컴퓨터학부 20142468 허경영

1. 소스코드

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <fcntl.h>

#include <sys/time.h>

#define SEC\_TO\_MICRO 1000000

#define TABLE\_SIZE 128

#define BUFFER\_SIZE 1024

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

struct timeval begin\_t, end\_t;

static struct {

long offset;

int length;

} table [TABLE\_SIZE];

char buf[BUFFER\_SIZE];

long offset;

int entry, i, length, fd;

gettimeofday(&begin\_t, NULL);

if(argc < 2){

fprintf(stderr, "usage: %s <file>\n", argv[0]);

exit(1);

}

if((fd = open(argv[1], O\_RDONLY)) < 0){

fprintf(stderr, "open error for %s\n",argv[1]);

exit(1);

}

entry = 0;

offset = 0;

while((length = read(fd, buf, BUFFER\_SIZE)) > 0){ // fd에서 사이즈만큼 읽고 buf에 저장

for(i = 0; i < length; i++){

table[entry].length++; // 엔트리의 length 증가

offset++;

if(buf[i] == '\n')

table[++entry].offset = offset; // \n 만나면 offset 설정 후 엔트리 증가

}

}

#ifdef DEBUG // 디버그 모드일 때 실행

for(i = 0; i < entry; i++){

printf("%d : %ld, %d\n", i+1, table[i].offset, table[i].length);

}

#endif

while(1){

printf("Enter line number : ");

scanf("%d", &length);

if(--length < 0)

break;

lseek(fd, table[length].offset, 0);

if(read(fd, buf, table[length].length) <= 0){

continue;

}

buf[table[length].length] = '\0';

printf("%s",buf);

}

close(fd);

gettimeofday(&end\_t, NULL);

end\_t.tv\_sec -= begin\_t.tv\_sec;

if(end\_t.tv\_usec < begin\_t.tv\_usec){

end\_t.tv\_sec--;

end\_t.tv\_usec += SEC\_TO\_MICRO;

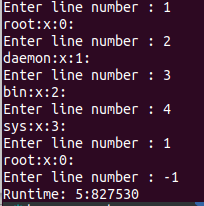
}

end\_t.tv\_usec -= begin\_t.tv\_usec;

printf("Runtime: %ld:%ld\n",end\_t.tv\_sec, end\_t.tv\_usec);

exit(0);

}

2. 실행결과