**kristina@IdeaPad**:**~/MAI/KP6**$ date

Чт 20 мая 2021 12:57:52 GMT

**kristina@IdeaPad**:**~/MAI/KP6**$ ls

students\_dump.c students\_task.c

makefile student.h

**kristina@IdeaPad**:**~/MAI/KP6**$ # печатаем исходники

**kristina@IdeaPad**:**~/MAI/KP6**$ cat student.h

#ifndef student\_H

#define student\_H

#include <stdlib.h>

#include <stdbool.h>

#include <string.h>

// информация студента

typedef struct {

char lastname[32];

char initials[8];

char gender[8];

short int grade\_num;

char grade\_letter;

char university[16];

char work\_place[32];

} student;

#endif

**kristina@IdeaPad**:**~/MAI/KP6**$ cat students\_dump.c

#include <stdio.h>

#include <string.h>

#include "student.h"

// чтение информации студента с консоли

int readStudent1(student \*a)

{

return scanf("%[^;];%[^;];%[^;];%hd;%c;%[^;];%[^\n]\n",a->lastname,a->initials,a->gender,&a->grade\_num,&a->grade\_letter,a->university,a->work\_place)==7;

}

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

{

if(argc!=2)

{

printf("Usage: [filename]\n");

return 1;

}

printf("input format:\nlastname;initials;gender;grade\_num;grade\_letter;university;work\_place\n");

FILE \*out1=fopen(argv[1],"wb");

if(!out1)

{

printf("Cant open this file\n");

return 2;

}

student cs1;

while(readStudent1(&cs1))

fwrite(&cs1,sizeof(cs1),1,out1);

printf("saved\n");

fflush(out1);

fclose(out1);

return 0;

}

**kristina@IdeaPad**:**~/MAI/KP6**$ cat students\_task.c

#include <stdio.h>

#include <string.h>

#include "student.h"

int filesize(char \*fname)

{

FILE \*in=fopen(fname,"rb");

fseek(in, 0L, SEEK\_END);

int size=ftell(in);

fclose(in);

return size;

}

void printstud(student cs1)

{

printf("%-16s %-8s %-7s %-9d %-7c %-16s %-16s\n",cs1.lastname,cs1.initials,cs1.gender,cs1.grade\_num,cs1.grade\_letter,cs1.university,cs1.work\_place);

}

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

{

if(argc!=3)

{

printf("Usage: [filename] [-f|-p]\n");

return 1;

}

int fsize=filesize(argv[1]);

FILE \*in1=fopen(argv[1],"rb");

if(!in1)

{

printf("Cant open this file\n");

return 2;

}

switch(argv[2][1])

{

case &apos;p&apos;:

{

int count=fsize/sizeof(student);

student studs[count];

char checked[count];

memset(checked,0,count);

fread(&studs,sizeof(student),count,in1);

char found=0;

printf("Однофамильцы:\n");

for(int i=0;i<count;i++)

{

int eqs=0;

for(int j=i+1;j<count;j++)

{

if(!checked[j] && strcmp(studs[i].lastname,studs[j].lastname)==0)

{

if(eqs==0)

printstud(studs[i]);

printstud(studs[j]);

eqs++;

checked[j]=1;

}

}

if(eqs)

{

found=1;

printf("\n");

}

}

if(!found)

printf("однофамильцев нет\n");

break;

}

case &apos;f&apos;:

{

student cs1;

printf("LASTNAME INITIALS GENDER GRADE\_NUM LETTER UNIVERSITY WORK\_PLACE\n");

while(fread(&cs1,sizeof(cs1),1,in1)==1)

printstud(cs1);

break;

}

default:

printf("unsupported argument\n");

}

fclose(in1);

return 0;

}

**kristina@IdeaPad**:**~/MAI/KP6**$ cat makefile

CC = gcc

CFLAGS = -std=c99 -pedantic -Wall -g

SRC\_DUMP = students\_dump.c

SRC\_QUERY = students\_task.c

dump:

$(CC) $(CFLAGS) $(SRC\_DUMP) -o "dump.bin"

query:

$(CC) $(CFLAGS) $(SRC\_QUERY) -o "query.bin"

clean:

rm "dump.bin" "query.bin"

**kristina@IdeaPad**:**~/MAI/KP6**$ # компилируем исходнинки

**kristina@IdeaPad**:**~/MAI/KP6**$ make query dump

gcc -std=c99 -pedantic -Wall -g students\_task.c -o "query.bin"

gcc -std=c99 -pedantic -Wall -g students\_dump.c -o "dump.bin"

**kristina@IdeaPad**:**~/MAI/KP6**$ # используем вспомогательную программу для создания входных данных

**kristina@IdeaPad**:**~/MAI/KP6**$ ./dump.bin input1.dat

input format:

lastname;initials;gender;grade\_num;grade\_letter;university;work\_place

Fedorov;A.D.;male;9;A;MAI;nigde

Zaycev;S.F.;male;11;B;MAI;mcdonalds

Kamilov;R.T.;male;9;D;MGU;freelance

Akimova;A.G.;female;11;E;PTU;freelance

Zaycev;K.L.;male;9;A;MGU;nigde

Gerasimova;P.L.;female;11;A;MPU;nigde

Galkina;K.J.;female;11;C;MIREA;mcdonalds

Gladkova;H.F.;female;9;B;MAI;freelance

Belyakova;G.H.;female;11;B;MGU;mcdonalds

Belousov;B.E.;male;11;F;MPU;nigde

Gorlova;D.K.;female;9;A;MAI;freelance

Zaycev;O.V.;male;9;C;MGU;freelance

Denisova;H.T.;female;11;C;PTU;mcdonalds

Demidov;D.V;male;11;B;MIREA;nigde

Belyakova;C.P.;female;9;C;MPU;mcdonalds

;;;;;;

saved

**kristina@IdeaPad**:**~/MAI/KP6**$ ./dump.bin input2.dat

input format:

lastname;initials;gender;grade\_num;grade\_letter;university;work\_place

Fedorov;A.D.;male;9;A;MAI;nigde

Akimova;S.F.;female;11;B;MAI;mcdonalds

Kamilov;R.T.;male;9;D;MGU;freelance

Akimova;A.G.;female;11;E;PTU;freelance

Ivanov;K.L.;male;9;A;MGU;nigde

Gerasimova;P.L.;female;11;A;MPU;nigde

Galkina;K.J.;female;11;C;MIREA;mcdonalds

Gladkova;H.F.;female;9;B;MAI;freelance

Belyakova;G.H.;female;11;B;MGU;mcdonalds

Belousov;B.E.;male;11;F;MPU;nigde

Fedorov;D.K.;male;9;A;MAI;freelance

Ivanov;O.V.;male;9;C;MGU;freelance

;;;;;;

saved

**kristina@IdeaPad**:**~/MAI/KP6**$ ./dump.bin input3.dat

input format:

lastname;initials;gender;grade\_num;grade\_letter;university;work\_place

Fedorov;A.D.;male;9;A;MAI;nigde

Kamilov;R.T.;male;9;D;MGU;freelance

Akimova;A.G.;female;11;E;PTU;freelance

Zaycev;K.L.;male;9;A;MGU;nigde

Gerasimova;P.L.;female;11;A;MPU;nigde

Galkina;K.J.;female;11;C;MIREA;mcdonalds

Gladkova;H.F.;female;9;B;MAI;freelance

Belyakova;G.H.;female;11;B;MGU;mcdonalds

Belousov;B.E.;male;11;F;MPU;nigde

Gorlova;D.K.;female;9;A;MAI;freelance

Denisova;H.T.;female;11;C;PTU;mcdonalds

Demidov;D.V;male;11;B;MIREA;nigde

;;;;;;

saved

**kristina@IdeaPad**:**~/MAI/KP6**$ ls

**dump.bin** input1.dat input2.dat input3.dat makefile

students\_dump.c students\_task.c **query.bin** student.h

**kristina@IdeaPad**:**~/MAI/KP6**$ # печатаем таблицу флагом -f и выполняем задание флагом -p для каждого набора

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input1.dat -f

LASTNAME INITIALS GENDER GRADE\_NUM LETTER UNIVERSITY WORK\_PLACE

Fedorov A.D. male 9 A MAI nigde

Zaycev S.F. male 11 B MAI mcdonalds

Kamilov R.T. male 9 D MGU freelance

Akimova A.G. female 11 E PTU freelance

Zaycev K.L. male 9 A MGU nigde

Gerasimova P.L. female 11 A MPU nigde

Galkina K.J. female 11 C MIREA mcdonalds

Gladkova H.F. female 9 B MAI freelance

Belyakova G.H. female 11 B MGU mcdonalds

Belousov B.E. male 11 F MPU nigde

Gorlova D.K. female 9 A MAI freelance

Zaycev O.V. male 9 C MGU freelance

Denisova H.T. female 11 C PTU mcdonalds

Demidov D.V male 11 B MIREA nigde

Belyakova C.P. female 9 C MPU mcdonalds

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input1.dat -p

Однофамильцы:

Zaycev S.F. male 11 B MAI mcdonalds

Zaycev K.L. male 9 A MGU nigde

Zaycev O.V. male 9 C MGU freelance

Belyakova G.H. female 11 B MGU mcdonalds

Belyakova C.P. female 9 C MPU mcdonalds

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input2.dat -f

LASTNAME INITIALS GENDER GRADE\_NUM LETTER UNIVERSITY WORK\_PLACE

Fedorov A.D. male 9 A MAI nigde

Akimova S.F. female 11 B MAI mcdonalds

Kamilov R.T. male 9 D MGU freelance

Akimova A.G. female 11 E PTU freelance

Ivanov K.L. male 9 A MGU nigde

Gerasimova P.L. female 11 A MPU nigde

Galkina K.J. female 11 C MIREA mcdonalds

Gladkova H.F. female 9 B MAI freelance

Belyakova G.H. female 11 B MGU mcdonalds

Belousov B.E. male 11 F MPU nigde

Fedorov D.K. male 9 A MAI freelance

Ivanov O.V. male 9 C MGU freelance

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input2.dat -p

Однофамильцы:

Fedorov A.D. male 9 A MAI nigde

Fedorov D.K. male 9 A MAI freelance

Akimova S.F. female 11 B MAI mcdonalds

Akimova A.G. female 11 E PTU freelance

Ivanov K.L. male 9 A MGU nigde

Ivanov O.V. male 9 C MGU freelance

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input3.dat -f

LASTNAME INITIALS GENDER GRADE\_NUM LETTER UNIVERSITY WORK\_PLACE

Fedorov A.D. male 9 A MAI nigde

Kamilov R.T. male 9 D MGU freelance

Akimova A.G. female 11 E PTU freelance

Zaycev K.L. male 9 A MGU nigde

Gerasimova P.L. female 11 A MPU nigde

Galkina K.J. female 11 C MIREA mcdonalds

Gladkova H.F. female 9 B MAI freelance

Belyakova G.H. female 11 B MGU mcdonalds

Belousov B.E. male 11 F MPU nigde

Gorlova D.K. female 9 A MAI freelance

Denisova H.T. female 11 C PTU mcdonalds

Demidov D.V male 11 B MIREA nigde

**kristina@IdeaPad**:**~/MAI/KP6**$ ./query.bin input3.dat -p

Однофамильцы:

однофамильцев нет

**kristina@IdeaPad**:**~/MAI/KP6**$