201533661 이승수’s Algorithm homework#1

Date:2016.09.04

#include <stdio.h>

struct schedule

{

int starthh, startmm;

int finehh, finemm;

char appointment[255];

};

FILE \*inF, \*outF;

void main()

{

int s;//s<100

while (1)

{

char fileName[20];

int dayNumber=0;

printf("\nput [fileName]: ");

scanf("%s", fileName);

printf("put [dayNumber]: ");

scanf("%d",&dayNumber);

inF = fopen(fileName, "r");

struct schedule work;

short timegauge[480] = { 0 };//minutes

short startTime, durationTime, finishTime;

fscanf(inF, "%d", &s);

int schedulecount = 0;

while (!feof(inF) && schedulecount<s)//read s schedule datas from text file

{

fscanf(inF, "%d:%d %d:%d", &work.starthh, &work.startmm, &work.finehh, &work.finemm);

startTime = (work.starthh \* 60 + work.startmm);

finishTime = (work.finehh \* 60 + work.finemm);

durationTime = (finishTime - startTime);

for (int i = (startTime - 600); i < (finishTime - 600); i++)//-600 because gauge start at 10:00

{

timegauge[i] = 1;

}

fgets(work.appointment, 255, inF);

//printf("\*%02d:%02d %02d:%02d %s\*\n", work.starthh, work.startmm, work.finehh, work.finemm, work.appointment);

schedulecount++;

}

short startNap = 0, durationNap = 0;

short startTemp = 0, durationTemp = 0;

for (int i = 0; i < 480; i++)//search for longest nap

{

if (timegauge[i] == 0)

{

int j = 0;

startTemp = i + 600;//because timegauge start at 10:00

while (timegauge[i + j] == 0)

{

durationTemp++;

j++;

}

if (durationNap < durationTemp)

{

startNap = startTemp;

durationNap = durationTemp;

}

startTemp = 0;

durationTemp = 0;

}

else

continue;

}

switch (durationNap % 60)//print output

{

case 0:

if (durationNap < 60)

printf("Day #%d: the longest nap starts at %02d:%02d and will last for %d minutes.",dayNumber, startNap / 60, startNap % 60, durationNap);

else

printf("Day #%d: the longest nap starts at %02d:%02d and will last for %d hours.", dayNumber, startNap / 60, startNap % 60, durationNap / 60);

break;

default:

printf("Day #%d: the longest nap starts at %02d:%02d and will last for %d hours and %d minutes.", dayNumber, startNap / 60, startNap % 60, durationNap / 60, durationNap % 60);

}

}

}

