#include <stdio.h>

#include <stdlib.h>

#include <dirent.h>

#include <time.h>

#include <string.h>

#include <math.h>

int main()

{

FILE \*f\_avm, \*f\_can, \*fuori;

char buff[1000], riga\_avm[1000], list[100][100];

int i, j, flag, n\_files, id, value, v[2][4], p\_ref, temp;

unsigned int timestamp\_avm, timestamp\_can;

DIR \*d;

struct dirent \*dir;

for (i=0;i<100;i++)

list[i][0]='\0';

d = opendir("csv");

if (d) {

for (i=0;(dir=readdir(d))!=NULL;) {

if(strncmp(dir->d\_name, "avm", 3) == 0) {

strcpy(list[i], dir->d\_name);

i++;

}

}

closedir(d);

n\_files = i;

printf("There are %d file pairs in 'csv' folder\n", n\_files);

} else {

printf("ERROR: 'csv' directory not found!\n");

return 1;

}

mkdir("merged\_csv");

for (i=0,flag=0;i<n\_files;i++, flag=0) {

sprintf(buff, "csv/%s", list[i]);

f\_avm = fopen(buff,"r");

list[i][29]='\0';

sprintf(buff, "csv/can%s.csv", list[i]+3);

f\_can = fopen(buff,"r");

if (f\_avm==NULL||f\_can==NULL)

printf("ERROR!\n");

sprintf(buff, "merged\_csv/%s.csv", list[i]+3);

fuori = fopen(buff,"w");

fgets(riga\_avm, 1000, f\_avm);

fprintf(fuori,"DATETIME;TIMESTAMP;DOORS;FIX;LONGITUDE;LATITUDE;SPEED;LINE;SHIFT;DEST;CURRENT;VEHICLE;P\_REF;TEMP\n");

fgets(buff, 1000, f\_can);

fscanf(f\_can, "%\*d-%\*d-%\*d %\*d:%\*d:%\*d;%u.%\*d;%d;%\*d;%d", &timestamp\_can, &id, &value);

while (flag==0&&fgets(riga\_avm,1000,f\_avm)&&sscanf(riga\_avm,"%\*d-%\*d-%\*d %\*d:%\*d:%\*d;%u",&timestamp\_avm)==1) {

for (j=0; flag == 0 && timestamp\_can < timestamp\_avm;) {

if (timestamp\_can == (timestamp\_avm - 1) && (id/10 == 18 || id/10 == 28)) {

v[(id/100)-1][(id%10)-1] = value;

j++;

}

if (fscanf(f\_can, "%\*d-%\*d-%\*d %\*d:%\*d:%\*d;%u.%\*d;%d;%\*d;%d", &timestamp\_can, &id, &value) < 3)

flag = 1;

}

if (j==8) {

p\_ref = (2\*v[0][0])+v[0][1]+v[0][2]+(2\*v[0][3]);

temp = round(((float)v[1][0]+v[1][1]+v[1][2]+v[1][3])/4);

riga\_avm[strlen(riga\_avm)-1] = '\0';

fprintf(fuori, "%s;%d;%d\n", riga\_avm, p\_ref, temp);

}

}

fclose(f\_avm);

fclose(f\_can);

fclose(fuori);

}

return 0;

}