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소스코드

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <sys/times.h>

#include <sys/wait.h>

void ssu\_do\_cmd(char \*cmd);

void ssu\_print\_times(clock\_t real, struct tms \*tms\_start, struct tms \*tms\_end);

void ssu\_echo\_exit(int status);

int main(int argc, char \*\*argv){

int i;

setbuf(stdout, NULL); // stdout에서 버퍼를 사용하지 않음

for(i=1; i<argc; i++){

ssu\_do\_cmd(argv[i]); // argv를 ssu\_do\_cmd 처리

}

exit(0);

}

void ssu\_do\_cmd(char \*cmd){

struct tms tms\_start, tms\_end;

clock\_t start, end;

int status;

printf("\ncommand: %s\n", cmd);

if((start = times(&tms\_start)) == -1){ // 현재 시간 저장

fprintf(stderr, "times error\n");

exit(1);

}

if((status = system(cmd)) < 0){ //명령어 실행

fprintf(stderr, "system error\n");

exit(1);

}

if((end = times(&tms\_end)) == -1){ // 현재 시간 저장

fprintf(stderr, "times error\n");

exit(1);

}

ssu\_print\_times(end-start, &tms\_start, &tms\_end); // 걸린 시간 출력

ssu\_echo\_exit(status); // status를 출력

}

void ssu\_print\_times(clock\_t real, struct tms \*tms\_start, struct tms \*tms\_end){

static long clocktick = 0;

if(clocktick == 0)

if((clocktick = sysconf(\_SC\_CLK\_TCK)) < 0){

fprintf(stderr, "sysconf error\n");

exit(1);

}

printf(" real: %7.2f\n", real / (double)clocktick);

printf(" user: %7.2f\n", (tms\_end->tms\_utime - tms\_start->tms\_utime) / (double)clocktick);

printf(" sys: %7.2f\n", (tms\_end->tms\_stime - tms\_start->tms\_stime) / (double)clocktick);

printf(" child user: %7.2f\n", (tms\_end->tms\_cutime - tms\_start->tms\_cutime) / (double)clocktick);

printf(" child sys: %7.2f\n", (tms\_end->tms\_cstime - tms\_start->tms\_cstime) / (double)clocktick);

}

void ssu\_echo\_exit(int status){

if(WIFEXITED(status))

printf("normal termination, exit status = %d\n", WEXITSTATUS(status));

else if(WIFSIGNALED(status))

printf("abnormal termination, exs = %d%s\n", WEXITSTATUS(status),

#ifdef WCOREDUMP

WCOREDUMP(status) ? " (core file generated)" : "");

#else

"");

#endif

else if(WIFSTOPPED(status))

printf("child stopped, signal number = %d\n", WSTOPSIG(status));

}

실행화면

