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1. 소스코드

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <fcntl.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;

char ans[5];

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

perror(argv[1]);

exit(1);

}

pid = getpid();

for(;;){

printf("\nEnter record number: ");

scanf("%d", &recnum);

if(recnum<0)

break;

position = recnum \* sizeof(record);

lock.l\_type = F\_RDLCK; // read lock

lock.l\_whence = 0; // 파일의 일부만 lock

lock.l\_start = position;

lock.l\_len = sizeof(record);

if(fcntl(fd, F\_SETLKW, &lock) == -1){ // lock check

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);

printf("Do you want to update salary (y or n)? ");

scanf("%s", ans);

if(ans[0] != 'y'){

lock.l\_type = F\_UNLCK; // unlock

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

continue;

}

lock.l\_type = F\_WRLCK; // write lock

if(fcntl(fd, F\_SETLKW, &lock) == -1){ // lock check

perror(argv[1]);

exit(3);

}

record.pid = pid;

printf("Enter new salary:");

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

lseek(fd, position, 0);

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

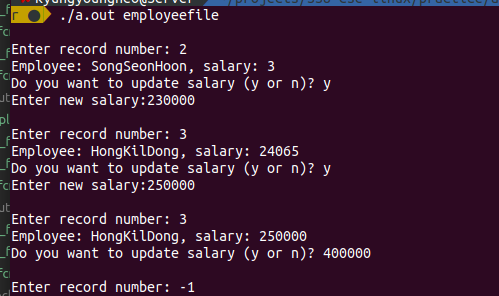
lock.l\_type = F\_UNLCK; // unlock

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

}

close(fd);

}

2. 실행결과