myspin1 &
(1) (9797) ./myspin1 &
tsh> quit

Reference output:
#
# trace05.txt - Run a background job.
#
tsh> ./myspin1 &
(1) (9805) ./myspin1 &
tsh> quit
```

```
eslab_tsh> ./myspin1 &
(1) (12357) ./myspin1 &
eslab_tsh> quit
c201402414@2018-sp:~/shell/shlab-handout$
```

플로우 차트



```

170 void eval(char *cmdline)
171 {
172     char *argv[MAXARGS];
173     pid_t pid;
174     int bg;
175
176     bg = parseline(cmdline,argv);
177     //명령어를 parseline을 통해 분리
178
179     if (!builtin_cmd(argv)){
180         if((pid = fork())== 0) {
181             if((execve(argv[0], argv, environ) < 0 )){
182                 printf("%s : Command not found\n", argv);
183                 exit(0);
184             }
185         }
186         addjob(jobs, pid, (bg ==1?BG:FG), cmdline);
187         if(!bg){
188             waitfg(pid,bg);
189         }
190         else{
191             printf("(%d) (%d) %s", pid2jid(pid), pid, cmdline);
192         }
193     }
194     // parsing된 명령어를 전달
195     //builtin_cmd(argv);
196
197     return;
198 }

```

186 - bg 가 1이면 bg, 아니면 fg를 addjob한다.

187 - !bg는 foreground일때 실행하는 것이다 참일 때 waitfg를 실행
아니면 pid2jid를 사용하여 출력을 한다.

Trace 06

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 06 -s ./tshref
Running trace06.txt...
Success: The test and reference outputs for trace06.txt matched!
Test output:
#
# trace06.txt - Run a foreground job and a background job.
#
tsh> ./myspin1 &
(1) (5249) ./myspin1 &
tsh> ./myspin2 1

Reference output:
#
# trace06.txt - Run a foreground job and a background job.
#
tsh> ./myspin1 &
(1) (5258) ./myspin1 &
tsh> ./myspin2 1
```

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 06 -s ./tsh
Running trace06.txt...
Success: The test and reference outputs for trace06.txt matched!
Test output:
#
# trace06.txt - Run a foreground job and a background job.
#
tsh> ./myspin1 &
(1) (5435) ./myspin1 &
tsh> ./myspin2 1

Reference output:
#
# trace06.txt - Run a foreground job and a background job.
#
tsh> ./myspin1 &
(1) (5446) ./myspin1 &
tsh> ./myspin2 1
```

각 trace 별 플로우 차트

trace05랑 동일

trace 해결 방법 설명

trace05랑 같은 방식으로 동작한다.

Trace 07

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 07 -s ./tshref
Running trace07.txt...
Success: The test and reference outputs for trace07.txt matched!
Test output:
#
# trace07.txt - Use the jobs builtin command.
#
tsh> ./myspin1 10 &
(1) (10269) ./myspin1 10 &
tsh> ./myspin2 10 &
(2) (10271) ./myspin2 10 &
tsh> jobs
(1) (10269) Running ./myspin1 10 &
(2) (10271) Running ./myspin2 10 &

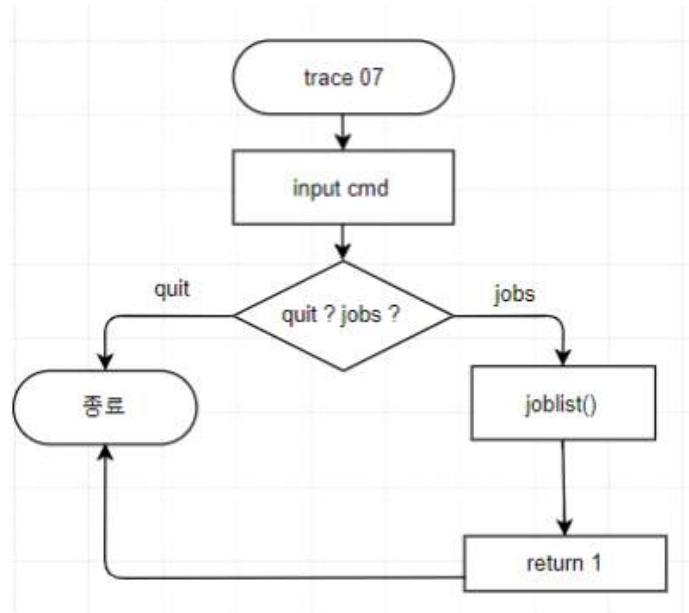
Reference output:
#
# trace07.txt - Use the jobs builtin command.
#
tsh> ./myspin1 10 &
(1) (10279) ./myspin1 10 &
tsh> ./myspin2 10 &
(2) (10281) ./myspin2 10 &
tsh> jobs
(1) (10279) Running ./myspin1 10 &
(2) (10281) Running ./myspin2 10 &
```

```
c201402414@2018-sp:~/shell/shlab-handout$ ./sdriver -V -t 07 -s ./tsh
Running trace07.txt...
Success: The test and reference outputs for trace07.txt matched!
Test output:
#
# trace07.txt - Use the jobs builtin command.
#
tsh> ./myspin1 10 &
(1) (10302) ./myspin1 10 &
tsh> ./myspin2 10 &
(2) (10304) ./myspin2 10 &
tsh> jobs
(1) (10302) Running ./myspin1 10 &
(2) (10304) Running ./myspin2 10 &

Reference output:
#
# trace07.txt - Use the jobs builtin command.
#
tsh> ./myspin1 10 &
(1) (10312) ./myspin1 10 &
tsh> ./myspin2 10 &
(2) (10314) ./myspin2 10 &
tsh> jobs
(1) (10312) Running ./myspin1 10 &
(2) (10314) Running ./myspin2 10 &
```

```
eslab_tsh> ./myspin1 10 &
(1) (11757) ./myspin1 10 &
eslab_tsh> ./myspin1 1 &
(2) (11908) ./myspin1 1 &
eslab_tsh> jobs
(1) (11757) Running ./myspin1 10 &
(2) (11908) Running ./myspin1 1 &
```

각 trace 별 플로우 차트



trace 해결 방법 설명

```
200 int builtin_cmd(char **argv)
201 {
202     char *cmd = argv[0];
203
204     if(!strcmp(cmd, "quit")){
205         exit(0);
206     }
207     else if(!strcmp(cmd, "jobs")){
208         listjobs(jobs, STDOUT_FILENO);
209         return 1;
210     }
211     return 0;
212 }
```

trace 01과 동일

jobs를 입력했을 시 listjobs함수를 호출하고 리스트를 출력하고 1을 리턴한다.