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1. 소스 코드

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <sys/time.h>

#include <fcntl.h>

#include "ssu\_runtime.h"

#define NAMESIZE 50

struct employee {

char name[NAMESIZE];

int salary;

int pid;

};

int main(int argc, char \*argv[])

{

struct flock lock;

struct employee record;

int fd, recnum, pid;

long position;

gettimeofday(&begin\_t, NULL);

if ((fd = open(argv[1], O\_RDWR)) == -1) { // 인자로 받은 파일을 open()

perror(argv[1]);

exit(1);

}

pid = getpid();

for (;;) {

printf("\nEnter record number: ");

scanf("%d", &recnum); // 숫자를 입력받아

if (recnum < 0) {

break;

}

position = recnum \* sizeof(record);

lock.l\_type = F\_WRLCK;

lock.l\_whence = 0;

lock.l\_start = position;

lock.l\_len = sizeof(record);

if (fcntl(fd, F\_SETLKW, &lock) == -1) { // 해당 position에 길이 record만큼 write락 설정

perror(argv[1]);

exit(2);

}

lseek(fd, position, 0);

if (read(fd, (char \*)&record, sizeof(record)) == 0) {

printf("record %d not found\n", recnum);

lock.l\_type = F\_UNLCK;

fcntl(fd, F\_SETLK, &lock);

continue;

}

printf("Employee: %s, salary: %d\n", record.name, record.salary);

record.pid = pid;

printf("Enter new salary: ");

scanf("%d", &record.salary);

lseek(fd, position, 0);

write(fd, (char \*)&record, sizeof(record));

lock.l\_type = F\_UNLCK;

fcntl(fd, F\_SETLK, &lock);

}

close(fd);

gettimeofday(&end\_t, NULL);

ssu\_runtime(&begin\_t, &end\_t);

exit(0);

}

1. 실행 결과

